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The following comments are submitted as a response to the proposed Hill Campus Wildland Vegetative Fuel Management Plan, the NOP, and the Initial Study.

The Conservancy has been a strong supporter of the Universities efforts to mitigate fire hazards on the Hill Campus since the 1991 fire. Including the significant fire hazard reduction improvements that were achieved between 2000 and 2007 in Claremont Canyon, at Chaparral Hill, and along the Grizzly Peak Boulevard Ridgetop Fuel break between Grizzly Peak and Chaparral Hill. We believe UC was able to accomplish important fire mitigation work at these project areas with limited funds, limited staffing, and without opposition by the public.

Unfortunately, after being awarded a substantial grant in 2005 requiring FEMA to complete an Environmental Assessment, a small group of residents (HCN) in 2008 opposed the draft Strawberry Canyon EA. They complained about UC and its proposed projects, they wanted UC to act like EBRPD, and they wanted to live in the urban/wildland interface while wanting everyone to respect their right to put themselves in harm's way. They lobbied FEMA to do a more extensive East Bay Hills EIS for Hazardous Fire Risk Reduction that was then challenged by the group seven years later in litigation with FEMA in 2015. Shockingly, UC and Oakland's grant funds and their USFWS biological mitigation provisions were yanked at the last minute by a questionable settlement agreement between HCN and FEMA in 2017. Dense, flammable, and unsustainable eucalyptus and pines now remain on Hill Campus lands on the North side of Claremont Canyon and in Oaklands Tunnel Canyon putting everyone at risk during a time of increasing state-wide wildfire disasters.

Until the Tubbs, Carr, Valley, Nuns, Thomas, and Camp fire's we thought nothing could be worse than the 1991 Oakland/Berkeley firestorm that killed 24 people in less than one hour and destroyed a significant number of homes in Claremont Canyon and the Oakland/Berkeley hills. We now know better, so the Conservancy is pleased that UC has not given up and is moving forward with a Hill Campus Fuel Management Plan/EIR supported with initial funding from a Cal Fire grant for \$3.6 million. I believe the Conservancy will continue to be a strong advocate for the Universities fire hazard mitigation projects on the Hill Campus, and a continued supporter of UCs final efforts in developing and implementing a sound plan. However, Conservancy members have waited 12 years for obvious fire mitigation work to be completed and are terrified of the damage that would result if a major Diablo wind wildfire occurred on or blew through the Hill Campus.

My comments are intended to urge UC to move carefully with deliberate speed, and are submitted as a Conservancy board member on behalf of the Claremont Canyon Conservancy.
Jerry Kent, December 18, 2019

A. Overriding Policies in the UC Berkeley 2020 Long Range Development Plan that we believe should guide the current Hill Campus FM Plan/EIR process

- "First, the Hill Campus is a scenic and recreational resource for the entire East Bay, and is part of the continuous greenbelt of park and watershed land that extends the length of

the East Bay Hills from Richmond to Hayward. A greenbelt of such size and integrity, in such close proximity to densely urbanized areas, is a unique feature of the region and contributes significantly to the quality of East Bay life.” (Page 51)

- “Second, the mix of scrub and conifer and eucalyptus stands make the East Bay Hills, including the Hill Campus, a regular seasonal fire risk. This risk becomes particularly pronounced during the periodic one-or two-day shifts from the normal northwesterly winds to Diablo winds blowing from the warm, dry regions to the east. 20th century Diablo wind fires have burned over ten times the acreage of normal wind condition fires and include the firestorms of 1923 and 1991. The steep terrain and poor access and infrastructure in the Hill Campus present enormous obstacles to fire response, and some areas such as Claremont Canyon may be indefensible in Diablo wind conditions.” (Page 52)
- “Third, the steep terrain and the poor access and infrastructure also make development itself more disruptive and costly. Over 75% of the Hill Campus has a slope over 40%, and over 90% has a slope over 20%. Areas with slopes under 20% are scattered throughout the Hill Campus, often in locations not served by either roads or utilities.” (Page 52)
- The UC 2020 LRDP Policy is to: “Manage the Hill Campus Landscape to Reduce Fire and Flood Risk and Restore Native Vegetation and Hydrology Patterns. UC Berkeley maintains an ongoing program of fire fuel management in the Hill Campus to reduce fire risk to the campus, LBNL, neighboring residents, and recreational visitors to adjacent park and watershed lands. While the treatment used in a given area must be customized to address its specific conditions, including vegetation type, access, and proximity to roads and structures, in general the treatments are designed to meet one or more of the following goals:
 - Reducing fuel load by removing dead material, reducing plant density, and favoring species with lower fuel content,
 - Reducing horizontal spread by reducing fine fuel material and by separating dense clusters of vegetation with areas of lower fuel load, and
 - Reducing vertical fire spread by increasing separation of understory and crown fuels.

Whenever feasible, future fuel management practices should include the selective replacement of high-hazard introduced species with native species: for example, the restoration of native grassland and oak-bay woodland through the eradication of invasive exotics (broom, acacia, pampas grass) and the replacement of aged Monterey pines and second-growth eucalyptus. Such conversions must be planned with care, however, to avoid significant disruptive impacts to faunal habitats.” (page 57)

B. Specific comments about the NOP and the Initial Study

1. The NOP as written is inadequate because it appears to be based on a partial Plan for the UC Hills that is incomplete and likely guided by a CAL FIRE California Climate Investments Fire Prevention Grant instead of by a comprehensive Plan like the McBride Plan, that will be required for the UC Hills. The current NOP makes the following statement which

indicates that the NOP contains a partial plan which in our opinion will not survive a rigorous review including a required cumulative impact analysis.

“Facilities Services recognizes that additional work will be required and anticipates that it will increase its implementation of defensible space and roadside treatments, roadside turnout treatments, exotic plant removal, hazard tree removal, signpost treatments, and selective tree planting throughout the Plan Area”.

2. The NOP as written is inadequate because it proposes without a plan or alternatives the removal of all trees and shrubs (bare ground?) in a few selected locations, usually near intersections of roads and fire trails, in a minimum 200-foot diameter from the edge of pavement or fire trail to create a temporary refuge area for firefighters and evacuees.
3. The NOP as written is inadequate because it makes statements about fuel breaks (without a comprehensive plan) that are general in nature, some of which we may agree with and some we may oppose, does not propose alternatives, and may not be site specific to the UC Hill Campus.
 - “fuel breaks are strategically-located linear strips where vegetation has been treated or removed to aid in the containment of a fire and reduce the likelihood of crown fire transition.”
 - “fuel break treatments under the Plan, UC Berkeley would either remove understory vegetation and select trees (i.e., shaded fuel breaks) or remove all tree and shrub vegetation in the fuel break area, leaving only some herbaceous vegetation (i.e., non-shaded fuel break) to minimize fire intensity if ignited by a wildland fire.”
 - “Treatment would also alter the structure of the forest to inhibit torching and ember distribution.”
 - “Fuel breaks serve the dual purpose of creating a non-burnable area to stop the spread of fire and as a defensive position to enable effective firefighting and fire-retardant application.”
 - “Fuel break treatments in the Plan Area would could be up to 200 feet wide and installed on ridgelines or other areas naturally low in vegetation to limit the spread of fire from trees between canyons.”
 - “Treatment activities used to implement fuel break treatments could include any of the proposed treatment activities included in Table 2-1.”
4. The NOP as written is inadequate because it makes general statements about vegetation without a comprehensive plan that are general in nature, some of which we may agree with and some we may oppose, does not propose alternatives, and may not be site specific to the UC Hill Campus.

- “fire hazard reduction treatments would focus on reducing hazardous fire conditions in the Plan Area to help promote landscape resiliency and improve native habitat”.
 - “Fire Hazard Reduction Treatments are less refined than the ongoing defensible space treatments (described in Section 2.3) in several ways: grasses are not mowed and there is no requirement to prune trees”.
 - “Additionally, shrubs are retained in clumps. Treatments could involve a variety of activities, including manually and mechanically removing high fire hazard vegetation and trees, applying herbicides, and replacing fire-prone vegetation with fire-resistant trees and shrubs”.
 - “In some limited cases, irrigation could be installed to support the new fire-resistant vegetation. UC Berkeley would evaluate trees and shrubs for vertical and horizontal spacing; remove tall, unhealthy, structurally unsound or highly flammable trees that are likely to torch and distribute embers; and remove short understory trees”.
 - “Criteria for tree removal would include consideration of tree health, structure, height, potential for failure, flammability/fire hazard, high fuel volume production of small diameter fuels, and competition with other trees (including for water, space, and light)”.
 - “Criteria for retention of trees includes consideration of whether its removal would facilitate the spreading of invasive plant species and inhibit growth of surface fuels, improve habitat within the understory, encourage nesting and improve flight patterns of raptors, and prevent erosion”.
5. The NOP as written is inadequate because it makes general statements about trees without a comprehensive plan that are general in nature, some of which we may agree with and some we may oppose, does not propose alternatives, and may not be site specific to the UC Hill Campus.
- “trees cut would be chipped and distributed throughout the treatment area, or kept as logs”.
 - “In unusual circumstances where the added volume of the tree is insignificant (i.e. where trees are sparse and shrub cover is thick), trees would be bucked, (i.e., cutting a felled and delimbed tree into logs) and the tops cut into lengths no longer than 24 inches and placed beneath the shrub canopy to accelerate decomposition”.
 - “Trees would be typically cut using a mechanized feller-buncher and hand tools”.
6. The NOP as written is inadequate because it makes general statements without a comprehensive plan about herbicides, logging, potential use and location for a gasifier, and roadside vegetation management, some of which we may agree with and some we may oppose, does not propose alternatives, and may not be site specific to the UC Hill Campus.

- “to prevent re-sprouting, an herbicide would be applied to eucalyptus and acacia stumps within 3 minutes of cutting by a licensed California Qualified Applicator”.
- “Felled trees would be skidded by rubber-tired or tracked vehicles along skid trails to landings. At landings, trees would be stored or chipped using a grapple-fed chipper or a tracked chipper”.
- “Chips would be both spread on-site and transported to a gasifier to supply electricity directly to the campus. Refer to Section 2.7, “Biomass Utilization and Disposal,” for more information about the gasifier”.
- “Near roads, trails and buildings, lower limbs of trees would be pruned, understory vegetation shortened, and grass mowed”.

C. The final Hill Campus Wildland Vegetative Fuel Management Plan (Hill Campus FM Plan/EIR) must be based on verifiable wildland/urban fire mitigation science, natural resource management science, sustainable land management principles, and the requirements of law to include the following :

1. The Initial Plan (in the NOP) was too general and vague. The project areas should include the entire 800-acre Hill Campus. The Claremont Canyon Conservancy strongly recommends that UC planners base their Plan and EIR on the McBride Fuel Management and Wildfire Mitigation Proposal for the University of California Property in Strawberry and Claremont Canyons.
2. The Hill Campus FM Plan/EIR needs to identify and implement methods of vegetation management that will decrease both the short-term and long-term liability for the University resulting from damage to people, property, and/or the environment from wildfires occurring on or moving through the Hill Campus.
3. The Hill Campus FM Plan/EIR needs to identify and describe both short-term and long-term goals for the project – i.e., reducing the risk of wildfire damage over the next 2-10 years as well as decreasing the risk of wildfire damage over the longer-term 10-30 years.
4. The Hill Campus FM Plan/EIR needs to include revisions to the revised draft Plan after identifying and analyzing priorities for accomplishing the different tasks included in the Plan. The vulnerability of Hill Campus project areas to wildfires is ongoing and increasing so the final Plan should include provisions for adaptive management based on changing conditions and new information.
5. The Hill Campus FM Plan/EIR needs to identify and rank the areas of highest wildfire risk – both in terms of the likelihood of a wildfire ignition and the severity of the damage a wildfire is likely to cause based on critical examination of hard evidence, and the potential effectiveness of various methods of vegetation management in decreasing wildfire risk.
6. The Hill Campus FM Plan/EIR needs to analyze and rank the priority of applying described control methodologies to park areas that maximize Plan effectiveness in reducing wildfire damage, both to the environment, to people, and to property based on the following priorities:
 - Protection for people, human health, and safety from both direct and indirect effects from wildfires,
 - Preventing irreparable harm that cannot be adequately avoided or mitigated for destruction of homes and private property,

- Preventing irreparably damaging to populations of protected plant, listed animal species and their habitat including wildlife migration corridors,
 - Protecting and mitigating potential fire impacts on park recreational, aesthetic, and scenic values.
7. The Hill Campus FM Plan/EIR needs to investigate and analyze feasible mitigation measures or alternatives that could mitigate or avoid significant project impacts. If any mitigation measure or alternative is to be rejected as infeasible, the DEIR needs to present substantial evidence to support a decision to find the measure or alternative infeasible, using CEQA's definition of feasibility.
 8. The Hill Campus FM Plan/EIR needs to take into account the effects of future climate change while analyzing projects in the Plan including the cumulative effect of future climate change on the environment. Under a "business as usual" scenario, temperatures are now projected to rise 3.5 degrees Centigrade (~6.3 degrees Fahrenheit) by 2100 causing increases in the number of wildfires and extreme weather days in the state and the region.
 9. The Hill Campus FM Plan/EIR should analyze, provide alternatives, and make recommendations to inform policy makers about hotly debated and controversial issues about fire and resource management science, eucalyptus and pine trees, herbicides, and the public desire to save trees that became apparent during earlier plans, including:
 - The relative number of trees in groves that are considered fire hazards to be removed and the number of trees in groves to be saved that are considered to be less of a fire hazard during forest treatment alternatives in relationship to the current total number of similar trees in groves in the East Bay Hills.
 - The relative differences in fire and liability risks today between already planted large groves of trees (eucalyptus and pine forests) and lower growing native groves of trees (oaks, willows and bays woodlands).
 - The relative differences in fire mitigation in dense 1,000 stems per acre groves remaining in logged areas by removing second growth eucalyptus coppice stumps and seedlings and saving understory oaks and bays vs. keeping 40 eucalyptus trees per acre and removing all understory native vegetation and managing a cleared understory for the next 50 years.
 - The relative feasibility differences in thinning high fire risk trees to manage and retain groves with eventual large tree removal costs in the future vs. the use of one-time grant capital funds to efficiently remove high-risk tree fire risk trees to be replaced by understory native vegetation identified in each area in the final Plan.
 - The relative differences in available science based methodologies for fire Behavior Analysis that would provide better descriptions of flame height, rate of spread, and other factors to inform policy makers of the relative fire danger of vegetation in the UC hills, along evacuation routes, and in public open space areas in the project area. The fire behavior science in the 2010 Park District Plan/EIR and the 2017 FEMA Plan/EIS were largely not recognized as important by the public and media as an issue to be understood leaving most arguments about saving trees and not using herbicides. UC's final Plan's fire based science about vegetation fire

hazard descriptions must be accurate and useful for a conflicted public and for public officials who must decide how to make the city reasonably fire-safe.

- The relative differences in the use and environmental impacts of using or not using approved herbicides by licensed operators vs. labor intensive hand and mechanical treatments to remove flammable weeds and other flammable vegetation.
- The relative differences in a claim made by some individuals and groups that it is not necessary to mitigate fire hazards by removing eucalyptus, pine, and cypress trees or managing flammable park vegetation because residents instead should harden homes and accept the fact that uncontrollable wildfires are a part of living near the Campus and generally in the East Bay Hills.
- The relative differences in the desire for a “species neutral” approach that proponents assume would result in keeping costly and flammable hazard trees like eucalyptus and pine while removing less costly and flammable trees like native oaks, bays, and maples.
- The relative differences for the Campus and nearby residents in assuming that another major fire will happen soon vs. residents who want to live near the Campus “just like it is today” and are not worried about a major fire during a period of global warming when fires are now a year-round threat and the East Bay is due for another 20 year cycle of fire.
- The relative differences between the use of fuel breaks only to be located adjacent to residential areas vs. a comprehensive plan of vegetation management like the McBride Plan to prevent the intensification and spread of an incipient or already-developed wildfire.
- The relative differences between “a West wind” and “a Diablo wind” wildfire and their impact on the flammability of different species and different ecotypes (e.g., chaparral, pine/eucalyptus forest, oak/bay forest, oak/grasslands) and the capability for controlling wildfire in each condition.

D. Comments concerning additional issues that should be addressed in the final Hill Campus Wildland Vegetative Fuel Management Plan (Hill Campus FM Plan/EIR).

1. The final Hill Campus FM Plan/EIR should address the fact that the Hills and portions of the current UC Campus Hills were forested for real estate development 120-years ago and by the University more recently for research projects on the Campus Hills that are now covered with trees and unmanaged vegetation that will burn as a wildland/urban intermix fire that can't be stopped. Dense and flammable residential areas also occur near the Campus on steep hillsides with narrow roads that will not allow residents to quickly evacuate during a major Diablo wind fire. We believe that flammable eucalyptus and pine trees that are identified in the final Hill Campus FM Plan/EIR should be removed, as proposed in the UC 2020 Long Range Development Plan, to release safer understory native vegetation to be managed appropriately.
2. The final Hill Campus FM Plan/EIR needs to be independent of other typical Cal Fire-funded thinning projects. Plans for dealing with coppice eucalyptus plantations at the wildland-urban interface, for example, should not be based on plans for managing pine

forests in the Sierras intended for lumber production. Thinning of second-growth coppice blue gum eucalyptus trees is neither a safe nor sustainable method of creating a “healthy forest of blue gum eucalyptus trees” without regular use of prescribed fire in the densely, over-developed, steep, and periodically windy East Bay Hills wildland/urban interface and intermix.

3. The final Hill Campus FM Plan/EIR must be separated from the Cal Fire award of a grant for partial work without a comprehensive plan. Care must be taken that a "cart before the horse" approach to justify the provisions in a grant does not interfere with a transparent and unbiased public process required by CEQA and NEPA laws.
4. The Universities Hill Campus FM Plan/EIR should be developed recognizing that Diablo wind fires have proven to be unstoppable in unmanaged wildland vegetation. The Hill Campus FM Plan/EIR must include a comprehensive land management plan, such as the McBride Plan, while also relying on locally mandated and enforced home hardening and defensible space provisions to be administered by local agencies.
5. The University should work with the cities of Berkeley and Oakland to ensure that homes in mapped Cal Fire VHFHS zones are hardened to resist extreme fires with adequate defensible space around homes and within the community. East Bay Hill residents in Cal Fire VHFHS zones must be accountable for preparing their homes for wildfire and protecting themselves by having a family evacuation plan since there will not be a fire truck for every home and residents will be evacuated during all major fires.
6. The final Hill Campus FM Plan/EIR should describe why East Bay Hill fires are different than the fires in Southern California, the fires in forested areas of the Sierra, and why fire mitigation efforts must be site and vegetation specific to address this area’s development and vegetation history that has contributed to recognized fire hazards in the East Bay Hills wildlands and residential areas.
7. The final Hill Campus FM Plan/EIR should describe how recommended fire projects in the Plan will address future fire risks associated with global warming, extreme weather, and the new normal for more fires often described by Cal Fire, in numerous scientific publications, and by the media.
8. The final Hill Campus FM Plan/EIR should include numbered polygons of project areas with cost projections for project work to facilitate grant requests and development of annual budget requirements.
9. The final Hill Campus FM Plan/EIR should describe how the Campus will be prepared for the “new normal fire future” including climate change and the probability of more wildfires during the present century. Fire mitigation principles developed between 1991 and 2019 must be upgraded to incorporate new lessons learned in the past 28 years because the Oakland/Berkeley Hills have unfortunately held the record for the state’s most damaging and costly fires for 93 of the years since the 1923 fire, and the University must take aggressive steps to ensure that its Hill Campus and adjacent residential areas are reasonably fire-safe in the future.
10. The final Hill Campus FM Plan/EIR should expand on the description of fire behavior to address the fact that the four most damaging fires in California history have all occurred under similar circumstances (Berkeley 1923, Oakland 1991, Tubbs 2017, and Camp 2018), and that the State of California has a history of siege fires that can make quick and adequate response problematic. The most significant damage occurred in the Berkeley fire in 4 hours, the Oakland Tunnel fire a one-day fire, the Tubbs fire in one-night, and the

Camp fire in one-day when firefighting was impossible. Lessons learned have now made clear that science based reduced fuel loads in wildland areas and residential areas with ember resistant homes would have made a difference.

11. The final Hill Campus FM Plan/EIR should describe the differences between forest fires and urban intermix fires. The current theme for addressing forest fire hazards in the Sierra is to thin and then burn forests on a regular schedule to create healthy native forests that can survive repeated wildfires. We believe that model does not work in the East Bay Hills urban/wildland intermix because of extensive areas of planted eucalyptus, pine, and acacia, and that the UC Hills Plan and EIR must describe a viable model that is understandable and based on native woodlands, shrubland, and grasslands that can be managed by University employees.
12. The final Hill Campus FM Plan/EIR should upgrade the wildland and residential area data set and analysis that was developed for the 1995 East Bay Hills Vegetation Management Program that was largely the work of the UC Fire Science Lab, Campus Professors, and project consultants. Further, the 1995 wildland and residential hazard analysis should be used as a baseline for measuring improvements in fire safety projects that are included in the eventual UC Hills Campus Vegetation Management Plan.
13. The final Hill Campus FM Plan/EIR should describe the 1972 freeze and its impact on high-ridge Campus, Tilden, and Claremont Canyon eucalyptus trees using before and after aerial photos (provided here and attached), and describe the logging that took place to remove eucalyptus trees, litter, and other ground fuel to prevent another fire for the next twenty years. Also describe the fact that the East Bay has experienced freezes in 1921, 1933, 1972, and 1991 that have impacted eucalyptus trees in specific areas requiring either removal or cleanup. Also, note that the October 1991 fire followed an earlier freeze during the winter of 1990. Finally, describe the lessons learned from the 1972 freeze about leaving stumps untreated to produce the much denser and therefore more fire prone groves that exist today in public and private lands in the East Bay Hills.
14. The final Hill Campus FM Plan/EIR should include a detailed discussion of topography with over 75% of the Hill Campus having a slope over 40%, and over 90% has a slope over 20%. In our opinion, current fire modeling does not fully address slopes of this degree when combined with extreme weather conditions that are typical during Diablo winds. Therefore, mitigating fire under extreme conditions with dense vegetation and dense adjacent residential areas should be supported and justified by expert knowledge with descriptions factored upward to deal with steep gradients commonly found in the Campus Hills.
15. The final Hill Campus FM Plan/EIR should clarify the role of winds and topography to make clear that serious and dangerous fires can occur in the UC and East Bay Hills on both up and downslope conditions. the Plan should describe how West wind fires can be dangerous as well for its neighbors without adequate vegetation management.
16. The final Hill Campus FM Plan/EIR should contain provisions that will overcome the FEMA EIS train wreck that began in 2008 that resulted in loss of UC and Oakland grant funds and the prevention of significant fire mitigation project work for 12 years during a period of increasing wildfire risk to expedite work to make the Hill Campus reasonably fire safe.
17. The final Hill Campus FM Plan/EIR should recognize that the fire science in 2010 EBRPD Plan and the 2017 FEMA Plan/EIS was largely not recognized as important by the public or media as an issue to be understood leaving most arguments about saving trees and

not using herbicides. The UC Hill Campus Plan's vegetation fire hazard descriptions must be accurate and useful to a conflicted public and for university officials who must decide how to make the UC Hills reasonably fire safe.

18. The final Hill Campus FM Plan/EIR should address and deal with the two opposing "views" that have been stated by individuals and groups for the East Bay Hills with one view claiming that planted "exotic" vegetation, including eucalyptus and pine are the only fire safe vegetation because SOD will kill all oaks while shrubs and grasslands can produce uncontrollable flames above 40'. The second "view" claims that native vegetation, including oaks and bays are the only fire safe vegetation, and that UC should learn to manage native trees, shrubs, and grasslands in intermix areas especially when near homes.
19. The final Hill Campus FM Plan/EIR should address the fact that social media and blogging about vegetation fire hazards has created a political environment filled with strong views about native and exotic trees, clear-cuts, restoring natural landscapes, fake news about fire hazard myths, cherry picked facts, and media confusion about the role of vegetation fires at the urban/wildland interface and intermix as well as options for managing park and residential vegetation in Very High Severity Fire Hazard Zones in the Oakland hills.
20. The final Hill Campus FM Plan/EIR should deal with the opposing "views" noted above that have created an expectation that all fire hazard plans must pass through litigation involving courts that will require opposing parties to compromise. Past million-dollar fire hazard mitigation plans (EBRPD, FEMA, and UC) have spun off six lawsuits, two settlements and one court decision with combined awards and settlements of \$300,000 in public funds, and one ongoing litigation still unresolved. Parties who have not been involved in litigation (like the Conservancy) now know that a final Plan is important background to the eventual decision about vegetation fire hazards that will likely be made in court.
21. The final Hill Campus FM Plan/EIR should describe how the University will work with PG&E to coordinate and update standards for tree separation and limb clearance near powerlines in high-ridge locations with trees above flammable wildland vegetation that can be impacted by Diablo winds. Current standards for trimming of tree limbs and tree removal above Campus vegetation are not sufficient now that major fires have been caused by powerline ignitions.
22. The final Hill Campus FM Plan/EIR should include an area map showing the Cal Fire Very High Fire Hazard Severity Zone including and surrounding the Campus Hills between Tunnel Canyon in the South and the city of Berkeley in the North. Followed by an analysis of current, future, and cumulative impacts of fire hazard mitigation projects and responsibilities for agency wildland vegetation management. The map and analysis must cover project work by agencies owning large areas of vegetation surrounding the Hill Campus including the East Bay Regional Park District and the East Bay Municipal Utility District. The UC Plan/EIR should comment on the adequacy of other agency fuel breaks and project work that are intended to facilitate planned firefighting strategies by the local Fire departments (which by state law are responsible for Local Responsibility Area [LRA] firefighting), and fire code enforcement east of the ridge, and by Cal Fire (which by state law is responsible for State Responsibility Area [SRA] firefighting), and fire code enforcement east of the ridge.

23. The final Hill Campus FM Plan/EIR should address the fact that fire behavior in the past has been based on standard modeling that assumes relative differences in vegetation with flame lengths at the fire front of 0-4', 4-8', 8-11', and above 20'. However, these flame lengths and descriptions do not correspond to what urban residents see on TV during every fire season. The Plan should explain how these projected flame assumptions relate to flames of 100' or 200' that are commonly seen that are 2 to 5 times the height vegetation including flames above the tops of tall trees with embers expanding the fire area across valleys and ridges during a major fire. As an example, a small fire on the Vallejo side near the Carquinez Bridge in November of 2019 jumped the Straits to ignite a fire on the Crockett side during a Diablo Wind event in the East Bay during a period of multiple wind driven fires.
24. The final Hill Campus FM Plan/EIR should note that a comprehensive Environmental Impact Statement was prepared by FEMA that also covered Strawberry Canyon, Chaparral Hill, and Claremont Canyon areas. It also should describe how the University proposes to deal with the FEMA/EIS and its USFWS Biological Opinion for these three project areas, and for obtaining required permits. The Plan should also state how long it will take the University to complete a Title 10 Habitat Conservation Plan with the USFWS and other resource agencies if required, to obtain permits.
25. The final Hill Campus FM Plan/EIR should either use or explain why it does not agree with the general concepts of the 3Rs advocated by the Sierra Club and other environmental groups (that seems to me to be consistent with UCs 2020 LRPD Plan policies) about the removal of high fire risk eucalyptus and pine trees, replacement naturally by lower growing and safer natives, and for required restoration of habitat for local native species, including listed species.
26. The final Hill Campus FM Plan/EIR should propose the use of prescribed fire by Cal Fire at some future point in the Hill Campus while recognizing that current use is questionable given concerns about the possibility of losing control of a managed fire and given the operational difficulties of using prescribed fire within urban areas of the Bay Area's challenged air quality system.
27. The final Hill Campus FM Plan/EIR should include in its fire mitigation program and suppression planning a request for the location of an East Bay Hills Cal Fire Unit near the Campus. Currently, the Santa Clara Cal Fire Unit headquarters is located too far South in Mountain View with small fire stations near Sunol and Morgan Territory. Cal Fire's local stations generally have a combination of four fire trucks stationed in the East Bay while local fire departments have about 125 fire trucks with multiple support units. We believe Cal Fire should have a dedicated unit assigned to the VHFHS zoned East Bay Hills near the Campus for rapid response and to assume early command during a major wildfire.
28. The final Hill Campus FM Plan/EIR should recommend the adoption of specific updated IPM policies and updated University policies that will allow appropriate and safe use of herbicides by trained and licensed employees and by reliable and licensed contractors working on Hill Campus vegetation management projects to implement the final Plan/EIR.
29. The final Hill Campus FM Plan/EIR should recognize that thinning of mature eucalyptus stands will not be a viable strategy for reducing fire hazards in the urban/wildland areas of the Campus. The Plan should report that this strategy is unproven where tree canopies and ribbon bark are impacted on steep slopes by Diablo winds periodically exceeding 40

mph. Thinning of pine forests in the Sierra and management of eucalyptus forests in Australia is also commonly combined with a program of regular prescribed burning which has never been done and may not be possible in the UC Hills. Removal of highest-fire-risk trees in the Hills to reduce excessive vegetation fuel followed by treating eucalyptus stumps with an IPM approved herbicide is the only currently available economic and effective strategy in UC's Very High Fire Hazard Severity Zones.

30. The final Hill Campus FM Plan/EIR should recommend removal of all second-growth eucalyptus trees, coppice suckers and seedlings for both fire hazard reduction and economic reasons to allow for the restoration of areas that were logged following the freeze of 1972. By removing the second-growth eucalyptus at a cost range of \$10,000 to \$20,000 per acre, the University can begin restoration of understory vegetation similar to what was done at Signpost 29 along Claremont Ave on the south side of Claremont Canyon which was done at an average cost of \$5,000 per acre between 2000 and 2007. Otherwise the University must expect to fund ongoing long-term costs of \$200,000 per acre for retained and managed large blue gum eucalyptus tree groves.
31. The final Hill Campus FM Plan/EIR should also document and include a discussion about the continued risks of retaining large blue gum eucalyptus trees on both the Campus Park area and the Hill Campus. Policies should be developed to address the few remaining beloved, large, and dangerous blue gums that were planted in the early 1870's, and the remaining coppice eucalyptus stems and seedlings that remain after "freeze" logging in the early 1970's. We understand that a University retained arborist recommended removal of 20 large and dangerous trees in the 140 year old West Gate grove, and that a 140 year old eucalyptus tree near the Greek Theater toppled to smash a vehicle on January 6, 2019 killing a young man from Novato. While beautiful, these large trees now represent danger and liability for the University with removal costs likely to be \$10,000 to \$20,000 per tree. Issues concerning the remaining freeze damaged blue gums on the Hill Campus are discussed in #30 above and elsewhere in this NOP response, but an overall policy and program is needed to also cover all remaining eucalyptus trees to address environmental, fire, student/visitor safety, and liability issues.
32. The final Hill Campus FM Plan/EIR should document the fact that the UCB Campus and neighboring communities have been impacted by major fires in 1905, 1923, 1970, 1991, and by many smaller fires that occurred under "normal" conditions. However, the final Plan/EIR should include a case study that will clarify the facts surrounding the recent UC Grizzly Peak Fire of August 2, 2017. And then provide appropriate science-based policies to address recommendations for vegetation management, for appropriate ridgetop and hillside fire mitigation, and for fire suppression strategies for no wind fires as well as for more destructive Diablo wind fires.
33. The final Hill Campus FM Plan/EIR should include a case study of the August 2nd fire as a recent sample about what should have been a simple fire on a no wind day without the weather conditions that signal a red flag warning. It turned out to be an arson fire that burned uphill toward Grizzly Peak Boulevard where it should have been controlled by firefighters. The only area where fire control was possible along the road was on the south side of the fire where UC had earlier removed two groves or eucalyptus trees allowing control to be established by first responding units on Grizzly Peak Boulevard along the joint EBRPD/UC ridgetop fuelbreak system. However, control was not possible along the North side of the fire because fire blew through pine trees and dense

eucalyptus groves on UC land where removals were “on hold” because of the FEMA EIS 10-year train wreck, and then blew through EBMUD’s thinned eucalyptus grove on Grizzly Peak. Unfortunately UC and EBMUD had not established a joint ridgetop fuelbreak along this section of the high ridge. Of course, fire and embers blew through EBMUD’s thinned grove into the South end of Tilden Park where campers and visitors to the train concession were evacuated. Because of dense vegetation in Tilden Park, Cal Fire aircraft were required to drop retardant slurry until days end to control the many spot fires in the park. See the following Summary of The Grizzly Peak Fire of August 2, 2017 using quotes from selective news articles

34. The final Hill Campus FM Plan/EIR should document the fact that the University of California at Berkeley has an enormous responsibility as a leader in science-based education in many subjects including forestry, natural resource protection, and urban/wildland fire mitigation for its campus and for its adjoining and neighboring communities. The University is clearly not a self-contained vegetation island. Its immediate neighbors, EBRPD and EBMUD, contain extensive wildlands with very substantial fuel loads of highly flammable and invasive vegetation. The EIR will need to address the "cumulative impacts" of fire safety for the campus and the major land ownerships of wildlands in the East Bay Hills. Diablo Winds come from the North East and LBL has modeled the potential for a 60 ft high wall of wildfire coming from Tilden blowing into the Hill Campus. The EIR will need to address how the University’s fuel management plans interact with and have been coordinated among the major wildland ownerships in the East Bay Hills. The wildlands wildfire threats in the East Bay Hills are present at an areawide scale, and they must be addressed at this large scale. Especially after the major wind driven siege of fires during 2017, 2018, and 2019 followed by PG&E’s newly implemented PSPS program of power shutoffs.
35. The final Hill Campus FM Plan/EIR should also address the fact that the Campus was developed in 1873, and that it has been surrounded by dense urban development and dense wildland vegetation with increasing flammability that now represent significant liability and insurance risks from future wildfires for both the campus and its neighbors.

Summary of The Grizzly Peak Fire of August 2, 2017 using quotes from selective news articles

A fire broke out on Grizzly Peak, northeast of the UC Berkeley campus, early Wednesday afternoon, leading to the evacuation of nearby university buildings and a dramatic overnight scene as hundreds of firefighters worked tirelessly to keep the inferno from spreading.

The five-alarm burn encompassed 20 acres at its largest, although come Thursday morning KTVU reported that it was half contained, up from the 20 percent that the Alameda County Fire Department reported on Twitter the previous evening.

UC Berkeley ordered the Lawrence Hall of Science, the Mathematical Sciences Research Institute, and the Space Sciences Laboratory evacuated around 3 p.m. on Wednesday, says the LA Times. It was a voluntary evacuation, engaged as a precaution rather than because of immediate danger.

But the East Bay Hills dodged an incendiary bullet for another reason, Scott Stephens says: On the day the fire ignited, the weather was mild and a west wind was blowing, more or less pushing flames away from Berkeley Lab and the UC Berkeley campus. If the fire had started on a hot day with an east wind—the conditions that prevailed during the disastrous Oakland Hills fire of 1991—things might have concluded tragically.

I try not to promote draconian scenarios, but I am concerned about them,” Stephens says. “A fire driven by a strong east wind on a hot day would’ve acted very differently. It not only would’ve burned very quickly, but where particularly volatile fuels such as eucalyptus are concerned, it would have thrown embers miles ahead, starting hundreds of spot fires that would also burn explosively and merge. That’s what happened in 1991.

Normally, wildfires burn more rapidly uphill than downhill, observes Stephens, but in extreme conditions such as those that characterized the Oakland Hills Fire, “the fire overwhelms the topography. If last week’s fire had occurred under Oakland Hills fire conditions, there would’ve been impacts to university property. I’m particularly concerned about the Clark Kerr campus dormitories. They seem at significant risk.”

By HARRY HARRIS | hharris@bayareanewsgroup.com | Bay Area News Group

PUBLISHED: August 2, 2017 at 1:32 pm | UPDATED: August 15, 2017 at 12:33 pm

BERKELEY — Dozens of firefighters from several agencies battled a multi-alarm grass fire Wednesday afternoon that spread into Tilden Regional Park in the Berkeley hills and grew to 20 acres, authorities said.

One hundred children attending Gillespie Youth Camp in the park were safely removed and the popular Steam Train ride in the park was closed and visitors also removed, said East Bay Regional Park District Fire Chief John Swanson

The blaze burned on both sides of Grizzly Peak Boulevard and had consumed about 5 acres in early estimates. By 6 p.m., it had grown to 20 acres, Moraga-Orinda Fire Chief Stephen Healy said, with half of the fire in Oakland and the other half in Berkeley by the Lawrence Berkeley National Laboratory.

Authorities recommended evacuations of the Lawrence Hall of Science and two other nearby buildings, as well as portions of the Lawrence Berkeley National Laboratory. Power was going to be cut off to UC Berkeley when PG&E required transformers to be shut down, officials said in an advisory at about 2:45 p.m. As of 4:15 p.m. power was still on at the UC campus.

In the first hours of the blaze, aerial drops of water and retardant were dumped on the flames and hot spots, and bulldozers were being used in the effort. Firefighters on the ground were warned of the potential of falling trees that were damaged in the fire.

Though trees remained a danger Wednesday afternoon, fire leaders saw indications the blaze was slowing and partially under control. Initially, three air tankers and two helicopters were used to fight the fire, but only one air tanker and one helicopter remained by 4:30 p.m., Swanson said. Fire lines were built to contain the blaze.

About 150 to 200 firefighters from Oakland, Berkeley, East Bay Regional Park District, Cal Fire and Moraga-Orinda and Contra Costa County Fire and Alameda County Fire were on the scene. Cal Fire, Moraga-Orinda and Oakland will remain on the scene overnight.

DAN GRASSETTI REPLIED ON AUGUST 8, 2017 - 10:41AM [PERMALINK](#)

One has to wonder whether Professor Stephens actually visited the site of this fire before providing his expert assessment. What happened at this site was the majority of this fire occurred on UC land that HAD BEEN TREATED by UC several years back. Did this treatment prevent a fire? Absolutely not. Did this fire burn voraciously? Yes. At the northern end of the site was an area that had not been treated by UC. As a result of the intact tree canopy there were fewer ground fuels, but the ground fuels that were there did burn. But the eucs and pines at the site DID NOT BURN. On the other side of the street is an EBRPD site where there is a euc grove with aggressively managed understory. While the fire spread to the area just to the north of this site, where the understory had not been managed, there was ZERO SPREAD of the fire in the euc grove with managed understory. This is what's called a shaded fuel break. It worked. While Professor Stephens failed to mention these details, he did opine on how much worse this could have been had the winds been stronger. This is no doubt true, but the same basic dynamics apply. Where there are understory fuels there will be fire and where there are little or none it's highly unlikely there will be fire. As to concern about crown fires one can't speak of this risk in isolation. i.e.. while a crown fire in a euc grove would be difficult to manage, the far greater risk is a crown fire in vegetation with a high percentage of "fine fuels" (<3" in diameter) and with crown at or near ground level. A prime example of such a species is the bay tree. Other agencies in this area have recognized this threat and are limbing up bay trees to eliminate this hazard. While Professor Stephens might argue that what happened last week was anomalous, the reality is that it wasn't. We've toured every wild land fire in this area since '91 and the results have been nearly identical. All the ground fuels burn and few if any of the tall trees burn. Eucs seem particularly resistant to ignition due to their high moisture content and the fact that their crowns are very high above ground level. One might almost get the idea that they evolved to be resistant to fire. As to Tom Klatt's role in putting up signs, yes this is a good thing. But the bigger issue is that ever since UC cleared out all the tall trees that were blocking views and expanded the pullouts along Grizzly Peak there have been a series of fires started by revelers who have been using these facilities. We think it high time that UC accept responsibility for the increased risk and create vegetation free zones around these pullouts so that what happened last week is less likely to happen in the future. In short, as Mary McAllister wrote, the reality on the ground simply doesn't support Professor Stephen's conclusions.

BOB ROBERTS REPLIED ON AUGUST 8, 2017 - 5:08PM [PERMALINK](#)

This is ignoring the fact that a grass fire can be fought. Once a fire reaches the tree canopy and becomes a crown fire, all one can really do is watch it burn, especially in forests where canopies are fairly closed (oak woodlands generally have distance between trees that reduce the likelihood of this happening). As the leaves and branches high in the canopy burn and float through the wind, they create hot spots (especially near houses, when they fall on roofs or gutters). As Dr. Stephens as noted, eucalyptus are notorious for spreading embers in this fashion over vast distances. Minimizing the opportunity for a fire to crown is key. Logs on the ground are not ideal but they do not really facilitate crowning. Had that fire crowned, all the trees would

have died. It is likely many people would have as well due to the close proximity to large office spaces. Oaks are also a long-lived species adapted to this ecosystem. Nearly all the Monterey pines in this area are dead or dying before they reach 100 years old due to western gall rust. Eucalyptus are showing similar mortality issues (look at UCSF or the grove on the UC Campus) due to a butt rot disease that rots them from the inside. These trees will die, and research has shown they are not regenerating themselves, either. Should we be managing to make sure we have the best chance of having forest there in the future by promoting the naturally vegetated condition, which also provides the best balance of nice areas for recreation, wildlife habitat, and safety; or should we just leave it until the “big one” hits and the whole ecosystem is annihilated?

MARY MCALLISTER REPLIED ON AUGUST 9, 2017 - 6:31AM [PERMALINK](#)

The grim scenarios described by both Stephens and Roberts are entirely speculative AND they have nothing to do with reality. In fact, the fire did NOT spread into the tree canopy, nor did embers start spot fires. The 1991 fire was a wind driven fire that did ignite tree canopies, but they ignited ALL species of trees, including oaks and redwoods. Read Margaret Sullivan’s book, *Firestorm*, based on interviews with witnesses of that fire for confirmation of that FACT. The FEMA Technical report on the ’91 fire said embers that started spot fires were from “brush.” A US Forest Service study of embers cast by wildfires all over the world said that the only identifiable ember in the ’91 fire was a cedar shingle from one of the burned homes. Oaks do not live longer than eucalyptus. US Forest Service tree database says coast live oaks live about 200-250 years. Blue gum eucalyptus live in Australia from 300-500 years. They haven’t been here that long, so we don’t know how long they will live here, but certified arborists with no nativist bias say they are healthy here and they expect them to live another 100-200 years. Quotes from the Presidio forester confirm that FACT. In contrast, many of our coast live oaks are being killed by Sudden Oak Death. A study published in April 2015, predicted that all coast live oaks in California would eventually be killed by SOD. Inform yourselves of the FACTS before spinning scary tales.

Note: The unpublished background paper *DIABLO WINDS, WILDFIRES, AND FLAMMABLE VEGETATION IN THE EAST BAY HILLS*- by Jerry Kent, September 2017 is included here for the record, as an attachment providing relevant history and background with references that precede the development of the Hill Campus FM Plan/EIR.

Note: The before and after aerial photos mentioned in #13 about the 1972 freeze and the eucalyptus tree removal logging that occurred on UC’s Strawberry and Claremont Canyons, EBRPD’s Tilden Regional Park, EBMUD’s Siesta Valley, and by Oakland in several areas of the city are provided here for the record, and attached.