35

Office of the City Manager

CONSENT CALENDAR
May 7, 2024

To: Honorable Mayor and Members of the City Council

From: Disaster and Fire Safety Commission

Submitted by: Weldon Bradstreet, Chairperson

Subject: Use of Measure FF to Support Understory Mitigation

RECOMMENDATION

That the Berkeley City Council pass a resolution to support the Fire Department in using Measure FF funds to conduct one-time eucalyptus understory clean-ups on select, participating private properties within the City.

FISCAL IMPACTS OF RECOMMENDATION

This program would use existing budgeted funds and requires no additional financial authority from the Council. Measure FF provides approximately $8.5 million annually to support fire services, emergency response, 9-1-1 communication, hazard mitigation, and wildfire prevention. The Department allocated $1,000,000 in the FY24 and FY25 budget for the purpose of supporting vegetation management activities.

CURRENT SITUATION AND ITS EFFECTS

Climate change is increasing the frequency and intensity of critical fire weather conditions and proactive fuel reduction is the safest, cheapest, and easiest way to reduce the likelihood of extreme fire behavior. This one-time program would provide funding to residents to help offset the costs associated with bringing properties into compliance with best practice hazardous vegetation management practices. Following participation in this program residents will be required to maintain properties in adherence with the Fire Code.

Large portions of the Berkeley Hills contain high levels of hazardous fuels on private property and responsibility for fuel reduction and its associated costs falls solely to property owners. Eucalyptus trees, such as Eucalyptus globulus, possess fire-adapted qualities that contribute to fire risk but are also extremely expensive to remove due to their size and

age. Planted in plantations over 100 years ago, eucalyptus groves can produce between 10 to 30 tons of dry matter per acre per year and can threaten entire neighborhoods because of their fire-adapted qualities, especially their production of highly flammable deciduous bark that can create catastrophic ember storms. Left unmaintained, eucalyptus bark can rapidly accumulate as hazardous ground and ladder

fuels that can result in rapid ground fire spread or support the propagation of a crown fire, in which a wildfire spreads through a forest canopy and is the most extreme form of fire behavior that could threaten the entire city.

The understory clean up would consist of fuels management as determined by the inspecting fire department personnel, beyond 100 feet of structures , to include maintaining the trunks of trees so that they are free of hanging bark and debris to a height of at least eight (8) feet; limbing trees and shrubs by removing branches that are within eight feet (8 ft.) of the ground, or four times the height of the understory vegetation, whichever is greater; removing subordinate trees, removing eucalyptus saplings and sprouts with diameters of less than 8 inches, and removing all flammable ground fuel.

At the December 6, 2023 meeting, the commission took the following action:

> Motion to approve as amended: Bradstreet
> Second: Murphy
>
> Vote:
> 6 Ayes: M. Wilson, R. Kinosian, S. Dean, G. Murphy, W. Bradstreet. H. Raine, T. Gordon
> 0 Noes;
> 2 Absent: T. Darling, A. Katz.
> 0 Abstain.

BACKGROUND

Throughout the history of the East Bay Hills, humans have influenced the local ecology, beginning with thousands of years of regular burning by Native Americans, such as the Ohlone, Bay Miwok, Chochenyo peoples[1]. Later, European settlers continued these practices for maintenance of grasslands for cattle grazing. Eucalyptus plantations were first established toward the end of the 19th century in the East Bay Hills. Following the end of widespread grazing, the unmanaged growth of eucalyptus and the establishment of the East Bay Regional Park system, the landscape began to transition towards shrubland and, eventually, an urban forest. By 1923, fuel loads were high enough to sustain the East Bay's first catastrophic wildfire, the 1923 Berkeley Fire that entered the city and destroyed 640 structures. Following the Berkeley Fire, the East Bay experienced regular cycles of catastrophic fire every 18-24 years[2].The last catastrophic wildfire, the Tunnel Fire, occurred 32 years ago.

---

[1] Keeley, J. E. (2005). Fire history of the San Francisco East Bay region and implications for landscape patterns. *International Journal of Wildland Fire,* 14(3), 285.
[2] Sprague, D. “Disaster & Fire Safety Commission: FY23 Review / FY24 Goals” Presentation, Berkeley, October 2023

One major event contributing to the alteration of the East Bay Hills occurred in 1972 with a prolonged freeze, that damaged numerous eucalyptus trees and giving rise to concerns about increased wildfire hazards[3]. In response, Governor Ronald Reagan declared a State of Emergency, making federal funds available for fire hazard reduction work.

The East Bay Regional Park District subsequently received a federal grant of $1.3 million to create a 25-mile-long fuel break between Anthony Chabot Regional Park and Tilden Regional Park. The project aimed to mitigate the heightened wildfire risk by clearing 400 acres of freeze-damaged trees in the first year. Multiple agencies, including the State of California, EBMUD, the University of California, PG&E, and the cities of Oakland and Berkeley, collaborated in this emergency effort. Between 1972 and 1979, these agencies collectively spent $6.7 million on freeze-related eucalyptus removal.

The effort involved the removal of dead and damaged trees, along with flammable debris, using contractors. Usable tree material was transported for paper production, but the stumps were not removed or treated with herbicide, so the stumps sprouted new stems (a natural type of reproduction known as coppice). The new coppice forest grew in dense canopies that escalated the fire hazard. Over 40 years later, the problem of coppiced eucalyptus trees remains, posing an increased threat of high wildfire severity.

The aftermath of the freeze revealed challenges in managing the coppiced eucalyptus. The lack of consistent and comprehensive efforts to address the issue has allowed these trees to persist, exacerbating the wildfire risk in the East Bay Hills. CalFire has designated the region as a very high hazard severity zone, underscoring the urgent need for effective vegetation management.

Today, much of the East Bay Hills remains covered in flammable vegetation, often on private property[4]. The Berkeley FireSafe Council, consisting of resident volunteers, regularly takes the initiative to clear out and maintain the constantly shedding debris of the eucalyptus groves.

They sponsor community workdays and engage students in educational experiences to clear out the groves. However, dense eucalyptus groves can produce between 10-30 tons of bark per acre per year, posing a significant threat as flaming eucalyptus bark can cast embers up to 40 miles ahead of a fire front as was seen in the 2009 Australian Black Saturday bushfires[5] and the 2017 Portugal Firestorm. Mitigating the magnitude of this risk exceeds the capacity of local grassroots efforts.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

[3] Kent, J. (2020, March 2). *Aerial views of eucalyptus trees in UC's Hill campus before and after the 1972 freeze*. Claremont Canyon Conservancy

[4] McBride, J. R., & Kent, J. (2019). The failure of planning to address the urban interface and Intermix Fire- hazard problems in the San Francisco Bay Area. *International Journal of Wildland Fire*, 28(1), 1.

[5] Cruz, M.G., Sullivan, A.L., Gould, J.S., Sims, N.C., Bannister, A.J., Hollis, J.J., and Hurley, R.J. 2012. Anatomy of a catastrophic wildfire: the Black Saturday Kilmore East fire in Victoria, Australia. Forest Ecology and Management, 284: 269-285.

Climate change is increasing the frequency of critical fire weather conditions resulting in elevated fire risk for the City of Berkeley. Acting on these recommendations will reduce the likelihood, intensity and severity of a wildfire in the City, potentially avoiding devastating and far- reaching human and environmental impacts in our City. Burnt landscapes can lead to polluted water sources, erosion or landslides, and health impacts from toxic airborne ash. Within forest ecosystems, high severity wildfire often leads to deforestation, the loss of forest carbon sinks, and conversion of biomass into carbon emissions. Reduction of fire risk may require the use of machinery that contributes to local carbon emissions but is overall significantly lower than the level of emissions to be released during a high severity wildfire. The removal of vegetation through management maintains carbon sequestration within biomass and seeks to ensure the longevity of forest carbon sinks.

RATIONALE FOR RECOMMENDATION

Climate change is increasing the likelihood of catastrophic wildfire in the City of Berkeley. Fuel reduction is a key strategy to lower wildfire risk, however most hazardous fuels within the City exist on private property. Many private property owners may be unable to mitigate fuels due to disability or cost-prohibitive labor. Eucalyptus understory constitutes a hazardous fuel and a difficult one to remove. Private property owners may benefit from one-time financial assistance to remove eucalyptus debris from their properties.

ALTERNATIVE ACTIONS CONSIDERED

The City of Berkeley is currently exploring Residential Assistance Programs that financially support homeowner wildfire mitigation; however, this program will provide limited support and participation is only eligible to residents who meet specific criteria such as household income, disability, and age.

Alternatives to this recommendation would be for Council to adopt an ordinance requiring property owners to clear hazardous fuel buildup on their entire property at their own expense, and enforcing that requirement, or to continue to leave this wildfire fuel untreated.

CITY MANAGER

The City Manager concurs with this report.

CONTACT PERSON

Keith May, Secretary, Disaster and Fire Safety Commission, 510-981-3473

Attachments:
1: Resolution

RESOLUTION NO. ##,###-N.S.

Resolution to Mitigate Hazardous Eucalyptus Understory on Participating Properties

WHEREAS, climate change is increasing the frequency of critical fire weather conditions and elevating fire risk within California, and

WHEREAS, hazardous fuel mitigation is the safest and most effective method to reducing wildfire risk; and

WHEREAS, private property owners bear responsibility for mitigating wildfire risk on their property whether or not they have the physical or financial capacity to do so; and

WHEREAS, eucalyptus, such as Eucalyptus globulus exist in groves throughout private property in high fire risk areas in the City of Berkeley and may create between 10 to 30 tons per acre of hazardous debris each year; and

WHEREAS, Measure FF, passed with 74.6% voter approval, seeks to support wildfire prevention and hazard mitigation, and may be utilized to support residents' reduction of risk from eucalyptus groves.

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that pass an ordinance resolution to support the Berkeley Fire Department to apply Measure FF funds to conduct one- time eucalyptus understory clean-ups on select, participating properties.