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December 20, 2019 Via E-mail

Raphael Breines, Senior Planner
Physical & Environmental Planning
University of California, Berkeley
300 A&E Building, Berkeley, CA 94720-1382
Email: planning@berkeley.edu

Re: Scoping Comments: Wildland Vegetative Fuel Management Plan

Dear Mr. Breines,

Please accept these scoping comments submitted on behalf of Hills Conservation Network ("HCN"). The University's new fuel management plan appears to represent a substantial improvement in the "one size fits all" plan that was put forth over a decade ago. HCN has no comments at this time on the potential significant impacts identified in the initial study that will be addressed in detail in the EIR. While HCN sees much in this plan that makes sense from a fire risk mitigation perspective, HCN is proposing an alternative, outlined in detail below, that more clearly addresses the public safety concerns underlying this effort. HCN also would like to ensure that the description of the three projects identified in the initial study – the Strawberry Canyon, Claremont Canyon and Frowning Ridge Fire Hazard Reduction projects – be refined to include much more detail, including specific locations within the three project areas where each of the types of fire hazard reduction treatment are proposed to be applied.

A. For the Project-Level Analysis, the EIR Must Include a Detailed Project Description Identifying Where in the Fire Hazard Reduction Project Areas Specific Treatment Types Will Be Applied.

The plan outlined in the initial study will require a great deal of clarification prior to being suitable for an environmental impact review. HCN hopes and expects that UC will release a far more detailed study/plan prior to the availability of the draft EIR in order to ensure that a detailed project description is available for the public to review and for which UC may adequately consider the environmental impacts. UC should identify where in each of the three project-level analyses – the Strawberry Canyon, Claremont Canyon and Frowning Ridge Fire Hazard Reduction projects – each of the described treatment types will be deployed.

"An accurate, stable and finite project description is the *sine qua non* of an informative and legally adequate EIR." (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192; *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, 1023; *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182, 201.) "[A] curtailed or distorted project description," on the other hand, "may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess the advantage of terminating the proposal (*i.e.*, the "no project" alternative) and weigh other alternatives in the balance." (*County of Inyo*, 71 Cal.App.3d at 192. *See also*, CEQA Guidelines § 15124; *City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1438, 1454.)

The initial study identifies the three project areas. It also identifies a range of treatment types for the fire hazard reduction areas. The descriptions of the treatment types would appear to allow a broad range of vegetation management of differing intensities throughout the project areas. However, an accurate evaluation of the proposed fire hazard reduction project's impacts will require specificity applying the various criteria identified and how and where they will be implemented on the ground. The project considered in the EIR should indicate, among other results based on the application of the criteria identified by UC, the number of trees to be removed and left intact throughout the three project areas, where herbicides may be applied, where mechanical removal would be employed, where hand removal would be employed, where clumped shrubs would be retained, and other characteristics identified in the criteria. There is ample time for UC to identify the measures and their application prior to the preparation and release of the draft EIR next year. Without this level of detail of the on-the-ground treatment to be applied in these project-level areas, HCN does not believe a DEIR will be able to assess with any confidence the potential impacts of the three Fire hazard reduction treatment areas.

B. The University Should Include an Alternative Consistent With HCN's Alternative Described Below.

Clarifying the UC's plan and the initial projects also will ensure that a reasonable range of alternatives is considered in the EIR. An EIR must describe a range of reasonable alternatives to the project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. CEQA Guidelines § 15125.6. The analysis of project alternatives must contain a quantitative assessment of the impacts of the alternatives. *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 733-73.

The lead agency is required to select the environmentally preferable alternative unless it is infeasible. A "feasible" alternative is one that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Pub. Res. Code § 21061.1; Guidelines §

15364. In the case of *Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal. App. 4th 1277, 1304-1305, the court held:

> A potentially feasible alternative that might avoid a significant impact must be discussed and analyzed in an EIR so as to provide information to the decision makers about the alternative's potential for reducing environmental impacts. Without analysis, the theory posited by the City and the Regents is purely speculative and is not supported by any facts discussed in the draft EIR or the final EIR. Since, as Habitat points out, the draft EIR and the final EIR neither discussed nor analyzed a limited-water alternative, the decision makers were not provided with any information about the effect that such an alternative might have on water supply impacts or other impacts.

CEQA does not permit a lead agency to omit any discussion and analysis of alternatives that feasibly might reduce the environmental impact of a project on the unanalyzed theory that such an alternative might not prove to be environmentally superior to the project.

With these criteria in mind, HCN has prepared an alternative which would be most effective at reducing wildland fire risks while at the same time minimizing the potential significant impacts of the University's fuel management activities.

The explicit purpose of the vegetation management plan is to mitigate the risk of fire, and the proposed primary methodology is to reduce the amount of vegetative fuel where it poses a threat to structures and people. Note that the type of fire being discussed is a vegetation fire, not a structure fire. That is to say that once a fire enters a built environment, it becomes a very different situation, and the treatments proposed in University's plan become largely irrelevant. (Note that the 1991 fire was a vegetation fire for only its first three minutes; after that, for the next two days, it was a structure fire.)

Clearly, the focus of the vegetation management plan is to reduce the potential for ignition; if there is no ignition, there is no fire. Therefore the highest priority for fuel reduction should be fine fuel, cured fuel, and – since most fires in the hills are human-caused – fuel in proximity to human activity.

The second priority should be fuel that spreads the fire, and increases the intensity of the fire. Studies of actual vegetation fires have demonstrated that ground fuel (including litter) and near-ground fuel most determines spread and intensity.

The third priority should be creating or maintaining a fire-resistive environment where potential fuel exists. This would include lowering the temperature (by shading), increasing moisture (by catching fog drip), reducing wind speed (with wind breaks), discouraging the succession of weedy, flammable fine fuel (by shading), and avoiding the creation of more fuel (by leaving behind chips, slash, or rotting logs).

The HCN Alternative

Evacuation Routes

- The potentially ambiguous language included in this section needs to be removed and replaced with more specific language. The term "prone to torching" can be interpreted in different ways by different people and should be removed. In its place the species that are intended to be removed should be listed. HCN believes that, if safety is the primary goal, a species neutral plan is critical. All trees and shrubs are prone to torching.

Subject to the distances defined in the initial study:

- All understory/ground fuels with a diameter of less than 3" should be removed.

- All ladder fuels should be removed and branches of trees overhanging these ladder fuels should be pruned up to a minimum of 8 feet.

- Only trees with a diameter of less than 18" shall be removed. Shade canopy must be maintained by ensuring that a contiguous overstory is maintained.

Fuel Breaks

Subject to the distances defined in the initial study:

- All understory/ground fuels with a diameter of less than 3" should be removed.

- All ladder fuels should be removed and branches of trees overhanging these ladder fuels should be pruned up to a minimum of 8 feet.

- Only trees with a diameter of less than 18" shall be removed. Shade canopy must be maintained by ensuring that a contiguous overstory is maintained.

Fire Hazard Reduction Zones

Within a zone of 100 - 200 feet from a roadway or structure:

- All understory/ground fuels with a diameter of less than 3" should be removed.

- All ladder fuels should be removed and branches of trees overhanging these ladder fuels should be pruned up to a minimum of 8 feet.

- Only trees with a diameter of less than 18" shall be removed. Shade canopy must be maintained by ensuring that a contiguous overstory is maintained.

- There shall be no vegetation management work beyond 200’ from a roadside or structure.

General requirements applicable to all zones

- There shall be no pesticide application to prevent regrowth of stumps. Regrowth shall be prevented using hand labor as has been effectively implemented by the East Bay Municipal Utilities District on adjacent properties.

- Since a primary objective of this plan is to reduce fuels, there shall be no new vegetation planted, as this would be ADDING fuel. Instead, the plan must reduce fuel, reduce ignition risk, and ensure that the post-treatment environment is “naturally” more fire safe. This will be accomplished by removing ground fuels, fire ladder components, while ensuring that existing shade canopy is maintained.

  In support of this HCN alternative, we cite the US Forest Service AMSET report submitted to FEMA on September 27, 2013 (attached as Exhibit 1). As stated in the AMSET report, “[r]emoval of the eucalyptus overstory would reduce the amount of shading on surface fuels, increase the wind speeds to the forest floor, reduce the relative humidity at the forest floor, increase the fuel temperature, and reduce fuel moisture. These factors may increase the probability of ignition over current conditions”. The report goes on to say “[f]urthermore, complete removal of eucalyptus overstory would result in increases in wind speed which result in a more severe range of fire behavior effects…”

- The HCN alternative specifically calls for limiting vegetation removal activities to fuel breaks, evacuation routes, and adjacent to structures. As Jack Cohen has written extensively, removing vegetation more than several hundred feet from a roadway or structure is of negligible value in reducing fire risk.

http://www.andykerr.net/kerr-public-lands-blog/2018/1/11/defensible-space-the-best-and-only-hope-for-the-homeowner-in-or-near-a-forest

https://www.youtube.com/watch?v=vL_syp1ZScM

https://www.fs.usda.gov/nfs/11558/www/nepa/101283_FSPLT3_4352063.pdf

https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire

http://www.californiachaparral.org/bprotectingyourhome.html

- Fire modeling must analyze the current condition and the *new equilibrium* condition of the project areas post-treatment. Comparing current fire risk characteristics to the condition of the treated area the day after the treatment is completed is *irrelevant*, as this will not be the equilibrium condition that will emerge after a year post-treatment.

Since the objective of these programs is to reduce long-term fire risk, then any modeling undertaken to make these assessments MUST model the new equilibrium state rather than the day after treatment state.

The HCN alternative has many advantages over the initial study recommendation:

- it's far less expensive both in the initial treatment cost and long term maintenance costs;
- with less tree and understory removal, the effects on critical habitat will be substantially diminished;
- negative aesthetic effects will be lessened;
- negative effects on slope stability will be lessened;
- carbon releases will be significantly reduced;
- attainment of fire risk mitigation objectives such as a less than 8' flame length will be enhanced over the initial study recommendations;
- ignition likelihood will be diminished over initial study recommendations;
- ignitable fuel loads (those with a diameter of less than 3") will be substantially diminished over initial study recommendations;
- favorable fire risk mitigation attributes of an intact canopy will be enhanced. These include fog drip, lower ground temperatures, higher humidity of ground fuels, and fire wind breaking capabilities of large trees. See AMSET for more details, and;
- far less need for post-treatment maintenance, including repeated forest entry to prevent resprouts.

Thank you for considering these scoping comments. HCN looks forward to reviewing the draft EIR when it is available.

Sincerely,

Michael R Lozeau

Michael R. Lozeau
On behalf of Hills Conservation Network

EXHIBIT 1

AMSET Comments following review of issues related to East Bay Hills Hazardous Fire Risk Reduction Draft EIS

Prepared by US Forest Service, Adaptive Management Services Enterprise Team
September 27, 2013

It's evident that the current condition of natural fuels in the wildland urban interface of the East Bay Hills poses a significant risk from wildland fire. Given the increased fire risk brought by the presence of eucalyptus trees in the East Bay Hills, complete removal of this species would seem to be an effective means of reducing such risk. However, complete removal of overstory trees can introduce changes to the environment which increase fire behavior in undesirable ways. First, the removal of the overstory, is likely to result in rapid establishment of native and non-native herbaceous and brush communities, bringing an increase in available surface fuels. Secondly, removal of the overstory will result in changes to environmental factors which are known to cause increases in fire behavior.

Background

The East Bay Hills, like many areas throughout California, are prone to fire which is a natural disturbance force that has shaped the landscape. The East Bay Hills are prone to fast moving, high intensity fires, due to the occurrence of natural shrublands, dominated by naturally occurring coyote brush (*Baccharis pilularison)*, as well as highly flammable blue gum eucalyptus *(Eucalyptus globulus)*, a non-native species which was introduced to the area in the early 1900's. It's our understanding after review of the Draft EIS, and associated comments, that the project proposes to mitigate the risk of wildland fires in the East Bay Hills wildland urban interface by removal of most or all of the eucalyptus overstory within the project area.

Non-native eucalyptus found in the project area undoubtedly contributes to high risk wildfires in this area. Features of bluegum eucalyptus that promote fire spread include heavy litter fall, and flammable oils in the foliage. The bark catches fire readily, and deciduous bark streamers and lichen epiphytes tend to carry fire into the canopy which tends to send out flying embers that area carried by the wind and result in the development of spot fires that ignite in advance of the fire's leading edge (Ashton 1981). While acknowledging these significant issues, there are undesirable effects of removing the eucalyptus overstory which deserve careful consideration.

Increase in Brush

A cursory literature review indicates that removal of eucalyptus stands in the East Bay Hills is likely to result in a colonization of those sites by a combination of native and non-native herbaceous and chaparral communities (native Baccharis, and invasive broom species). A study by Keeley (2005) shows that shrublands are expanding in the San Francisco East Bay region due to limited environmental controls from fire and grazing. According to Keeley's study, fire has never been frequent enough to act as a significant factor limiting brush communities in the area. He states that in the past, grazing pressure has been the force keeping brushlands in check. With reduced grazing pressure during the latter half of the 20^{th} century, grassland communities are being replaced by brushland communities.

Overstory trees limit the ability of understory species to become established by limiting sunlight, moisture, and nutrient resources that are required. Removal of the eucalyptus overstory would increase sunlight, and reduce the competition for moisture and nutrients. Without significant controls in place the result would likely be rapid introduction and expansion of brushland species, and thus, increases in live surface fuel loading into areas where the eucalyptus overstory is removed.

Increase in Fire Behavior

Increases in live surface fuel loads result in increases in potential surface fire behavior. According to Russell and McBride (2003), the natural succession from grasslands to Baccharis shrublands in the East Bay Hills indicates a dramatic increase in fire hazard for those areas. On productive sites, Baccharis often exceeds two meters high (Russell and Thompkins, 2005). According to The U.S. Fire Administration Technical Report on the 1991 East Bay Hills Fire, brush fuel types played a significant role in the progression of the fire: "The brushland would probably make up a large portion of the available fuel, particularly in the northeastern portion of the fire area."

Managing Wildland Fuels

Wildfires pose major risks to people property and ecosystem attributes in many parts of the world. While there are many different facets of management aimed at reducing wildfire risk, the treatment of natural fuel is pivotal to this aim (Reinhardt et al., 2008). Fuel treatments are designed to alter the arrangement and quantity of fuel in order to reduce the likelihood of ignition, rate of spread and intensity of wildfires. Methods vary from clearing vegetation, mechanical thinning of trees to prescribed fire.

Creating more fire resilient stands implies a three-part process of reducing surface fuels, reducing ladder fuels, and reducing crown density (Agee and Skinner 2005). Harvest alone only treats the ladder and canopy fuels and does little to address the surface fuels which are typically the primary carrier of an advancing fire. Slashing, combined with biomass utilization or grapple-piling and pile burning are also effective methods of treating surface fuels, both natural and activity created. However, it is not as effective in reducing the fine fuel loading (the smallest branchwood material) as is prescribed fire.

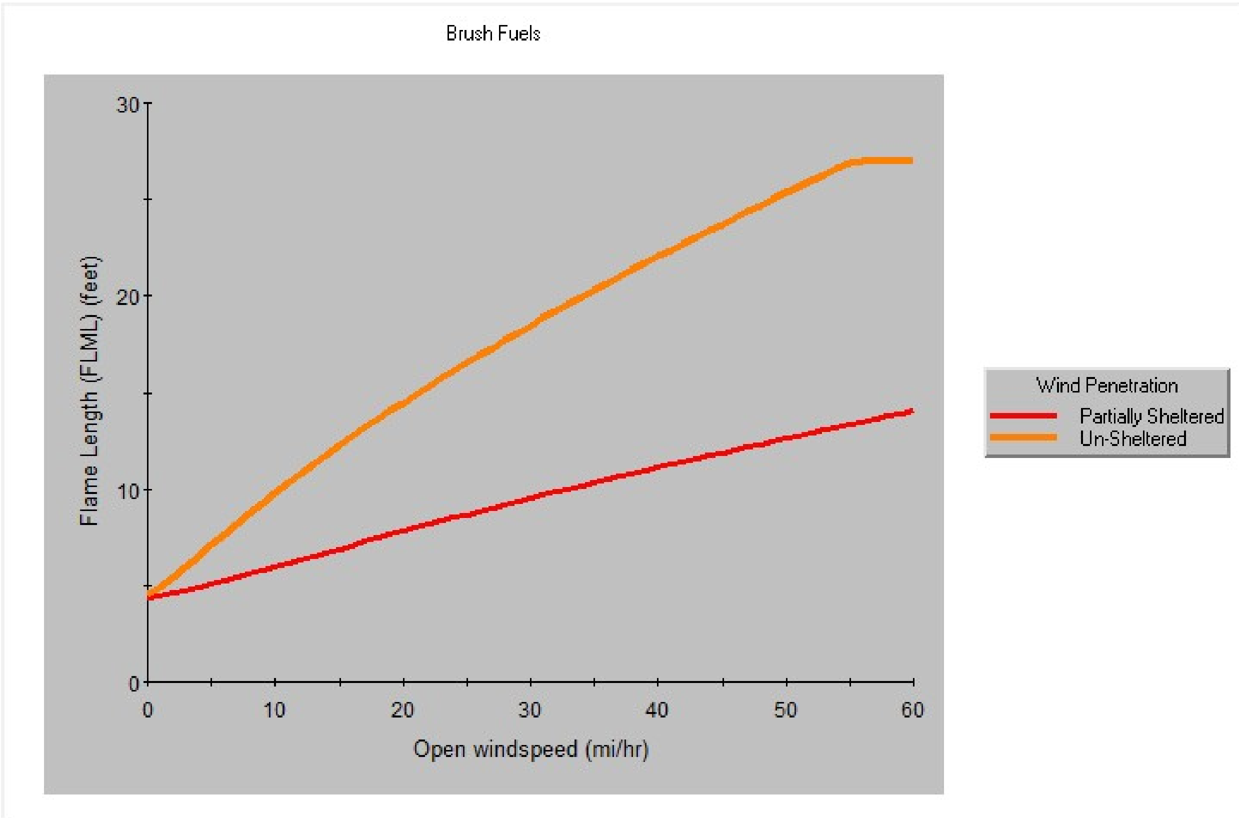
The effectiveness of treatment in reducing fuels and altering fire behavior is dependent on the type and intensity of treatment. The length of individual treatment effectiveness for these types of fuel treatments will range from 7 to 15 years dependent on initial treatment levels (Finney et al. 2007, Graham et al. 2004). Fuel reduction activities that include the use of prescribed fire are generally the most successful in reducing fuels (Graham et al. 1999).

In areas dominated by eucalyptus, studies in Australia suggested that the amount of fine fuel (<6 mm diameter) available on the forest floor (i.e. fuel consumed by the fire) was the most significant fuel variable affecting the behavior of fires in eucalyptus forests. These authors claimed that the rate of spread of the head fire is directly proportional to the load of fine fuel consumed. If the rate of spread is directly proportional to fuel load, then reducing the fuel load by half, halves the rate of spread and reduces the intensity of the fire fourfold. This relationship between fuel load, rate of spread, and fire intensity has provided a simple but powerful argument to support fuel reduction burning in eucalyptus forests for more than 50 years. (Gould et al. 2011). In the Berkeley–Oakland Hills, fuel buildup occurs very rapidly, 95% of equilibrium reached in 27 years in un-managed eucalyptus stands (Agee, 1973). To maintain low fuel levels a fuel reduction program should be implemented.

From a fire behavior standpoint commercial thinning from below that would target smaller diameter trees leaving the largest dominate trees on the landscape, followed by surface and ladder fuel treatments provides the highest level of reduction in potential fire behavior. These treatments and combinations of these treatments would break up the horizontal and vertical continuity from the surface fuels to the canopy fuels, by increasing canopy base height, and reducing canopy bulk density thus reducing the likelihood of crown fire ignition. Aerial fuels separated from surface fuels by large gaps are more difficult to ignite, thus requiring higher intensity surface fires, surface fires of longer duration, or ignition from spotting to ignite the crowns, and of course wind.

Removal of the eucalyptus overstory would reduce the amount of shading on surface fuels, increase the wind speeds to the forest floor, reduce the relative humidity at the forest floor, increase the fuel temperature, and reduce fuel moisture. These factors may increase the probability of ignition over current conditions.

Furthermore, complete removal of the eucalyptus overstory would result in increases in wind speed which result in a more severe range of fire behavior effects as previously mentioned above. The following illustration is an example of predicted or anticipated flame length for a partially sheltered and an un-sheltered brush fuel model to illustrate lower wind speeds for a thinned stand versus higher wind speeds found with complete removal of eucalyptus trees.



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Graham, Russell T.; McCaffrey, Sarah; Jain, Theresa B. (tech. eds.) 2004. Science basis for changing forest structure to modify wildfire behavior and severity. Gen. Tech. Rep. RMRS-GTR-120. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 43 p.

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