Supplemental Materials

Item 7.3 – Communications Received

Documents

#01 Berkeley FireSafe Council Paper on Catastrophic Fire Prevention in Berkeley
#02 Victor Ryerson FW_ Extreme fire hazard.pdf

From: Winnacker, David
Cc: Sasser, Gloriann; Holbrook, Marcia; Isaacs, Jeff; Rein, Dennis; "Jonathan Holtzman"
Subject: FW: Berkeley FireSafe Council Paper on Catastropic Fire Prevention in Berkeley
Date: Friday, July 14, 2023 12:47:23 PM
Attachments: Five Fundamentals 2023 06b.pdf

Directors,
Please see below for correspondence received.

Respectfully,

Dave Winnacker
Fire Chief
Moraga-Orinda Fire District

From: Henry DeNero <htdenero@gmail.com>
Sent: Thursday, July 13, 2023 1:29 PM
To: Winnacker, David <dwinnacker@mofd.org>
Cc: Henry DeNero <htdenero@gmail.com>
Subject: Berkeley FireSafe Council Paper on Catastropic Fire Prevention in Berkeley

Dear Chief Winnacker,

Significant steps have been taken in recent years by the City of Berkeley, the University of California Berkeley, the Lawrence Berkeley National Laboratory, and the East Bay Regional Park District. But much work remains if we are to significantly reduce the risk of a catastrophic fire destroying much of our city and the university.

We wrote the attached paper on behalf of the Berkeley FireSafe Council. The paper acknowledges recent steps by public land owners; then describes the major actions that are still needed. These actions fall into five categories which we call “The Five Fundamentals of Wild Fire Prevention.” Within each category, we describe current programs, pending grant applications, and remaining actions that will be needed. We urge you to read the paper, as we believe it provides a comprehensive road map for the years ahead. We hope the document will become the basis for discussions about how we can accelerate achieving a fire safe Berkeley. Below is a PDF copy and a link to the paper on our website.

As you are aware, the Regional Park District has recently submitted a grant application to significantly widen the fuel break between Berkeley and Tilden Park. UC Berkeley has recently obtained an appellate court ruling allowing it to proceed with its plan to remove hazardous fuel from the Hill Campus. Berkeley Lab is preparing an Environmental Impact Report to revegetate its entire campus with non-hazardous trees. The Berkeley Fire Department is launching defensible space and home hardening programs. And the Berkeley FireSafe Council has removed over 75 tons of

hazardous fuel from the city with community donations and UC Berkeley student volunteers. Yet, the issue remains how these major projects can be completed faster. And we must ultimately face the issue of reforestation (the fifth fundamental). To make Berkeley truly fire safe, the city, university, and the regional park district will need to reclaim their forest areas by replacing hazardous, invasive species with non-hazardous trees as Berkeley Lab is in the process of doing. This needs to be done with urgency; before it is too late.

The Berkeley FireSafe Council can make a major contribution to this challenge if we receive the funding we have requested from the City of Berkeley and from the California Fire Safe Council. Our request for 20% of this year's UC Berkeley Settlement Fund allocation, together with the $500,000 CA Fire Safe Council grant, would allow us to rapidly complete the first of the five fundamentals – that of cleaning up the understory of the eucalyptus groves inside the city and moving this major risk into the maintenance mode. We sincerely hope that we receive these funds.

We hope you find this paper informative and helpful. We look forward to discussing its major elements with you in the coming months.

Best regards,

Henry DeNero, President, Berkeley FireSafe Council

Nancy Gillette, Chair, Urban Forestry Committee, Berkeley FireSafe Council

https://drive.google.com/file/d/1Fhxekf8P1VG4AbW6dfsFptNzKwOih8tZ/view

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https://www.berkeleyfiresafecouncil.org/

Preventing the Next Catastrophic Fire in Berkeley

The Five Fundamentals

Henry DeNero and Nancy Gillette

We all know that there is an extreme risk of wildfire in the East Bay Hills. This paper focuses on Berkeley. Other cities in the East Bay have similar facts and circumstances.

Berkeley's public landowners have taken significant steps in recent years to reduce wildfire risk. These actions have included the creation of fuel breaks along Grizzly Peak Boulevard, up Centennial Boulevard, in Claremont Canyon, and along the fire road in UC Berkeley's Hill Campus. In addition to serving as fuel breaks, these measures support evacuation and firefighter access. Other steps have been taken, and we can thank city, university, park district and municipal utility leaders for these efforts.

But more is needed, much more. Despite recent measures, there is still an extreme danger of a catastrophic fire in Berkeley. This is because most of the fuel that will transform a "normal" fire into a real catastrophe remains on the ground and in the tree canopies. This danger can be dramatically reduced by a targeted approach focused on the most significant risks.

There is an urgent need to mitigate this risk, before it is too late. And it can be done.

<u>The Catastrophic Fire We Must Prevent</u>

There are many fire risks in and around Berkeley. Firefighters and others have long recommended measures to reduce the chance of fires starting, to reduce the risk of a fire spreading to adjacent buildings, and to prepare us for evacuation if needed. These measures include vegetation management around the home, fuel breaks at the Wildland-Urban Interface (the WUI), home hardening, evacuation planning, undergrounding of power lines, installing residential automatic gas valve shut-offs and other steps. They all make sense.

A fire that begins in a home or yard will almost always be suppressed by the fire fighters who protect us. Buildings can burn. And a fire can spread to adjacent buildings. There is always the danger of loss of life. These risks exist everywhere.

A catastrophic fire is very different. It almost always involves a fire in the forest or in a large grassland outside of a town or city (the WUI). And it almost always involves high winds. As these wildland fires develop speed, they can ignite homes and structures by wind-driven flames, embers, and firebrands. When the speed of a wildfire outpaces the ability of government to

amass enough resources, catastrophic outcomes are more possible. If enough homes and structures ignite, firefighting resources get overwhelmed. Then the structures become the fuel to carry the fire forward. The fire becomes unstoppable and continues to burn until the wind stops or the fire runs out of fuel. This has happened repeatedly, in the 1923 Berkeley Hills Fire, the 1991 Oakland Tunnel fire, the Camp Fire in Paradise, the Marshall Fire in Colorado, the Black Saturday Fires in Australia, and several fires in Southern California. In each catastrophic fire, hundreds and sometimes thousands of homes burn, property damage is in the billions, people are permanently displaced, particularly lower income groups, the environment is severely damaged, and lives are lost. The 1923 fire took 600 homes and burned to the downtown, the 1991 Tunnel Fire took over 3,000 homes and 25 lives. Nearly 800 homes burned in the fire's first hour of the fire! And that fire could have been much worse if the weather had not shifted. The environmental and social costs of major urban wildfires are more difficult to estimate. But they are also catastrophic.

Conditions in and around Berkeley create a particularly acute catastrophic fire risk. The city is adjacent to Tilden Park, which is "upwind" of Diablo winds and which contains thousands of eucalyptus, Monterey pine, and large areas of yet-uncleared brush. The Blue Gum eucalyptus is considered by foresters, firefighters, and scientists to be one of the most hazardous tree species from a fire risk perspective. Equally dangerous is that part of the "forest" is INSIDE the city, with many unmanaged eucalyptus groves containing several thousand more trees in the neighborhoods and on the campuses of UC Berkeley and Berkeley Lab. Much of the Berkeley hills area is essentially an urban forest. And much of that "forest" is hazardous. It is therefore possible for a catastrophic fire to begin inside the city.

Five Fundamental Actions to Prevent a Catastrophic Wildfire

Because of our particularly severe wildfire risk, we need to use all measures possible to give our firefighters a chance to suppress a fast-moving wildfire before it ignites enough Berkeley homes to become a catastrophic fire that could burn much of the city and the university. The most important measures can be categorized into five sets of actions aimed at reducing the most hazardous fuels, slowing structure to structure spread, and protecting homes, buildings, and lives. We call these actions the "Five Fundamentals'' of catastrophic fire prevention:

1- Clean up the understory of hazardous groves inside the city.

2- Create a wide fuel break the entire length of the WUI.

3- Manage vegetation on all our properties.

4- Harden our homes.

5- Reclaim the forest by replacing hazardous species with fire-resistant trees.

Some experts will debate which of these measures are most important. There is a debate about how deep the fuel break at the WUI needs to be, or the need to replace the hazardous trees. Because of the extreme risk posed by thousands of hazardous trees at the WUI and inside the city, combined with high winds with low humidity, some level of action on all five fundamentals is needed to minimize the risk of a catastrophic fire. No sub-set of these measures will be enough, particularly when it comes to a catastrophic fire. All five of these steps need to be implemented with urgency, before it is too late. And most of these actions really can be taken, surprisingly quickly and inexpensively. Here is how.

Clean Up the Understory Inside Berkeley

There are just over 1,100 eucalyptus trees in northeast Berkeley, not counting those on the UC Berkeley and Berkeley Lab campuses. How do we know this? We counted them. Fewer than 100 of these trees are on City of Berkeley property, primarily in the parks. The remaining 1,000+ are on 117 private properties, the vast majority of which are in 11 groves spanning multiple properties. As one moves south within Berkeley, we know that there are another 1,500 eucalyptus trees on the Berkeley Lab campus by their estimate and several hundred on UC Berkeley property (not counting the Hill Campus to the east, which contains a wildland located within the City of Oakland). There are also several hundred trees in Oakland near the Clark Kerr Campus that threaten the southern parts of Berkeley.

Over the past three years, the Berkeley FireSafe Council, a non-profit organization, has cleaned up the understory of four of the 11 eucalyptus groves on private property in northeast Berkeley with the help of student volunteers. The Council has removed an estimated 75 tons of hazardous fuel from the neighborhoods, amounting to as much as one third of the hazardous fuel in the groves. The total cost of this effort has been less than $50,000, all raised by homeowner donations. If this can be done by ordinary citizens, think what could be done by public entities and professionals. Berkeley Lab and UC Berkeley have also cleaned up the understory of several groves on the north side of their campuses.

The Berkeley Fire Department has just launched a new vegetation management program that will use Measure FF funds for fuel reduction on private property for the first time. This program will reduce hazardous fuels throughout the WUI but will focus initially on targeted pockets of homes on the perimeter of the City where a fast-moving fire from the wildland area will first contact homes. To augment and accelerate the Fire Department's efforts, the Berkeley FireSafe Council has recently asked for just under $300,000 from the City to clean up the remaining groves on private property using tree and landscape contractors. The FireSafe Council has also applied for a $400,000 California FireSafe Council, funded by CAL FIRE, that would focus on protecting low-income, elderly, and disabled residents. If funded, the Berkeley FireSafe Council will hire landscape contractors to remove the remaining heavy deposits of hazardous fuel in the groves and do residential defensible space work in many residences. UC Berkeley is also continuing to clean up the understory of hazardous tree groves on its property.

Regardless of the source of funds or who does the work, the hazardous understory of the eucalyptus groves and other hazardous fuel loads inside Berkeley need to be cleaned up as soon as possible and then strictly maintained.

Create a Wide Fuel Break along the WUI

The hazardous fuel inside Berkeley is a large risk. But an even larger risk is in Tilden Park and in the UC Berkeley Hill Campus, with dozens of unmanaged Eucalyptus groves and thousands of trees immediately east of the city and campus. The Berkeley FireSafe Council has asked the East Bay Regional Parks District to clean up the groves immediately east of Berkeley and it has begun to do this with a recently expanded fuels management program. The Parks District, EBMUD, UC Berkeley and The City of Berkeley are seeking additional funds from CAL FIRE to broaden and accelerate the expansion of the fuel break between the city and Tilden Park. Called The Grizzly Peak Strategic Fuel Break Collaborative, this grant application is an important and laudable development.

The Berkeley FireSafe Council estimates that all of the hazardous understory in Tilden Park and the Hill Campus east of the Berkeley could be cleaned up within a mile of the WUI for a cost of $5 to $10 million. Finding the money does not appear to be the limiting factor. The Park District's fire chief, Aileen Theile, has expanded her fuels management staff by 240% in the last one to two years and is removing ground fuels as fast as resources allow and within the requirements that govern the Park District's fuel management approach. We do not believe there is a current plan to clear the understory inside the Hill Campus.

Again, regardless of the funding and property ownership, the forest areas east of Berkeley must be cleaned up as quickly as possible and then maintained.

Manage Vegetation on Our Properties

As mentioned earlier, Berkeley's new Fire Chief, David Sprague, has just launched a new vegetation management program, which will begin using Measure FF funds to help some homeowners remove fuel from their properties. This vegetation management program will not be easy to implement. Following anticipated State of California standards, we may need to remove virtually all flammable material (plants, wood chips, etc.) within five feet of our homes. This area is called "Zone Zero." Science and experience have shown that, in an ember storm, these flammable materials can quickly ignite the home. Some of our favorite shrubs will have to go. In some cases, rows of Juniper, Pine, or Bamboo planted up against houses will need to be removed entirely. Many of us won't like this, but it must be done. Insurers like State Farm are already abandoning California's homeowner insurance market. Eventually, insurance companies may rate {wild}fire risk by neighborhood or property-by-property. We may all need to comply with the new standards to lower our insurance premiums or to maintain insurance coverage at all.

And if you have eucalyptus on your property, keep the trees stripped of loose bark at least 10 feet above ground, remove sprouts, saplings, and low branches, and remove fallen bark and leaves from the ground (a "Healthy Forest Operation"). The Berkeley FireSafe Council is working to clean up the groves spanning multiple properties after years of neglect. When this is completed, homeowners must maintain their properties annually or the hazard will return within three to five years, as more debris falls and new vegetation grows. If you are one of the 17 residences with only a few isolated eucalyptus trees, clean them up now.

Vegetation standards will also include requirements from five to 30 feet from the home, and out to 100 feet from the home (or your neighbor's home). The 100-foot standard will encompass virtually every square yard of Berkeley. So, get ready. You *will* be inspected. Please understand that your Berkeley Fire Department inspector is coming to keep you safe – we are all on the same team.

Harden Our Houses and Buildings

In parallel with the vegetation management program, the Fire Department is also launching a home hardening program, also using Measure FF to help some property owners to harden their homes and buildings against ignition in an ember storm. Gutters and vents will need to be screened with 1/8th or 1/16th inch screening. Eaves will need to be of a certain design. Roofing material will need to be "Class A" (fire resistant). And you may need to replace old single-pane windows with heat-resistant double pane glass.

The Fire Department will do a two-part inspection, one for vegetation and one for home hardening. Implementing the vegetation portion is mandatory under state law. The home hardening actions will initially be voluntary but may become mandatory to maintain home insurance soon. Even if you are not required to do so, we urge you to take the time to harden your home. No amount of fuel reduction in the WUI will prevent embers from landing against or traveling inside your house in a wind-driven fire. Home hardening is your last, best defense.

Reclaim the Forest

The last of the five fundamentals will be to replace the hazardous trees themselves with fire-resistant species using proven urban forestry practices. We call this "reclaiming the forest" because it will not only greatly diminish the catastrophic fire risk, but it will also return our wooded areas to a healthy, natural state.

The blue gum eucalyptus tree is not only one of the most hazardous trees from a fire risk perspective, it is also invasive. With time, eucalyptus trees often take over a forest. Their canopy sits high above other trees, limiting their light and starving them of nutrients. They produce toxic allelochemicals that prevent the growth of other, natural vegetation. Smaller trees and shrubs are squeezed out. The forest floor becomes covered with highly flammable bark, killing other plants, preventing grass from growing, and destroying habitat for many animal species. A

dense, unmaintained eucalyptus grove is largely a dead forest, except for the eucalyptus. Finally, because eucalyptus groves are extremely tall and reach very high stand "basal areas," the volume of flammable material they present is far greater than that of historical WUI vegetation patterns. Their burn time and energy of combustion are therefore unprecedented for the East Bay Hills area. There are other hazardous tree species in Berkeley, but the eucalyptus is the most hazardous and outnumbers the others by a wide margin.

The Berkeley FireSafe Council has seen first-hand what happens when a eucalyptus understory is cleaned up. Sunlight can reach into the groves, and grass comes back almost immediately. Tilden Park has a poster showing the before-and-after benefits of a Healthy Forest Operation. The eucalyptus trees are stripped of loose bark, low limbs and saplings are removed, ground fuels are cleaned up, and some small or damaged trees are removed. With sunlight entering and ground fuels removed, the natural, healthy forest quickly comes back, even without removing the eucalyptus trees.

A more dramatic example of reclaiming the forest is a demonstration project called Skyline Gardens right here in the Berkeley/Oakland hills. The project is managed by the East Bay Municipal Utilities District (EBMUD) along a watershed area between the Tilden Park Steam Trains and Four Corners. Most of the eucalyptus trees were removed and regrowth prevented by repeatedly stripping sprouts from the stumps, without the use of chemicals. With most of the eucalyptus removed, the landscape has been totally transformed. Wildflowers are blooming, small- and medium-sized shrubs have re-established, and rare wildlife and butterflies have returned. The Sierra Club and the Claremont Canyon Conservancy have also produced a video that shows the dramatic transformation that occurs when eucalyptus is removed from a forest. This isn't just about fire safety. It is about restoring the landscape and the environment to a healthy state.

Reclaiming the forest will be a big job. But it is not insurmountable. Berkeley Lab is planning to complete the transformation of its campus with a CAL FIRE grant of only $2.9 million. In 2019 UC Berkeley developed a plan to remove hazardous trees and ground fuels from the Hill Campus with a $3.4 million CAL FIRE grant and has just won a California Appeals Court ruling allowing it to proceed with this project. On private land, Zaytuna College will replace the remaining eucalyptus trees on its Marin Avenue campus for $250,000, re-landscaping with fruit trees and terraced gardens. We estimate that the 1,000+ eucalyptus trees on private (residential) properties inside Berkeley could be replaced with safer trees for about $5 million. Most homeowners would like this to be done but don't have the funds to do it themselves. Since the entire city faces a catastrophic risk from these trees, underwriting this effort would be an appropriate use of public funds, if approved.

Reclaiming the forest in Tilden Park will be a larger task. There is not a total consensus as to its necessity, but most firefighting professionals agree that reclaiming the forest would greatly reduce the risk of a catastrophic fire, simply because it would greatly reduce the volume of highly flammable vegetative fuels. If done in stages, this too could be accomplished within 10

to 20 years. And within about 20 years it would cost less to restore fire-resistant vegetation than to conduct repeated maintenance of the existing hazardous species in the forest. As is the case with all large projects, this will never be done unless we start now.

Henry DeNero is President of the Berkeley FireSafe Council. He is a former senior partner of the management consulting firm McKinsey & Company, and has served in executive roles or on the boards of directors of 10 publicly-owned companies and five not-for-profit organizations. He has chaired the audit committees of several of these organizations and is an expert in Enterprise Risk Management, the practice of identifying and mitigating an organization's most significant risks.

Nancy Gillette is a member of Berkeley FireSafe Council's leadership group and chairs its Urban Forestry Committee. She holds a Ph.D. in Forest Entomology from UC Berkeley and is retired from a 40-year career in US Forest Service Research. She also served as liaison between USFS Forest Health Protection and the US EPA's Biopesticide Division.

Holbrook, Marcia

Subject: FW: Extreme fire hazard

From: Victor Ryerson [redacted]
Date: July 17, 2023 at 12:18:27 PM PDT
To: "Isaacs, Jeff" <jisaacs@mofd.org>
Subject: Fwd: Extreme fire hazard

Corrected address on email

Sent from my iPhone

Begin forwarded message:

From: Victor Ryerson [redacted]
Date: July 17, 2023 at 10:14:10 AM PDT
To: jisascs@mofd.org
Subject: Extreme fire hazard

Mr. Isaacs:

I took these photos yesterday evening while I was walking my dog through the Orinda Intermediate School parking lot. Please note the expended firework on the ground. I also saw a cigarette butt a short distance away.

When is MOFD going to get serious about enforcing requirements to clean up flammable brush and dead leaves and branches on the OUSD side of the creek? Some of this material is several years old, and nothing has been done in response to complaints by us neighbors since a herd of goats was brought in to start the clearance. They just added to the problem by killing scrub oak bushes by eating the bark.

As you can see, a eucalyptus tree fell during a winter storm this year. The trunk was cut and removed, but all the slash and leaf litter was left. It has now dried out, adding to the tinder box.

This situation has become critical. There are workers operating heavy equipment nearby, and parents parking in the the lot on weekday evenings to wait for their children engaged in soccer programs. This is a disaster waiting to happen.

Do something—please!

Victor Ryerson
[redacted]

Sent from my iPhone