10/5/20

Response to UC Hill Campus Vegetation Management Plan by the Claremont Canyon Conservancy

The New Reality

The increased number and severity of wildfires in California over the past three years illustrates that we are in a new reality. Hotter summers combined with drought, longer, warmer falls and more prolonged Diablo winds, and now lightning, all brought about in large part by climate change, have altered our environment and increased the likelihood and danger of wildfires. (See notes A-D) Firefighters and government officials are telling us that once a wildfire gets started, our only recourse is evacuation. (See note E) The UC Hill Campus Vegetation Management Plan acknowledges this reality by making evacuation routes safer, removing highly flammable vegetation within 100 feet along Centennial Drive, Claremont Avenue and the Jordan Fire Trail. So far, so good.

However, the need for evacuation once a wildfire takes hold underscores the importance of preventing wildfires from starting and becoming unmanageable in the first place. Based on well-known principles of fire behavior in our new reality, much more effective and stringent vegetation management is required than what is noted in the University's Plan. The Plan is simply inadequate. More work will require more funding, indeed much more than the Cal Fire grant provides. Thus, the Plan should be a plan for what is needed to obtain a relatively fire safe situation, whether or not it is fully funded by the Cal Fire grant. The Plan needs to establish clear priorities to ensure the most pressing needs are addressed first, whether or not the full Plan is funded initially. The Plan should state what work would be done under the Cal Fire grant and what would await availability of additional resources. Other resources are essential and it is important for the University to identify them. If a fire spreads from the Hill Campus to the homes, businesses, and University facilities downwind, the damage and the liability to the University will be in the billions of dollars. The Plan must address in full the future vegetation management needs of the Hill Campus. It cannot simply be a shopping list for using the funds provided by the Cal Fire grant.

Wind Speed and Canopy Fire

Today California wildfire windspeeds have been measured in the range of 40 to 55 miles per hour. (See note F) Yet, referring to the Hill Campus, the report states on page 44, the rate of fire spread "is expected to be slow to moderate, or 1 to 20 chains/hr" or 1.4 to 28 mph. On page 49 the Plan refers to very strong winds at 40 mph. Based on available scientific evidence, the Plan underestimates the potential windspeeds and associated speeds of fire spread based on previous fires both here and elsewhere. One might hope that wind speeds will not exceed 28 or 40 mph, but, given the evidence of wildfire wind speeds already measured, the Plan must

address not only most probable scenarios, but also reasonably foreseeable worst-case scenarios, rather than limiting itself to a best-case situation.

The Plan states on page 46 that "While only 21.61 acres in the Plan Area are expected to experience canopy-to-canopy fire spread, more than 300 acres can be expected to torch, consuming the tree canopy and producing and distributing embers, . . . Canopy fire is rare and occurs in small patches sprinkled throughout the Hill Campus."

Wind speeds measured during recent wildfires must be taken seriously. Even looking back to evidence of the spread of burning embers in the Tunnel Fire 29 years ago, the danger is much greater than the Plan suggests. "Small patches" may not be the case in the new reality. We all recall that in 1991 burning embers blew across Highway 24 and destroyed homes on the south side of the freeway. Those winds were measured at 60 mph. (See note G) With current measurements of wildfire winds running even higher than that, both crown fires and firebrand and ember spread are likely to be much greater than what the Plan considers. The Plan notes the potential for damage to campus facilities from canopy fires but given the evidence of these greater velocities, it is especially important that the Plan consider and discuss what may occur if a fire spreads beyond the campus.

Lightning Must be Considered

In addition to wind, it is now clear that lightning is another cause of wildfires that the Plan must address. The *San Francisco Chronicle* reported on August 18, 2020, "Residents in multiple Bay Area counties fled their homes under mandatory evacuation orders Monday as inland temperatures soared above 100 degrees and firefighters battled a series of rapidly spreading wildfires sparked by lightning storms--with a threat of more on the way." (See note H) It has been known for centuries that lightning will hit the highest available points. Here that means lightning strikes the canopies, not the ground underneath the trees, creating another reason for canopies to be removed on a far wider scale than proposed in the Plan, beginning with canopies on ridgelines but also wherever canopies are the highest points in the immediate area. The August 2020 lightning storm that caused so many fires in Northern California was the result of a tropical storm in the Pacific Ocean west of Baja California moving northward and causing its warm, moist air to reach land and initiate powerful lightning and thunder storms. Meteorologists tell us that such events will be increasingly likely as climate change continues to warm the Pacific Ocean. (Attachment I) Future ignition events similar to those of August 2020 must now be considered reasonably foreseeable and must be addressed by the Plan.

In the interest of safety and prudence, the Plan should do more to prevent canopy fires from occurring. Removing eucalyptus and pine trees from areas near ridgelines is a top priority. However, in the new reality that includes higher wind speeds and lightning-induced ignitions, all highly flammable eucalyptus and pine trees should be removed throughout the Hill Campus. The Plan correctly lays out the methodology for removing these trees known to spread wildfire from their burning canopies but this methodology needs to be applied far more widely. As stated previously, the Plan should be based on what is necessary and not simply on what the

current source of funding allows. We join with Forestry Professor Emeritus Joe McBride, who has examined the Hill Campus wildfire prevention matter in detail and thinks all eucalyptus and pine trees should be removed. Yet the UC EIR dismisses the McBride alternative. Science should determine what is in the Plan. Budgeting should be a separate matter.

Thinning, Shaded Fuel Breaks and Canopies

The Plan goes into detail about how thinning and removing the understory can help prevent wildfires. We do not disagree. However, this method does not create true fuel breaks that will be effective in stopping a wildfire from spreading during periods of high winds. The term "shaded fuel break" is a misnomer and is misleading to anyone who takes the term at face value. In the new reality multiple sources of wildfire must be considered. Certainly, one source that is evident from prior fires in the East Bay Hills is fires which start on the ground from multiple sources, natural and human, and go up fuel ladders and light canopies. Removing the understory does prevent this kind of ground fires from climbing into canopies and spreading.

However, removing fuel ladders fails to address fires that start elsewhere. These include both lightning-initiated direct canopy fires and the spread of fires to canopies through wind driven embers and firebrands. Removal of tall, highly flammable canopies will not only reduce the risk of lightning strike-initiated fires, it also will reduce the likelihood of crown fire transmission through wind-born embers or firebrands. This is another reason to remove pine and eucalyptus from the entire hill campus.

As we know from recent experience, winds and especially the strong, hot, dry Diablo Winds that affect the Hill Campus, are a major fire risk. The 1991 Tunnel fire started locally on the ground but it was spread by the wind driven embers from eucalyptus tree canopies. The danger of canopy fires has increased as drought and disease have attacked the eucalyptus and pine forests in the Hill Campus, dried them out and made the fire danger there far greater than the Plan suggests. Those risks will only grow as climate change causes even hotter and drier summers and falls in the East Bay Hills. Eliminating both ladder fuel and canopies is necessary in this new reality.

On page 15, the Plan discusses the previous, successful removal of Eucalyptus sprouts and canopies in Claremont Canyon, but it understates the extent of the effort that was involved. Rather than just in 2005-06, the effort began in 2001 and continued through 2007 and required on-going maintenance thereafter.

Maintenance

Continued long-term maintenance of treated areas is essential if the initial work conducted is to have a lasting impact. On pages 81 and 84-85, the Plan suggests that maintenance will occur over a 10-year period. Based on the Conservancy's work in Claremont Canyon, 10 years is not sufficient. Today, 15 years following the removal of eucalyptus trees from Claremont Canyon and treating the stumps, Conservancy volunteers continue to find new eucalyptus sprouts. The

University has been responsive when we have pointed out the situation to staff and its contractor has removed them and retreated stumps. It should be noted that these new sprouts will grow rapidly, from six to 10 feet per year so prompt removal and treatment with Garlon is necessary and should be continued for at least 15 years, and not 10 years.

Studies have shown that sprouting of new eucalyptus plants after removal of adult trees comes from two places. One is from the stumps of removed trees that were not completely killed, Unless the root system is killed with herbicide treatment, new sprouts can continue to grow. In most cases, however, new sprouts come from completely new plants. These new plants in turn come either from seeds left behind by the removed trees or from seeds spread by winds from existing eucalyptus plantations elsewhere that were not part of earlier eradication efforts. In Claremont Canyon, the initial removal of eucalyptus stems was completed in 2007, 13 years ago. Therefore, there is reason to believe that new stems are coming from wind-blown seeds. These likely originated from existing eucalyptus groves on the hillside above the canyon. (See Note J) In either case site maintenance requires eliminating sources of new trees. Unless the Plan includes provisions for removing all eucalyptus groves and continued monitoring to eliminate newly-sprouted plants, additional monitoring beyond that anticipated in the Plan will be necessary into the foreseeable future. Once new eucalyptus sprout takes hold, young trees will grow six-to 12 feet or more per year if not removed. (See note K)

Page 22 of the Plan stipulates that trail maintenance shall not be performed in Claremont Canyon. There is no explanation of the justification underlying this statement. In particular, the Plan does not identify a relationship between trail maintenance and vegetation management for wildfire prevention. University personnel were involved in building trails and the Conservancy provided volunteers and tools for the building and the maintenance of trails in Claremont Canyon. Today these trails are used to access the Canyon to remove fire-prone and invasive species, and by hikers, runners, dog walkers, those simply looking for a place to go beyond their homes during the pandemic, and occasionally by UC Berkeley forestry students. Trails require occasional maintenance to prevent them from becoming a liability. If the prohibition of maintenance is only to exclude this from funding under the Cal Fire grant, then the Plan should so state. If the intention is to do no further maintenance period, then the University must be prepared to explain itself to the many users of the trails and to state that it accepts liability if an accident happens.

Additional Fire Station, Equipment and Cameras

Page seven of the Plan states that it considers only vegetation management and not other tools. However, the Conservancy is aware of three issues that UC should include in the Plan, whether they are funded by the Cal Fire grant or not. One is the need for and opportunity to have another fire station in the area and available to extinguish vegetation fires in the Hill Campus. UC should persuade Cal Fire to install a fire station on a plot of available land on Fish Ranch Road on the east side of the hills just above the intersection with Highway 24. Related to this is the need for additional fire fighting equipment. In his alternative plan, Professor McBride

notes the advisability of purchasing off-the-road fire trucks. We urge the University to work together with Cal Fire and purchase this equipment.

The third item is the installation of a camera trained on the Hill Campus that is able to spot plumes of smoke at the very beginnings of a fire and relay that information to the proper authorities. Such cameras exist today and have proven most helpful in the early suppression of fires, before they become unmanageable. Funds to install and more importantly monitor such a camera would prove to be a worthwhile investment.

Notes

The following notes and links are hereby incorporated in this Comment from the Claremont Canyon Conservancy.

A) Center for Climate and Energy Solutions. https://www.c2es.org/content/wildfires-and-climate-change/

B) Fourth National Climate Assessment, US Global Change Research Program, https://science2017.globalchange.gov/chapter/6/

C) Fourth National Climate Assessment, US Global Change Research Program, https://science2017.globalchange.gov/chapter/7/

D) Fourth National Climate Assessment, US Global Change Research Program, https://science2017.globalchange.gov/chapter/8/

E) Give your household the best chance **of** surviving a wildfire by being ready to go and **evacuating** early. Cal Fire, https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/

F) https://www.sacbee.com/news/california/fires/article246001395.html. https://www.athenium.com/news/wind-data-california-woolsey-camp-wildfires/

G) Page 3-75 of the 2014 City of Berkeley Local Hazard Mitigation Plan. https://www.cityofberkeley.info/uploadedFiles/Fire/Level_3_-_General/2014%20LHMP.pdf

H) "How a surge of lightning strikes ignited more than 500 California wildfires", Matt Brannon, Redding Record Searchlight, August 21 updated August 23, 2020. https://www.redding.com/story/news/local/2020/08/21/what-caused-california-wildfires-2020-lightning-strikes-cal-fire-map-ca/3413807001/

I) https://www.ebparks.org/climatesmart.htm

J)
https://static1.squarespace.com/static/56e612b159827e4b847675c9/t/5f790d423eaedf59be724140/1601768772542/Going+nowhere+fast%2C+Trevor+H.+Booth.pdf

K) http://www.angelfire.com/bc/eucalyptus/eucgrowth.html