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From:	Travis Longcore <longcore@ucla.edu>
Sent:	Monday, April 14, 2025 8:19 PM
To:	All Council
Subject:	Comment for April 15, 2025 Meeting - Items 1 and 2
Attachments:	BerkeleyZone0.pdf; ATT00001.txt; ATT00002.htm

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Please see attached letter commenting on Items 1 and 2 on the April 15, 2025 agenda.

April 14, 2025

VIA EMAIL (council@berkeleyca.gov)

Berkeley City Council
2180 Milvia Street
Berkeley, CA 94707

Re: (1) Adoption of CALFIRE Map and Additional Areas Designated as the City of Berkeley Fire Hazard Severity Zones and (2) Modification and Adoption of Berkeley Fire Code Local Amendments

Dear Mayor Ishii and Councilmembers:

The April 15, 2025 meeting agenda for the City Council includes consideration of two intersecting items regarding fire preparedness in the City of Berkeley. Each proposal involves a discretionary action, first to expand the areas designated by the State of California as High Fire Hazard Severity Zone and Very High Fire Hazard Severity Zone, and second to implement a stringent Fire Code for the area 0–5 feet around structures in advance of State rulemaking establishing "Zone 0" defensible space standards. While it is within the purview of local government to enact more stringent regulations than the State, as discretionary actions with significant environmental consequences they would appear to require review of any environmental impacts, mitigation, and consideration of effective alternatives to reduce those impacts, and consideration of whether the actions are most appropriate to achieve the project goals.

We write to provide an expert opinion whether implementation of the two items would result in adverse impacts on the environment. Although a much longer assessment could be written, we offer the following comments on the linked proposals.

There is no doubt that the two proposals would, both separately and combined, result in the removal of a large extent of tree and shrub cover in the affected zones within the City of Berkeley. For the first item, by extending the State-designated hazard zones to additional areas, the expanded Very High Fire Hazard Severity Zone would by law be subject to State Defensible Space regulations, including the Zone 0 rules currently being formulated by the State Board of Forestry and Fire Protection (the State's Defensible Space regulations are automatically applicable to Very High Fire Hazard Severity Zones in Local Responsibility Areas). Implementation of these regulations would result in removal of a significant extent of tree and shrub cover in these areas. For the second item, by amending the Berkeley Fire Code to eliminate all vegetation within 5 feet of structures to be applied in certain areas, the action would independently result in removal of tree and shrub cover within those zones. When adopted together, the expanded hazard zones and the associated defensible space requirements, even with a flawed "exception" for existing trees, would substantially reduce urban forest cover within these zones and eliminate the existing benefits of temperature moderation, erosion prevention, stormwater interception, and provision of habitat for biodiversity.

We investigated the potential loss of green cover, including trees and shrubs, within the applicable zones by reviewing the building outlines with high-resolution aerial photography using mapping tools at our disposal. Notwithstanding the "exception" for trees that are more than 10 feet taller than the "adjacent" structure, one can assume that as a practical matter all vegetation will be excluded within 5 feet from structures, and potentially 10 feet as is currently being considered in the Zone 0 rulemaking at the State (which would supersede City code in the Very High Fire Hazard Severity Zone). The tree exception is ineffectual because it is combined with a requirement to keep branches 10 feet above the roofline that will reduce tree canopy volume and health and does not allow for the replacement of trees over time. Defining "adjacent" structures on a small lot is not trivial (e.g., does the tree have to be taller than all "adjacent" structures and how does it account for neighboring parcels?). The exception would require the removal of most trees in steep terrain where native species such as oaks often do not grow taller than an upslope home. We visually confirmed that extensive presence of tree cover within 5 feet and overhanging structures is widespread, and that this cover includes easily recognizable native species such as Coast Live Oak, which provide significant benefits to birds and other wildlife, and have been reported to protect structures through interception of embers during fires (see explanatory video from the Resource Conservation District of the Santa Monica Mountains, https://youtu.be/tKc66QlTkr8).

Loss of this expanse of urban forest would have significant adverse impacts on biological resources, greenhouse gas emissions, air quality, and hydrology/water quality.

Biological Resources. Urban forests provide habitat infrastructure for wildlife (Fernández-Juricic 2000), benefiting native and migratory species, especially birds, whether or not an area would naturally be forest (Strohbach et al. 2013, Wood and Esaian 2020, Wood et al. 2024). Widespread loss of tree and shrub cover under the proposed actions, including of species of trees normally protected by ordinance in Berkeley, will constitute adverse impacts on biological resources.

Greenhouse Gas Emissions. Loss of tree and shrub cover will increase local temperatures (Akbari et al. 1990), and thereby increase energy consumption and associated greenhouse gas emissions for air conditioning (Huang et al. 1987, Akbari et al. 1993, Carver et al. 2004).

Air Quality. Trees intercept and remove various pollutants from the air, including carbon monoxide, nitrous oxides, sulfur oxides, and ozone (Nowak et al. 2000). They also intercept and reduce cancer-causing particulate matter (Nowak et al. 2014). Cumulative loss of leaf surface area over a large geographic zone would increase ambient air pollutant levels.

Hydrology and Water Quality. Trees and shrubs reduce stormwater runoff and improve water quality by intercepting and slowing precipitation that would otherwise fall on impermeable surfaces and by promoting infiltration of water into the soil within root zones (Bolund and Hunhammar 1999). Substantial reduction in the current high vegetative cover will increase stormwater runoff (including the rate of peak flows) and degrade the quality of water flowing from the proposed vegetation clearance zones.

A more in-depth assessment of each of these issues should be made, and alternatives to the proposed project with fewer impacts should be investigated during environmental review. These observations are, however, more than adequate to make a fair argument that the proposed project represented by either or both of the items under consideration would have significant adverse impacts on the environment.

Sincerely,

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**This statement is by the author as an individual; the statement is the author's and does not represent a position taken by the University of California, UCLA, or the Institute of the Environment and Sustainability. The UCLA name is used to establish the author's experience and qualifications pursuant to UCLA Policy 110.*

References Cited

Akbari, H. S., S. E. Bretz, J. W. Hanford, D. M. Kurn, B. L. Fishman, H. G. Taha, and W. Bos. 1993. Monitoring peak power and cooling energy savings of shade trees and white surfaces in the Sacramento Municipal Utility District (SMUD) service area: data analysis, simulations, and results. LBNL-34411, Lawrence Livermore Laboratory, Berkeley, CA.

Akbari, H. S., A. H. Rosenfeld, and H. Taha. 1990. Summer heat islands, urban trees, and white surfaces. ASHRAE Transactions **96**:1381–1388.

Bolund, P., and S. Hunhammar. 1999. Ecosystem services in urban areas. Ecological Economics **29**:293–301.

Carver, A. D., D. R. Unger, and C. L. Parks. 2004. Modeling energy savings from urban shade trees: an assessment of the CITYgreen® energy conservation module. Environmental Management **34**:650–655.

Fernández-Juricic, E. 2000. Avifaunal use of wooded streets in an urban landscape. Conservation Biology **14**:513–521.

Huang, Y. J., H. Akbari, H. Taha, and A. H. Rosenfeld. 1987. The potential of vegetation in reducing summer cooling loads in residential buildings. Journal of Climate and Applied Meteorology **26**:1103–1116.

Nowak, D. J., K. L. Civerolo, S. T. Rao, S. Sistla, C. J. Luley, and D. E. Crane. 2000. A modeling study of the impact of urban trees on ozone. Atmospheric Environment **34**:1601–1613.

Nowak, D. J., S. Hirabayashi, A. Bodine, and E. Greenfield. 2014. Tree and forest effects on air quality and human health in the United States. Environmental Pollution **193**:119–129.

Strohbach, M. W., S. B. Lerman, and P. S. Warren. 2013. Are small greening areas enhancing bird diversity? Insights from community-driven greening projects in Boston. Landscape and Urban Planning **114**:69–79.

Wood, E. M., and S. Esaian. 2020. The importance of street trees to urban avifauna. Ecological Applications **30**:e02149.

Wood, E. M., S. Esaian, C. Benitez, P. J. Ethington, T. Longcore, and L. Y. Pomara. 2024. Historical racial redlining and contemporary patterns of income inequality negatively affect birds, their habitat, and people in Los Angeles, California. Ornithological Applications **126**:duad044.