

From: [Scott Wachenheim](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: COMMENT: EIS
Date: Thursday, June 13, 2013 9:57:47 PM

To Fema:

As important as reducing fire risk is, I think reducing the effects of carbon pollution is even more important. Cutting thousands of oxygen-producing--carbon absorbing trees will add to our already spectacular climate changes.

Fire risk reduction is done in a variety of ways. City planning rules disallowing wooden buildings up against vines with dead undergrowths, to be built on narrow winding streets would, in retrospect, have been a brilliant foresight making some of this unnecessary.

Now, at this point, we need to require cleared areas, defensible space, so fuel isn't present. Regulations outlawing vegetation like junipers, dead pines, untended eucalyptus, ceanosis, all so ubiquitous in our landscape, are "no brainers." Eucs can be tended by sidewalk community groups paid to gather those ribbon bark strips and prune low branches. jobs!

Limiting wildlife ranges (and therefore causing them not to thrive) should not be our domain (which clearcutting and risking water pollution would do.)

Use of toxic herbicides (the Monsanto and Dow Chemical Corporations kind) have added hugely to our diseases as well as changing our soil health. We need healthy soil to keep our natural vegetation which lessens landslides. Let's give humans jobs instead of corps who produce toxins and monetize every cause.

We need our trees even more in our lives when chemical-producing corps rule.

Sincerely, Beth Wachenheim

Comments on Hazardous Fire Risk Reduction, East Bay Hills, CA, Draft EIS

Prepared by Christopher Adams
2701 Virginia St, Berkeley, CA 94709
cristoforoami2@gmail.com

Introduction:

My comments here are made solely in my capacity as a private citizen, but I think it is germane to state my background. I am a retired university planner, and for several years I directed the office which was responsible for review of every environmental document prepared by all the campuses and other facilities of the University of California. In addition, I was directly involved with the drafting, the public hearings, and the response to comments and preparation of two major Environmental Impact Reports, prepared under the California Environmental Quality Act for a UC campus. I also live near the EB Hills in an area subject to wild fires and share the concerns of others about the risk of fire.

Summary:

The Hazardous Fire Risk Reduction, East Bay Hills, CA, Draft EIS is a deficient document, beginning with its basic premise. While purportedly for the purposes of fire management, the proposed actions appear to be mostly motivated by a dream of a restoring the EB Hills to some imagined Eden prior to the European and American colonization of California. Instead of applying scientific and policy analysis to the impacts of the proposed actions the DEIS authors appear to have decided that the proposed clear cutting and herbicide measures are the right ones for fire protection and then cherry-picked evidence, whether in the description of existing conditions or the possible alternatives solutions, which supports this conclusion. The DEIS rejects out of hand fire management alternatives that do not involve clear cutting and massive application of herbicides. In so doing the DEIS is a classic example of post hoc rationalization. Unless the DEIS is re-issued with corrections and additions responding to the comments below, I believe that FEMA is seriously exposed to potential litigation. More significantly, if FEMA does not consider other less draconian and less expensive fire management measures, it will not be serving the interests of the citizens most impacted by fire danger, not to mention the taxpayers who will ultimately foot the bill.

Specific Comments:

The DEIS fails to note the existence of native trees which are specifically susceptible to the effects of one of the herbicides proposed for use.

Section 4.2.2.2.1 notes that the native trees in the woodlands include madrone (*arbutus menziesii*). However, in Section 3.4.2.1.1 Strawberry Canyon-PDM there is no mention of madrones in the list of trees in the “native forest” (first paragraph of section). This is a significant omission, because there are madrones in Strawberry

Canyon, yet in the third paragraph of this same section one of the two herbicides proposed for use to stifle stump regeneration is Stalker (imazapyr) which has been identified elsewhere as being used specifically to eliminate madrones. According to the EPA Reregistration Eligibility Decision for Imazapyr: “Imazapyr use at the labeled rates on non-crop areas when applied as a spray or as a granular to forestry areas present risks to non-target plants located adjacent to treated areas.”¹

The DEIS fails to acknowledge the growing threat of French broom in the UCB area.

While the presence of eucalyptus, Monterey pine, and acacia is repeatedly discussed, there is almost no mention of the rapid invasion of French broom. It is mentioned only in passing and without its scientific name in the discussion in Section 4.2.2.2.3 under “Northern Coastal Scrub.” While French broom has been rapidly increasing in the upper slopes of the Strawberry Canyon PDM and Claremont PDM areas, there is no mention of it at these locations in the DEIS. This plant is an active pyrophyte which chokes out native vegetation, can be poisonous to livestock, and is of limited benefit to native animals. The increase in sunlight from the proposed removal of large amounts of eucalyptus will encourage its spread. There is no mention of the fire risk from French broom in the discussion of fire risk in Northern Coastal Scrub, Section 4.3.3.2.5, and I could find no mention of its removal anywhere in the document.

The UCB project description does not explain if a fuel break is planned in the UCB areas and if so to describe it.

Section 1.1.1 UCB states that it will follow the “same general approach...which is included in Oakland’s grant application (see Section 1.1.2 below).” In Section 1.1.2 it is stated there the Oakland PDM would “create a fuel break on the west side of Grizzly Peak Boulevard north and east of the Caldecott Tunnel [presumably this means the west *entrance* to the tunnel].” UCB Strawberry Canyon properties also abut Grizzly Peak Boulevard, so the statement of “the same general approach” implies that UCB also proposes a “fuel break,” but none is described. Since the term “fuel break” implies clearing to the bare soil, with potential significant environmental impacts, this is a serious omission.

The DEIS fails to consider the impact on global climate change by the wholesale destruction of trees.

The DEIR states that for UCB Strawberry Canyon alone 12,000 trees will be destroyed. Because trees absorb CO² at an average rate of 13 pounds per year, this represents a potential loss in CO² absorption of 78 tons per year. Given the growth patterns of native trees in Berkeley, which tend to be riparian or to grow on north facing slopes in a widely scattered pattern, the number of replacement trees will not come close to compensating for those destroyed. The difference should be estimated and calculated.

The DEIS fails to consider an actual and accomplished fuel management program when dismissing the alternative described in Section 3.3.1.1.

The Lawrence Berkeley National Laboratory (LBNL) is located on 175 acres on the north side of Strawberry Canyon immediately adjacent to the UCB and EBRPD areas described in the DEIS. LBNL, which is managed by the University of California, employs more than 4,000 persons on this site in laboratory buildings and with equipment that is worth several billion dollars. LBNL has recently completed a fire management program which is essentially what is described in Section 3.3.1.1 of the DEIS, Removal of Brush, Surface Fuels, Lower Limbs and Small Trees. The entire project was completed within the LBNL maintenance budget without special grants and has given the laboratory a great deal of fire security, according to its professional fire personnel. Yet there is no reference to this in the DEIS. The LBNL program is further described in the following links. This first links to a powerpoint slides; the second to a video discussion of the slides. <http://www.lbnl-cag.org/docManager/1000000159/Berkeley%20Lab%20Fire%20Safe%20Vegetation%20Lab%20Fire%20Marshal.pdf>
<http://www.lbnl-cag.org/Content/10024/preview.html>

The links convey much more effectively than my comments how an alternative to massive clear cutting and massive application of herbicides will effectively accomplish the goal of managing fire in the East Bay Hills.

The DEIS is incomplete and verging on the dishonest about the use of herbicides.

“Management of resprouts without herbicides is expensive....and thus was removed from further study.” This ignores the management of resprouts used successfully by LBNL as described in the above referenced powerpoint and video. There is no study about the use of herbicides at the scale proposed, e.g. 12,000 trees in Strawberry Canyon alone, on human populations, let alone native plants and animals.

The DEIS fails completely to discuss the realities of encouraging native plants after the clear cutting and heavy and repeated application of herbicides.

1) Restoration ecology is a barely in its infancy, yet this DEIS expects us to accept on faith alone that when the clear cutting is done and the slopes sprayed with herbicides the native vegetation will miraculously reappear.

2) At the present time live oaks and bays are common on the north side (south facing side) of Strawberry Canyon under eucalyptus. This is probably because the fog drip from the eucalyptus and the shade encourage their growth in what would otherwise be a very dry area. Compare, for example, similar slopes on slopes of similar aspect in portions of the EB Hills behind El Cerrito or Fremont. There is nothing in the DEIS to explain how native trees will increase or survive after the clear cutting has destroyed their source of water and shade.

3) Because of the abundance of deer in Strawberry Canyon and adjacent areas, small trees need to be protected against browsing. (See the LBNL powerpoint for an illustration of wire protective cages. <http://www.lbnl-cag.org/docManager/1000000159/Berkeley%20Lab%20Fire%20Safe%20Vegetation%20Lab%20Fire%20Marshal.pdf>)

on%2C%20Lab%20Fire%20Marshal.pdf) The DEIS says nothing about preventing deer browsing.

4) California native oaks of several species, including *Quercus agrifolia* are subject to the fungal disease Sudden Oak Death Syndrome (SODS), which has been found in the East Bay Hills. The DEIS fails to discuss the existence of SODS or its impact on replacement vegetation after the clear cutting and application of herbicides.

5) The DEIS states that “alleopathic oils” in the leaves and bark of eucalyptus which suppress the growth of other vegetation. Yet the DEIS fails to state how covering slopes two feet deep with eucalyptus slash will not inhibit growth of new “native” plants.

6) Native California bunch grasses have largely been supplanted by European annual grasses, many of which form mats which choke out other plants. Similarly native shrubs such as coyote bush (*Baccharis* species) are being supplanted by invasive plants such as broom. The DEIS fails to explain how native plants will succeed in competition for sun and water with these plants.

The DEIS fails to consider the aesthetic impact to views from the trails and roads within the canyon and from houses near it after the clear cutting.

Section 4.12.2 of the DEIS states that a goal of the UCB LRDP (2005) is to “Maintain the visual primacy of the natural landscape in the hill campus” but there is no mention of the impact of clear cutting on this natural landscape. The north side of the lower portion of Strawberry Canyon forms the main campus of Lawrence Berkeley National Laboratory (LBNL). While individual buildings at LBNL are attractive in design, the overall effect of the site is essentially industrial, similar to an office park one might see along a freeway. The views of LBNL from the fire road that winds through the canyon are now largely screened by the large trees which will be destroyed by clear cutting. The trees also offer cooling shade to those using the area for recreation. The fire road is a major recreation amenity for UCB students, employees, and neighbors, used daily by hundreds of hikers, joggers, dog walkers, and mountain bikers. Removal of most of the trees as proposed will completely change the views enjoyed from the fire road. The DEIR provides absolutely no analysis of this impact either verbally or by providing illustrations of any viewing point in Strawberry Canyon. Most of the discussion of Section 5.8 is oriented to views over the hills from high points to the bay, which indeed may be improved by clear cutting. There is no discussion of views from *within* the areas to be clear cut and no reference to Strawberry Canyon.

The DEIS bases its list of plant species slated for destruction on incomplete and inaccurate botanical and fire danger information.

The authors of the DEIS seem not to understand the difference between “native” and “endemic.” and they seem to have arbitrarily selected some “native” plants to extirpate while keeping others based on criteria having little or no relationship to fire hazards. Section 3.4.2.1.1 states that “Non native trees, including all eucalyptus, Monterey pine, and acacia would be cut down.” The Jepson Manual ², which is the definitive source for California plants divides the state into geographic areas. According to Jepson Monterey pines (*Pinus radiata*) are native to California, and

while not endemic to the EB Hills, they are native in the geographic area CCo, which includes both portions of Monterey County and the EB Hills with similar climatic conditions. Coast redwoods (*Sequoia sempervirens*) are also found in Strawberry Canyon but not as an endemic. They are also native to the geographic area (CCo). In contrast to Monterey pines, however, Coast Redwoods appear to escape destruction by clear cutting; at least there is not mention of such action in the DEIS. Another native and Strawberry Canyon endemic, California Bay (*Umbellularia californica*), is specifically listed in the DEIS to be retained. But in a publication of the University of California Cooperative Extension³ it is listed as a “High Fire Hazard Native Tree.” Note that these comments are not meant to imply favoring destruction of redwoods or bay trees but to further illustrate the inaccurate information and the arbitrary nature of the DEIS conclusions. Similarly cypress species which grow in parts of Strawberry Canyon are also listed as pyrophites in the this UC document, but the DEIS does not propose their extirpation.

The DEIS fails to consider the impact on Strawberry Creek of run-off from the predicted massive amounts of slash, from the standpoint of hydrology and flood control or the impact on the biota of the creek.

Section 3.4.2.1 of the DEIS states within Strawberry Canyon there will be clear cutting on 56 acres and that the downed trees will be chipped and left on 20% of the site at a depth of 2 feet. Based on these numbers the cumulative amount of material on the ground will be 975,744 cubic feet (.2 x 56 x 43,560 x 2). If merely 1% of this material is washed away in a storm, which seems a very conservative estimate considering the slopes where the material would be placed, there could be more than 1,000 cubic yards of slash material washed into Strawberry Creek. The DEIS does not discuss the impact on the biota of the creek of this potential massive amount of new material. Nor does the DEIS discuss the impact of this material on stream flow in storm conditions. Given that the culverts in the lower levels of the creek, near the Haas Clubhouse and the University Botanic Garden, are only about 9.5 square feet in cross section (See Figure 1.), there is a strong likelihood that the slash material would block the culverts and cause flooding. Section 3.4.2.1 states that “if the site yields a large number of large tree trunks,” some “may” be removed or used for other purposes than left on the site; however, the DEIS fails to state the criteria for determining what the “large number” is that would trigger such action. The hydrologic and ecological impacts are presumably left to the loggers to evaluate.

Figure 1, Culvert on lower fire trail, near Botanic Garden



The DEIS implies that trees other than eucalyptus, Monterey pines, and acacias will not be cut, but current actions in Strawberry Canyon suggest that UCB will cut anything at any time regardless of environmental regulations. The DEIS must be amended and re-issued to include other UCB actions as part of cumulative impacts.

During the past week (June 6-13, 2013) I have personally observed the cutting of at least six healthy, mature California live oaks, bays, and cypresses in Strawberry Canyon. (See Figures 2 and 3.) The oaks were particularly magnificent, and their destruction is tragic. I am familiar with the needs for passage of fire trucks as I own woodland property on a narrow privately maintained road. None of the trees just cut would have prevented passage of trucks, but I was told by one of the tree cutters that the excuse was “Fireman.” To my knowledge this cutting was done without any compliance with the California Environmental Quality Act (CEQA), which is the state equivalent of NEPA and applies to all UCB actions. This cutting constitutes a violation of the CEQA Guidelines Section 15304, which states that exemptions from CEQA apply only to actions “which do not involve the removal of healthy, mature, scenic trees.” If UCB is flagrantly cutting trees now, while the DEIS is out for public comment, what can we expect once the NEPA process is completed?

Figure 2. Bay stump on lower fire trail, cut on or about June 11 2013, diameter +/-42”



Figure 3. Live oak stump in on lower fire trail, cut on June 10, 2013, diameter +/- 38"



¹ EPA 738-R-06-007, 2006

² *The Jepson Manual of Vascular Plants of California*, 2nd Edition, UC Press, 2012

³ *Pyrophytic vs. Fire Resistant Plants*, FireSafe Marin in Cooperation with University of California Cooperative Extension, October 1998

Monica Jane Albe
Education and Outreach Coordinator
Museum of Vertebrate Zoology
3101 Valley Life Sciences Building
University of California
Berkeley, CA 94720

FEMA
East Bay Hills Hazardous Fire Risk Reduction Plan
P.O. Box 72379
Oakland, CA 94612-8579

16 May 2013

Dear FEMA,

I have just learned of plans for cutting trees in the Strawberry Canyon Area of the East Bay Hills for fire control purposes. I understand the need to control growth of introduced (and fire hazardous) trees and plants such as eucalyptus and Monterey pines, but cutting down native plants and trees should not be part of the plan.

The north facing sides of the canyon are filled with largely native plants, known locally as soft chaparral, and it is excellent wildlife habitat, filled with birds, small mammals and salamanders. This area is critical for the museum as we use it every semester for undergraduate training in biological field techniques such as identification of local species and collecting field observations and data. We train 100-120 students each semester in our undergraduate program, and with the loss of easily accessible natural habitat, we will struggle to maintain the quality of our award winning education program. This area also has a natural creek and is closely linked to the UC Botanical Gardens, which I would think would be greatly affected by any ground pesticides applied in the area.

Please reconsider your plans and think of using less invasive/devastating control methods in the East Bay Hills. The Oakland Mountain View Cemetery recently used grazing goats to reduce a lot of their understory to better control the risks of fire, and this appears to have worked very well without having such a devastating effect on the trees. It also appears to be much more economical and easier to maintain – the goats are rented and can be brought back in every few years, if need be. This avoids using chemical applications that may destroy all living things in a patch of land. (Note: in areas of California where Oak Woodland has been cut down, there is very little regrowth, so please consider leaving the oaks be).

Scientists at the UC Museum of Vertebrate Zoology would be happy to lend their expertise for plan improvements, to assist in creating a plan that is economical, effective, and without having lasting effects on local native flora and fauna declines.

Sincerely,

Monica J. Albe



email: mjalbe@berkeley.edu

phone: 510-643-4699

UNIVERSITY OF CALIFORNIA
MUSEUM OF VERTEBRATE ZOOLOGY
3101 VALLEY LIFE SCIENCES BUILDING
BERKELEY, CALIFORNIA 94720-3160

8805-1R-13 SF CA 941

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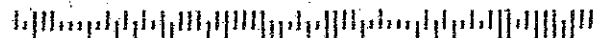
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From: [Vivas, Alejandro \(CDPH-FDLB\)](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Strawberry and Claremont Canyon areas,
Date: Friday, May 17, 2013 1:30:57 PM

Dear EIS/FEMA,

In researching and considering the upcoming plan to remove non- native trees from the Strawberry and Claremont areas it became apparent that while efforts to reduce impact of non-native species is a worthwhile and notable consideration in our ecosystem, the reasoning behind removal of such species is myopic and faulted. The amount of dead woodchips left behind will serve as a further fire risk and will create a drier environment even more susceptible to fire. The potential benefits (which do not seem probable given current environmental factors) do not outweigh the destruction of this area that provides a richer atmosphere, wildlife and natural beauty this area is known for. Please take these facts into consideration before doing long lasting damage to a community so deeply cared about.

Thank you,

Alejandro Vivas
Department of Public Health
Division of Food, Drug and Radiation Safety, FDLB
510.412.1606

From: [Nicolle Aleman](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: East Bay Hills hazardous fire risk reduction project
Date: Tuesday, May 28, 2013 6:55:29 AM

To Whom it May Concern:

I am writing to respectfully ask FEMA to withdraw its proposal for the EIS hazardous fire risk reduction project.

While I agree that the risk of wildfire does need to be addressed in the East Bay, this proposal is not the answer. It will have a devastating effect on the ecological balance of the wildlife in the East Bay and puts the public at unneeded risk of toxic exposure with the spraying of the highly carcinogenic chemical Roundup. My family enjoys walking and riding our bikes through the hills of the East Bay on a regular basis. This proposal, if it is put into action, will ruin that for us.

"You can call eucalyptus "alien," but it is now part of the ecology of this area. It is home to many rodent predators, who keep the rodent population in check. Cut it down, and there will be rodent infestations in Berkeley and Oakland.

Sudden Oak Death is incurable. Cut down most of the non-oak tree population, and you run the risk of losing everything.

We have the example of Russian River, where they clearcut a forest and the houses got destroyed by landslides rather than fire. We have to resist companies, agencies, and people who love technological destruction (chemicals and chain saws) without attention to side-effects.

The FEMA funds are to be spent on a one shot project, but the problem is an on-going one. It can't be dealt with in a one-shot fashion. It will take yearly maintenance.

How can we do this for people-benefit and not corporate-benefit? Leave the trees standing, and hire the unemployed in this area to do three things.

1- prune lower branches of trees to remove the fire-ladder by which fire would reach the upper branches.

2- clear away dry underbrush and grass, both under trees and in dry areas, and clear away fallen leaves, all of which provide fuel for fires. But leave the shade of trees to keep forest areas moist.

3- Help home-owners cut back vegetation close to their houses, to keep their houses safer in case of a fire.

By hiring the unemployed, we keep the funds used for this project in the area, to benefit our economy and not someone else's.

By refusing FEMA's destructive proposal, we maintain an ecological system that benefits us. We simply have to intervene to mitigate a certain danger (fire).

By using the money offered by the government, we can set up an agency that will

give the problem the yearly attention it requires, rather than a one-shot destructive fix that will provide false security, along with a host of detrimental and unhealthy effects.

FEMA says it is their plan or nothing. Doing nothing is NOT the alternative. A rational people-oriented plan is. What FEMA is proposing is simply plain ordinary destruction, at many levels." Source: <http://www.berkeleydailyplanet.com/issue/2013-05-24/article/41091?headline=FEMA-Proposal-is-Not-the-Answer--By-Steve-Martinot>

Thank you for your time and consideration.

Sincerely, Nicolle Aleman

June 8, 2013

2715 Alcatraz Avenue
Berkeley, California 94705

FEMA, Region IX
P.O. Box 72379
Oakland, CA 94612-8579
[\[EBH-EIS-FEMA-RIX@fema.dhs.gov\]](mailto:EBH-EIS-FEMA-RIX@fema.dhs.gov)



Re: Comments on Draft Environmental Impact Statement: Hazardous Fire Risk Reduction, East Bay Hills, California

To Whom It May Concern:

I am writing to comment on the Draft Environmental Impact Statement (EIS) for the Hazardous Fire Risk Reduction project, East Bay Hills. **The Draft EIS fails to analyze a reasonable range of alternatives, including deliberate sequencing, thinning, and replacement planting with fire-resistant native trees including redwoods; and misses several potentially significant environmental effects and their mitigations, as discussed below.**

For the past 24 years, I have lived about a mile from the bottom of Claremont Canyon, one of the proposed project sites most affected by the proposed project. I hike throughout the east bay hills. I run regularly on the track above the Clark Kerr campus of UCB, adjacent to a eucalyptus grove extending uphill towards Claremont Canyon. The residential evacuation line for the East Bay Hills Tunnel Fire of 1991 was just east of Claremont Ave., about 100 yards from where I live.

The EIS addresses four applications submitted to the Department of Homeland Security's Federal Emergency Management Agency (FEMA) by the East Bay Regional Parks District, the University of California at Berkeley (UCB), and the City of Oakland.¹ The applications are for grant funds to remove perhaps 70,000 eucalyptus and Monterey pine trees from 105 project areas, mostly in the East Bay hills, including in Claremont Canyon.

FEMA's involvement in the hazardous fire risk reduction projects invokes the National Environmental Policy Act (NEPA, 42 U.S.C. §§ 4321-4327), which requires an evaluation by federal agencies of the potential environmental impacts of proposed actions

¹ Cal EMA is the official applicant, and UCB, Oakland, and EBRPD are subapplicants.

Comments on Draft EIS: Hazardous Fire Risk Reduction, East Bay Hills

and a consideration of the impacts during the decision-making process.² NEPA requires federal agencies to rigorously explore and objectively evaluate all reasonable alternatives and to discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR § 1502.14). Federal agencies must consider reasonable project alternatives.

Overview

The idea of the proposed fire-reduction project is, in general, to chop down perhaps 70,000 trees and then “let nature take its course,” anticipating that, in the ensuing decades, live oaks and bay laurels in the region may spread over a portion of the resulting barren land, stumps, and weeds. (But even these trees could be cut down as part of the project, where “overly dense.”) UCB alone proposes to eliminate approximately 22,000 eucalyptus, Monterey pine, and other non-native trees. (EIS § 7.2.1.) Oak and bay trees and other native vegetation present under the larger non-native trees would be preserved and “encouraged to expand.” The project proponents will apply herbicides extensively and repeatedly, up to two ounces per eucalyptus tree, repeated twice a year as needed.

Many areas would be left as grasslands—with non-native grasses that dry out and create a fire hazard. Yet, as the EIS acknowledges, many wildfires have begun in grass. The 1991 Oakland Tunnel Fire began in an area that was mostly grass. (FEMA 1991.) Removal of the trees will promote more growth of non-native grasses and weeds, creating the need for continued mowing or grazing, as the EIS states, and perhaps application of herbicides.

The existing trees don't cause fires. They provide habitat for animals, shade in parklands, and a visual resource. They also sequester carbon. In Marin County, fires have more than once burned clear through Point Reyes, and Mt. Tamalpais is ready to explode—in neither case primarily because of eucalyptus or Monterey pine trees.

On the other hand, the trees in question in the East Bay hills can be more flammable than some other types, justifying the evaluation of potential actions. Thus, consideration of a project to reduce fire hazards is appropriate. But while at least several project alternatives readily suggest themselves, the EIS artificially evaluates and compares only the proposed project and doing nothing. This does not comply with the “all reasonable alternatives” requirements of NEPA, especially when the effects of the proposed project will be so significant.

² See also the Council on Environmental Quality's (CEQ's) NEPA implementing regulations in Title 40 Code of Federal Regulations (CFR) Parts 1500 through 1508, and FEMA's NEPA procedures in 44 CFR Part 10.

Comments on Draft EIS: Hazardous Fire Risk Reduction, East Bay Hills

Project alternatives

Fire danger in the Oakland hills is not new, and the types of trees in question have been there for the past 100 years. As the EIS admits, even the drastic proposed approach to reduction in fire hazards will not eliminate the danger; fire danger can't be eliminated without eliminating all combustible material. There is a need for balance, and the issue is reasonable reduction. Tree removal does not have to be all or nothing, and more flammable trees can be replaced with fire-resistant trees. Here are some alternatives that should be discussed in the EIS with a comparison of their respective significant effects on the environment and proposed mitigation measures:

1. Remove the trees but actively plant fire-resistant natives, especially redwoods and live oaks, in a predetermined ratio (2:1, 3:1, etc.). This would reduce the fire hazard while replacing lost values such as habitat, shade, and visual qualities. At least some of the proposed project areas used to host redwood forests (see below). This alternative would thus undo some of the past human damage to the environment, instead of inflicting more.
2. Remove the trees area by area, sequentially over a long time, allowing recovery before moving on. This would allow bird nesting, and flora and fauna in general, to adjust. The time lag would also allow for evaluation and "adaptive management."
3. Remove trees from some areas, but not from others. The EIS notes a few areas in which not all trees would be removed, but lacks an analysis as to which areas could or should be treated in this way. The existing variation in the EIS seems to depend most on the proclivities of the particular project proponent, rather than on factors related to fire hazards or the environment.
4. Thin the trees, but don't clearcut any areas. This approach is proposed for the Claremont Canyon Regional Preserve (see EIS at § 3.4.2.2.6); contrast that with UCB's approach in the adjacent Strawberry Canyon. This shows that clearcutting is not necessary. Again, the existing variation in the EIS seems to depend most on the proclivities of the particular project proponent.
5. Remove the trees by uniformly thinning over time, slowly; progressively replant with native trees.
6. Remove some trees, but combine this with other fire-risk-reduction techniques such as removal of understory, duff, and low branches.
7. Implement the proposed project, but without herbicides.
8. Various combinations of the above.

Comments on Draft EIS: Hazardous Fire Risk Reduction, East Bay Hills

Significant environmental effects not considered or not adequately considered in the EIS

- 1. Oak and other native trees may not be able to colonize, or may not be able to sustain themselves, leaving permanently scarred and barren areas subject to erosion, landslides, and grass fires. The EIS fails to consider this.**

The EIS needs to consider factors that could limit or prevent colonization by native trees. These include sudden oak death (caused by the plant pathogen *Phytophthora ramorum*), other pathogens, insects, and climate change. Sudden oak death has already been found south of the UCB campus³ and has wiped out large groves of oaks in northern California. Sudden oak death spreads from bay laurel to oak, and could result in acres of denuded hills. Bay laurels, among other flora, are thought to harbor the disease.⁴

Further, the project itself may spread sudden oak disease or other diseases by means of people, equipment, and vehicles. Dead oaks or other remnant trees would add to the fire danger. The EIS needs to analyze the problem for significance and mitigate it, but has not. Similarly, the question of harmful insects that might spread from the cut trees to those remaining. (Oaks can be harmed or killed by two hundred different kinds of insects.⁵)

The effects of increasing climate change on area flora and fauna are also uncertain, with no guarantee that native trees will be able naturally to colonize or survive.

The project should mitigate some of these environmental effects by requiring planting of native species including redwoods.

- 2. Cutting trees without replacing them will cause the spread of non-native species of grasses and brush, with attendant fire danger.**

The EIS calls for creation and maintenance of grasslands in various areas where the project would eliminate trees.

According to the EIS, grasslands burn more frequently than scrub or shrub lands, scrub burn more frequently than some forests. EIS § 4.3.3.1.2. And grasslands can be very

³ See, for example, http://nature.berkeley.edu/blogs/news/2010/10/sudden_oak_death_plotting_traj.php.

⁴ Indeed, in Marin County, there has been discussion of removing bay laurels in a (probably misguided) effort to save the oaks.

⁵ http://www.nps.gov/history/history/online_books/shirley/sec6.htm.

Comments on Draft EIS: Hazardous Fire Risk Reduction, East Bay Hills

ignition-prone and are dangerous because of the potential for rapid rates of fire spread. EIS § 4.3.3.2.7.

In the East Bay, “before the entrance of people into the region, grasslands were of limited extent. Native Americans played a major role in creation of grasslands through repeated burning and these disturbance-dependent grasslands were maintained by early European settlers through overstocking of these range lands with cattle and sheep.”⁶

From my own observation, removal of some of the eucalyptus trees between the entrance to Claremont Canyon on Stonewall Street and the running track above the Clark Kerr campus of UCB over the past few years has resulted in very significantly increased growth of weeds and thistles, which then die and dry out, providing fire fuel. A related result is long-term potential need for herbicides to suppress growth.

Instead of creating unnatural grasslands with potential fire danger and the need for continual maintenance, the project should mitigate the effect of non-native tree removal by requiring replacement planting of native species of trees including redwoods, whose fallen needles suppress undergrowth.

3. The EIS does not adequately address climate change.

Even if the EIS is correct in concluding that the climate change effects of the project are not individually significant, greenhouse gases are cumulative the world over and cumulatively extremely significant. The project can do a lot more to reduce the emission of greenhouse gases, and indeed to sequester carbon, rather than releasing it. The EIS must properly analyze this issue and require adequate and readily achievable modifications to the project.

“Forest loss and degradation is in fact our second largest source of CO₂ emissions, contributing over a third of all emissions. . . . Forests are nature’s carbon banks. . . .”⁷

“There are three things we must do to enable forests to work for us rather than against us, in climate change. We need to: ¶ Reduce forest loss by conserving our existing forest land base; ¶ Restore these forests to more natural levels of carbon stocks and sequestration; ¶ Reforest former forests where possible. . . .”⁸

In other words, trees are vital to the fight against global warming. The project should seek to reduce the loss of trees where possible. But if the project removes tens of

⁶ http://www.met.sjsu.edu/~clements/met164_papers/Keely_SFBA_FireHistory.pdf.

⁷ *Forestlife*, Pacific Forest Trust, Spring 2013, at p. 7.

⁸ *Id.*, at p. 8.

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thousands of trees, the project must plant replacements. As it happens, redwoods, which are native, are especially helpful in sequestering carbon. “[C]arbon sequestration, is something California’s redwoods do better than just about any other species on the planet. When given the right conditions, redwood trees gain height and girth quickly. Underground, forest soils and root structures store even more carbon. Because redwoods live for thousands of years, they are a very long-term source of carbon storage.”⁹

The project provides for much of the cut material to be driven to Yolo County to be burned to generate power. Biomass burning is a significant source of atmospheric carbon,¹⁰ and hauling the large number of heavy loads 75 or more miles generates additional greenhouse gas emissions. Another portion of the biomass is to be burned on site. And some is to be chipped and left to degrade on site. All of these activities will release stored carbon to the atmosphere.

The EIS needs to analyze possible reductions in these emissions. First, shorter and fewer vehicle hauling trips should be sought. Second, alternatives to burning, whether for energy or for disposal of trees, should be explored. Many cities in the San Francisco Bay area have extensive local composting and mulching programs. Mulching itself can help reduce release of soil carbon to the atmosphere.¹¹

Also, conditions should be imposed on use of equipment and fuels. Low emission, well-tuned vehicles and equipment should be used, and idling should be expressly forbidden. Finally, turning chipped wood under the soil would reduce the fire danger from biomass left on site, and obviate the need for burning.

4. Herbicides from the project may be applied for up to ten years and will enter the environment. The EIS does not adequately analyze the effects on the environment and on people.

The EIS discusses intended herbicide use on eucalyptus stumps, and concludes that the effects on the environment and workers would be minimal with proper precautions. However, the magnitude, number of applications, and possible exposure of hikers and children are not adequately discussed.

If 50,000 eucalyptus trees are chopped down, and if two ounces are used per tree, twice a year, then herbicide usage would exceed 1,500 gallons per year. With the large number

⁹ http://www.parks.ca.gov/?page_id=26107.

¹⁰ <https://sustainability.water.ca.gov/documents/18/3407623/Soil+carbon+sequestration+to+mitigate+climate+change.pdf>.

¹¹ Id.

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of applications, even if workers are properly protected, there is a likelihood that a few hikers or children, for example with short pants, will sit on stumps soon after herbicides are applied. Similarly, that small ground animals such as squirrels will ingest some of the chemicals and, in turn, be ingested by predators.

The EIS needs to discuss the breakdown of herbicide chemicals—how soon is toxicity lost, and what are the resulting chemicals and their effects? What are the short- and long-term effects of human and animal exposure soon after application? What are the short- and long-term effects of exposure to the residue? How do the chemicals dissipate into the environment and when?

Finally, the EIS needs to discuss alternatives. What happens if no herbicides are used? What are the likely environmental effects then?

5. The EIS does not adequately consider degradation of hiking and other recreational activities, and loss of aesthetics and shade.

Logging of 70,000 trees will provide some increased views of the San Francisco Bay from the hills, as the EIS notes. But the EIS understates the significance of the visual and aesthetic qualities of the project areas themselves. There will be stumps and loss of forests for decades, perhaps permanently, particularly in the absence of planting replacement trees. Residences and other built structures will also lose their screening, adversely affecting the recreational experience in these areas and exposing the residents.

Other types of exposure will occur as well. Hikers and others using the project areas will experience increased exposure to the sun. (As I know from personal experience, it is sometimes vital to health to find shade, particularly on hot days when ascending steep trails such as the trail in Claremont Canyon.) Certain animals will experience increased exposure to predators. Birds will lose nesting sites.

Herbicides will be applied widely and frequently (as discussed elsewhere in these comments.)

All of these project effects degrade recreational and hiking experiences. But at least some of these effects can be lessened or avoided by delaying some tree removal, especially along trails, until planted replacement trees have established. The EIS should address these problems and provide potential mitigations.

Comments on Draft EIS: Hazardous Fire Risk Reduction, East Bay Hills

6. The EIS does not adequately consider the alternative of restoring historic redwood forests as mitigation for the project's significant effects.

The EIS acknowledges the miles-long redwood forest that used to extend through the East Bay. (EIS § 4.8.2.3.2.) “Because of the extremely high demand, the East Bay redwoods were almost entirely logged over by 1860; not a single old-growth tree remains today (Bagwell 1982, Banks 1982).”¹² Id. “Until the early 1900s when all its redwoods were logged as part of the building boom that followed the 1906 earthquake, Oakland's famous old-growth redwoods were visible from all over the Bay Area. The famous Navigation Trees in the Oakland Hills were used as a landmark by early explorers and Gold Rush era ship captains as they entered the bay. . . . All those trees are long gone.”¹³

Redwoods are “exceedingly resistant” to fire and its effects.¹⁴ They are scenic, screen views, sequester carbon, provide habitat, and historically covered at least part of the East Bay hills. Active planting of redwoods in at least some areas where other trees have been removed should be considered as an alternative to the proposed project, or as required mitigation.

7. The EIS provides inadequate support for its conclusion about the effects of habitat loss or alteration.

The EIS acknowledges that alteration of habitat could result in short-term, significant and unavoidable impacts on wildlife. (EIS § 5.1.4.2.2.) The EIS goes on to state that “the transition of habitats from dense stands of non-native eucalyptus, Monterey pine, and French broom to woodlands, brushlands, and grasslands comprised mostly of native species would benefit wildlife in the long-term.” However, the EIS does not provide support for this assertion. Nor does it analyze the comparative effects of feasible alternatives, such as those proposed in these comments.

8. The EIS provides an inadequate analysis of the effects of project noise.

The EIS acknowledges that heavy equipment will cause significant noise impacts within the project areas and at the homes nearby. (EIS § 5.15.9.) To address this effect, the project would limit hours of work to 7:00 a.m. to 7:00 p.m. Monday through Friday and

¹² Actually, a single old-growth redwood does remain. See <http://www.sfgate.com/bayarea/article/EAST-BAY-The-Grandfather-of-Oakland-s-redwoods-2491122.php>.

¹³ Id., <http://www.sfgate.com/bayarea/article/EAST-BAY-The-Grandfather-of-Oakland-s-redwoods-2491122.php>.

¹⁴ http://www.nps.gov/history/history/online_books/shirley/sec6.htm, supra.

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8:00 a.m. to 5:00 p.m. on Saturday. This is not an adequate mitigation for those who work and sleep late. A later start should be prescribed.

The EIS also fails to evaluate the effects of project noise on wildlife and needs to do so.

9. The EIS incorrectly concludes that visual screening is not possible.

The EIS states that changes to prolonged views from homes and recreation sites are a significant adverse effect that cannot be avoided or mitigated; removal of vegetation required for fire-hazard reduction would reduce existing visual screening. (EIS § 5.8.4.) This conclusion cannot be supported without a proper analysis of alternatives. Some of the feasible alternatives proposed in these comments, above, would require the planting of native, fire-resistant trees including redwoods. This would decrease the fire hazard, while at the same time preserving visual screening.

Conclusion

Fire danger to residential communities in the East Bay can't be entirely eliminated. Indeed, if an earthquake breaks both gas and water lines, massive fires may result, having nothing to do with trees in the hills. While reasonable steps can and should be taken to reduce the danger from flammable types of trees, the draft EIS has failed to analyze many feasible alternatives that would have less significant effects on the environment, and has ignored many useful mitigation measures.

Reduction in fire danger can be accomplished in a balanced way that does not entail denuding the East Bay hills for generations and using herbicides, potentially for decades, to control resulting grass and brush, most of which will be non-native and will itself cause fire danger.

Instead, the project proponents should pursue an approach that will help restore the hills to their historic condition by actively planting fire-resistant trees, especially redwoods. This will not only address the adverse environmental effects of the proposed project on biological, aesthetic, and recreational resources, but will reduce greenhouse gas emissions and even foster carbon sequestration in aid of controlling climate change.

Yours truly,



Glenn C. Alex

From: [Alexandra Posey](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: East Bay Hills hazardous fire risk reduction project
Date: Friday, May 17, 2013 1:29:51 PM

Hello,

My name is Alexandra Posey, and I am a UC Berkeley alumna and current Oakland resident. I have a stake in the safety of both of these communities, and understand the danger posed to them by wildfires. However, I think the proposed plan to decimate the trees that currently exist in the Berkeley and Oakland Hills, including those within the historic Strawberry and Claremont Canyon areas, is a short-sighted solution that negatively affects these communities to a far greater degree than it protects them.

The trees in these areas have stood for decades. They are home to wildlife and are an essential component of the beautiful natural landscape that surrounds Alameda county and draws residents, businesses, students and professors to the area. I personally have chosen to live in Oakland, despite working in San Francisco, in no small part because of the proximity to these beautiful natural landscapes. I hike these areas frequently, and would be devastated to lose the trees that make the hills so beautiful.

While wildfires pose a very legitimate threat to these areas, I believe that attempting to prevent them by essentially clear-cutting large swatches of forest increases the likelihood of a truly devastating fire in the future. Deforestation contributes to global warming, very likely the culprit responsible for the severity of the wildfires in the West in recent years. Numerous studies also conclude that fire prevention in the form of brush clearing and clear-cutting prevents natural, small, and easily contained cyclical wildfires from occurring, which makes the area much more susceptible to a devastating and uncontrollable fire in the future.

Protecting Oakland and Berkeley residents and homes from fires is a worthwhile pursuit. However, I believe the proposed plan to clear-cut 85,000 trees is drastic and ultimately damaging to these communities and the environment. Please pursue alternative and less environmentally-invasive means of preventing fires in the area.

Sincerely,
Alexandra Posey

189 Vernon Terrace, Apt 8
Oakland, CA 94610
alexandra.e.posey@gmail.com

From: [Doc Holliday](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: RE: East Bay Project Tree Removal!
Date: Monday, May 20, 2013 9:19:21 AM

<http://milliontrees.me/2013/05/09/nearly-a-half-million-trees-will-be-destroyed-if-these-east-bay-projects-are-approved-revised/>

Subject: East Bay Project-Nearly A Half Million Trees Will Be Removed
Date: May 20th, 2013

To Whom it may concern:

I'm writing to express my comments on the planning of removing of almost a half million trees as noted in the story at above link.(East Bay Project) I believe that doing this will create even more long term problems in the future. Trees naturally protect against erosion where the wood chips will not. And, if the wood chips were to catch fire at any time, the fires would burn down deep into the mulch making it even harder to stop the burning. Just as underground roots can burn for weeks causing more erosion and further spread of fires. Then there is the destruction of the beauty these trees provide from anyone who looks upon them will be gone. There are other reasons besides the ones mentioned above, that should be considered before authoring a project such as this. The foremost being the voice of the people in this matter to do this with taxpayer's funds which can be more well spent on more important things. In these days of hard economic times this is a wasted project to say the least.

I am shocked by the way the government throws money around for dumb projects such as these!

Sincerely,
Alfred Zlotopolski

From: [Aly Condon](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: East Bay Hills EIS for Hazardous Fire Reduction
Date: Friday, May 17, 2013 2:52:42 PM

Dear Sir or Madam:

As I'm sure you can tell from the title of this e-mail, I am writing to you regarding my concern about the East Bay Hills Hazardous Fire Risk Reduction EIS. I am a resident of Berkeley, CA, zip code 94703, and have lived in Berkeley and Oakland area for the last eight years. Further, I have a BS in Applied Ecology and Environmental Science from Michigan Technological University. To clarify: I am not only a concerned citizen, I am one who is capable of understanding the necessity of plans to reduce fire hazards in the area. When living in Wisconsin, a decade ago, I participated in planned prairie burns to minimize risk of hazardous fires and promote the growth of native plant species. I am not some random, hollering "hippy".

My main concerns are thus:

- Cutting and chipping the trees in place, spreading a thick layer of wood chips and mulch on the ground, has been shown to be ineffective in preventing fires. The types of fires you get in this area are instead spontaneous ignition, and fires can spread under the chips, in the mulch, (subterranean) for great distances before even being noticed. In such a densely populated area, this would do little to nothing to reduce the potential financial devastation in the event of a fire.

- While you have, in your EIS, responsibly pointed out that you would be removing non-native species of plant - such as Eucalyptus, Monterey pine, and French broom - and leaving the natives in place, you seem to have failed to take the next, conclusive step. The plants that will grow up are chaparral plants. Chaparral plants burn quite easily; they have evolved to propagate in a frequent-fire ecosystem.

- This area has quite a few earthquakes, as I am sure you are aware. Reducing the amount of tree roots holding the soil in place will increase erosion. What that amounts to is an increase in landslides and mudslides after quakes. Additionally, it will increase slump at areas with roads. All of that will substantially increase property damage costs.

- The level of proposed cutting will virtually devastate the raptor population. It doesn't seem like much, perhaps, but in such a densely populated area - these areas are, as it even states in the EIS, next to residences and neighborhoods! - it will mean a significant, possibly exponential, rise in the rodent population. You may not be aware, but the Bubonic Plague a.k.a "Black Death" that devastated the world's population in the Dark Ages (nearly to the point of extinction of humanity, I might add) is present in the rodent population here in the San Francisco Bay Area. Without birds of prey (raptors) to eat the rodents, we will likely see a rise of incidence of this nasty disease once more.

- Additionally, the use of herbicides required to keep the areas clear will mean that the entire San Francisco Bay watershed will be adversely effected. We work very hard here to get enough clean water to support our population density. Please do not make it any harder for us. Thank you.

Having pointed out my major concerns - and I do apologize for the lengthy nature of

this e-mail! - I would like to suggest that you retract this EIS. Re-submit a new EIS, considering the above points, focusing on methods initially more expensive but ultimately much more likely to minimize long-term property damages and deaths due to wildfires. Eliminate ground fuels, limb up the trees, and put in fire breaks. Eliminate the fire ladder. Don't chip up the cut trees on site. (Did you know that Eucalyptus wood explodes when it burns? It does. I'm sure Eucalyptus wood chips are a bad idea for reducing the spread of fire.) Keep in mind the importance of the ecosystem when making your plan - the animals and the watershed are very important to our lives and livelihoods!

We residents thank you ahead of time for your extra time and extra diligence, which could mean extra lives and homes saved in the event of a disaster. (And that means tax dollars saved, too!)

Regards,
Alysia Condon
Berkeley Resident
Oakland Business Owner

From: [Anita Barrows](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: I am not in favor of the grant to UC to clear the eucalyptus and Monterey Pines from the Berkeley Hills
Date: Saturday, June 01, 2013 6:05:45 PM

I am a tenured professor of psychology at The Wright Institute, Berkeley, and I have lived in Berkeley since 1974. I walk several times a week in the Berkeley Hills area that is about to be denuded by U.C. Berkeley should their plan to raze the eucalyptus and Monterey Pines go ahead.

While I love these hills and their trees, I am writing not only out of my heartbreak that they might be changed forever; I am writing also because I feel it is an ill-thought plan, one which does not take into account the potential for mudslides in our rainy seasons once all the trees are gone. It also does not take into account the disruption to the habitats of wildlife, including owls and hawks. Some countries, notably the Philippines and Ecuador, have accorded rights to nature; have we no interest in extending rights to our environment?

I am also appalled at the prospect of the use of a herbicide to prevent further growth. Herbicides are known endocrine disruptors, and -- being a mother and a grandmother and working in clinical practice with children who have neurodevelopmental disabilities -- I am extremely concerned about the presence in such great quantities of a known endocrine disruptor in our hills.

It has been suggested that clearing the underbrush would work just as well as a deterrent to fire. Something by way of management has worked, since these trees have been there and we have not had a major fire in these hills since 1991. Why does UC want to do this now? What plans do they have -- which they are not telling us -- for the use of this land?

I strongly urge you not to fund this grant.

Thank you,

Anita Barrows, PhD
Institute Professor
The Wright Institute
Berkeley

From: [Anna](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: comment
Date: Friday, May 17, 2013 12:53:31 AM

To the parties involved,

Please only remove non-native plants and this plan may not be a guise to clear vegetation to allow development. Are the areas in question already actively maintained? Shouldn't those in charge of maintenance already have a non-native vegetation removal plan? If so, then is it necessary to have a large scale, potentially expensive, fire hazard reduction plan? Is it also necessary to use herbicide? Can a cheaper and/or more environmentally friendly alternative be used? Will native vegetation be planted in replacement? What will happen to felled trees? Will they be sold? If so, where will the money go? Aren't wildfires an integral part of California's ecosystem? Please provide a summary of the environmental impacts conducted and written by a qualified and unbiased environmental scientist.

Regards,
East Bay resident

From: [Arnita Bowman](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Oppose wasting FEMA funds for destructive non-native plant removal
Date: Wednesday, May 22, 2013 8:15:01 AM

I oppose this massive plan to remove non-native trees from the Bay Area East Bay Hills and Miller Knox/Shoreline and to misdirect FEMA money to promote the native plant ideology. Removing the trees will contribute to global warming, worsen air quality, increase poison oak and herbicide health risks, damage the existing ecosystem, increase erosion, and damage the scenic landscape. Most disturbing is that the plan does not even restore native plants but merely removes "non-natives". This is destruction of healthy ecosystems without even an attempt to restore.

FEMA should not use the "native" status of trees to determine whether to remove trees or not. If the trees were "oaks" and not "eucalyptus" or "Monterey Pines", would FEMA support removing the trees or wasting limited funds for destroying forests? This plan certainly makes me loose faith that the government is wisely spending taxpayer dollars or has a shortage of funds.

Regards,

Arnita Bowman

638 29th Ave

San Francisco, 94121

From: [Joseph Avalos](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: In regards to the clear-cutting of trees in the East Bay of California
Date: Saturday, May 18, 2013 1:35:02 PM

To whom it may concern,
My name is Joe Avalos, I am composing this missive to inform you that I fervently oppose your intent to clear-cut the bucolic forests of the Strawberry and Claremont Canyon areas in the East Bay of California. This plan is abominable, utterly revolting, and should not be allowed come to fruition.

This deforestation will haphazardly disrupt the ecological niches for all organisms in the forest, including the humans outside. I am sure you are aware of the ecological importance that trees play in balancing the CO₂/O₂ levels in our atmosphere as well as providing a home to many keystone species which inhabit our forests.

While I understand that a periodically need to thin out the forest to prevent uncontrollable fire hazards (due to the fact that we prevent the natural course of forests fires which paves way for new species and prevents the buildup of underbrush, the main contributor to the uncontrollable factor of modern forest fires) one must understand that clear-cutting then dumping an estimated thousands of gallons of MONSANTO'S ROUNDUP is not the path to take! The destructive repercussions of such thoughtless actions are incalculable!

This will lead to soil erosion, disruption of the nitrogen fixation that composes nutrient rich soil, contamination of our soil and water, loss of the home for native species, possible emergence of invasive species and those are just to name a few. As a humble human being whose strength lies solely in his words, I beg you—please do not further destroy my planet, my homeland, my beautiful state of California. We are much better than this, we are, or at the very least should be striving to become better than thoughtless profits and blind destruction.

-A decent human being,

Joe Avalos

From: [Lorenzo Avila](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Please Abandon East Bay Hills Tree Destruction Project
Date: Thursday, June 13, 2013 11:21:40 PM

This plan lacks scientific basis, dharma consciousness, and civic common sense.

I have lived next to these hills since 1971. Before, I lived next to the Los Padres Forest behind Santa Barbara, witnessing huge fires (e.g. 1964, if memory serves; in 1990 these same mountainsides burned, this time the fire did not stop until it reached the ocean).

In the major East Bay fire this scheme claims to avoid repeating, the initial cause was failure by the Fire Dept. to quench a tiny blaze near the ridgeline the day before; when the Santana wind kicked up, it blew sparks into nearby grass. Thousands of homes burned, a fire crew was incinerated with their truck....no question, a tragedy. But trees did not start it, and it was the HOMES that caught in such a way that control became impossible.

Got a spare \$6 million? Want to reduce risk? Work with homeowners to make the buildings fire-defensible and at the same time seismically safer. Harden the water, gas and electrical systems against earthquakes and electromagnetic pulses. There are plenty of ways to protect human life without destroying an ecosystem. Your own document admits that these trees significantly reduce fire danger because they precipitate fog into rain. Climb into the groves above the Claremont Hotel and elsewhere on a foggy SUMMER morning or evening before you imagine you are doing good by eradicating trees and dosing the hills with poisons. The wind drives the fog up the hill; you feel no moisture until you walk under the trees, when you simply get drenched. Birds, frogs, deer come alive..

Personally I wish the acacias weren't proliferating near my house. Damn shame the lumber speculators brought the wrong variety of eucalyptus after the original trees were clear-cut to build our cities. But the nativist fantasy of grasslands, or indigenous species only, makes as much sense as playing God to enthrone the Aryan race and gas the others. At least some of the Aryans are good-looking -- there will be no reason to look up at the hills if this silly waste goes forward. Do you think a Santana can't turn a dead pile of wood chips into a firestorm?

May 20, 2013



FEMA
1111 Broadway, Suite 1200
Oakland, CA. 94607

RE: Draft EIS (UCB, City of Oakland, EBRP)

To Whom It May Concern:

As written, the Draft EIS for East Bay Regional Park, University of California and the City of Oakland vegetation management projects is unacceptable since it does not adequately address the effects of these projects on Greenhouse Gas emissions and carbon sequestration capacity. The EIS uses an inappropriate baseline and also fails to consider the loss of ongoing carbon sequestration that will certainly result from these projects. The EIS baseline only accounts for the difference between a full forest of trees and a completely denuded area of that forest. What happens six months or a year after the clear cutting?


I believe the EIS inadequately addresses the cost and risk to small animals and children associated with the use of Herbicides. By reducing the number of trees they propose to clear cut, they would substantially reduce the amount of toxic herbicides and reduce the cost as well.

EBRPD has come closest to what seems a logical approach towards fire risk mitigation with their proposal to eliminate understory from the forest then trim up branches of all trees as well as cut down smaller trees to give space for the larger trees to continue to grow their canopes.

I respectfully request that you ask all three agencies to redirect their work towards fire risk mitigation and not native plant restoration. There simply is no physical way for all the non-native trees to be eliminated without causing dramatic changes in the hills environment.

Thank you the time and effort you and your staff have put into these projects. Sincerely,

A handwritten signature in black ink that reads 'M Baer'. The signature is fluid and cursive.

 M Baer
1227 Alvarado Road
Berkeley, CA 94705

MJB
ASSOCIATES

1227 Alvarado Road
Berkeley, CA 94705

OAKLAND CA 946

21 MAY 2013 PM 7 1



JEMMA SANDRO A
1111 Broadway, Ste 1200
Oakland, CA 94607

94607405200

From: [Aimee Baldwin](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Berkeley, Oakland Hills Fire hazard reduction plan
Date: Sunday, June 09, 2013 1:55:26 PM

To whom it may concern,

I disapprove of the currently proposed East Bay Hills Hazardous Fire Risk Reduction Project. In my review of the proposal to cut down all non-native trees, chip them, and apply localized poisons to tree stumps, I find that the plan is cheap and lazy, and just as likely to produce unexpected negative environmental impacts as it is to fix any perceived fire risk problem. Clear cutting trees without having a sufficient amount of already established mature trees to take their place is likely to cause major landslide issues, that simply laying down a few large logs as "erosion control" will not fix. There is no proposed long term prevention of new invasive species from re-growing in place of the ones removed: just poisoning eucalyptus stumps does not prevent scotch-broom and pampas grass from growing in its place. A chipped mulch of Eucalyptus will contain oils (the same ones that make them "explosive" in fires), which will prevent native plants from being able to be established in that area: we will not have a healthy selection of plants to grow in eucalyptus mulch. The long-term negative impact of application of poisons on the local wildlife, ecosystems and bay water quality is not an acceptable solution.

I have not heard of alternative plans proposed. Why have there not been other solutions proposed and presented for public review? Why can't there be a solution that involves slower change, transitioning the flora over a number of years, without the clear-cutting, chipping/mulching, and without the poison? We have a wealth of highly educated individuals who have dedicated their careers to understanding the workings of local ecosystems within our urban landscape. I am sure many of them could propose a solution with low-negative impacts. I know there are many individuals in the community who would support a better, well thought-out solution.

I disapprove of the proposed East Bay Hills Hazardous Fire Risk Reduction Project as it is currently proposed. I believe there are simple alternative solutions possible, if only FEMA would be willing to work with people who closely understand the local ecosystem and what it could handle.

Sincerely,
Aimee Baldwin

From: [Barbara Jefferson](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: In protest of the Oakland Hills Tree Removal
Date: Sunday, May 19, 2013 1:16:17 PM

To Whom it May Concern,

As an Oakland resident, Berkeley employee, and environmental steward, I am writing in protest of the removal of more than 10,000 trees in the Oakland and Berkeley Hills.

Not only will this removal project cause incredible devastation to the wildlife, ecosystem, and interdependent systems that rely on these trees, the chemicals you intend to use will pollute our water with toxins that are know to cause major health issues that lead to both cancer and chronic illness.

The waters that run from these hills wash across the same landscape where families, students, businesses, homeless, etc. are already struggling to find health and happiness. It has been predicted by experts that in the next 30-50 years over half of our population will have cancer in their lifetime. Do you want to be a cause or a cure?

Stripping our environment of these precious trees and spreading poison in their wake is something I cannot allow to happen. I want to raise children here.... What kind of investment is that in their future? What kind of world are we creating for them?

I hope that you will pass this email on to anyone and everyone who has a say in this decision.

From my heart to yours.



~ **Barbara Jefferson** ~
Trainer|Facilitator|Raven

[~Young Women's Leadership](#)
[~Generation Waking Up](#)



2915A Wheeler Street
Berkeley, CA 94705
15 June 2013

Re: EIS for FEMA's proposed fire-reduction projects in the East Bay Hills of the San Francisco Bay Area.

With reservations, I generally support the proposed plan as outlined in the EIS. I believe the EIS is deficient, however, in its lack of a realistic plan to respond to a particular and very significant problem that will result from the project as described.

Maintenance for 10 years may result in elimination of large-stature trees that are especially fire-prone, but a much longer-term program will be needed to ensure that the proposed project doesn't result in low-value, broom-dominated environments that remain at extreme risk of fire. The various land-management entities should consider a staged implementation of the overall project (having identified the most fire-prone priorities) to avoid being immediately overwhelmed in the maintenance phase.

For almost 20 years, I have been involved in wildlands weed management, mostly as a volunteer. I have worked with professional land managers, using mapping to identify and track weed populations, and using a variety of methods to control exotic and invasive plants. This work has included mass removals of large, long-standing French broom infestations, along with careful---and sometimes not careful enough---programs of post-removal follow-up. During this same 20 years, I have regularly visited various East Bay Regional Parks and UC Berkeley land, spending most of my time in the area of Claremont and Strawberry Canyons. I am an inveterate weeder.

In many areas (e.g., the generally south-facing slopes of Claremont-PDM) where Eucalyptus and other exotic trees will be eliminated, there will be an explosion of French broom that will be extremely difficult to control. Eliminating eucalyptus and other exotic sprouts and re-sprouts will be comparatively easy IF the monitoring and maintenance is regular and thorough for 10 years. That job will be severely hampered, however, by the surging growth of scrub species (native or not) when competition for light is reduced.

Seeds of French broom remain viable for many decades. In Claremont Canyon-PDM, for example (much of which was already logged decades ago) large, mature broom have been flowering for years, deep in the understory. There is an enormous volume of seeds waiting to explode. These sprouts will probably begin producing additional seed in as few as two years. If this is not diligently and thoroughly controlled, the long-term problem of this particularly troublesome species will grow out of control.

The results will be 1) the mass displacement of numerous native species that the proposed plan supposedly favors; 2) long-term establishment of broom monocultures that are of low biological value; and 3) very significant fire risk, as broom is highly flammable and fast burning.

This likely scenario belies the statement on p. 5.1-2 of the EIS, that "[t]hrough eradication of non-native, invasive, and fire-prone species (eucalyptus, Monterey pine, and acacia), native vegetation communities would experience long-term beneficial effects." How can this be so if the result is a broom monoculture?

It would be a terrible shame for the proposed project---which I generally support---to result in the explosion of broom. Yet, the proposed plan's 10-year monitoring and maintenance plan will surely have this result in numerous parts of the project area, especially if implementation of follow-up measures is inconsistent or ineffective.

The draft MMPs (see Section 5.1), which are cited by the EIS to describe the different proposals for follow-up control of exotic invasive species, do not inspire confidence when viewed in the context of some landowners' present methods. While it would be unreasonable to expect the reviewing agencies to attempt to analyze and implement a 60-year program for the elimination of broom, we all need to recognize, for example, that EBRPD and UC Berkeley already lack the resources and/or organization to deal with the most damaging exotic-species infestations in an effective manner. Trailside broom thickets (and hemlock, milk thistle, Italian thistle, mustard, euphorbium, etc.) are allowed to grow in Strawberry Canyon, for example. Then, they are either cleared with bulldozers (with resulting soil disturbance that exacerbates infestations) or sprayed with foliar herbicides and left standing. In the latter instance, some dead broom thickets have remained for years, preventing access to control living broom farther from the roads---and just waiting to be ignited.

The sensible policy would be to implement the fuel-reduction program in steps to ensure that no more land is cleared each year than the amount for which a systematic, thorough, long-term (20 years) can be initiated. Under the proposed plan, completion of the tree removal within just a few years will almost assuredly leave us with horrendous broom infestations that are biologically impoverished---and still dangerously flammable.

Thank you for considering my comments.

Sincerely,

Philip Batchelder

From: beneficialbug@sonic.net
To: [EBH-EIS-FEMA-RIX](#)
Subject: Revised to include UC quotes..
Date: Monday, June 17, 2013 4:57:18 PM
Attachments: [EBPA, FEMA, 2013.txt](#)

East Bay Pesticide Alert / Don't Spray California's
2013 Submitted OPPOSITION TO FEMA GRANT for UC; EBRPD; Oakland,
dEIS response
submitted 6/16/13

To Whom It May Concern:

East Bay Pesticide Alert, also known as Don't Spray California, is taking this opportunity to respond to any FEMA grant requests from the University of California (UC); the East Bay Regional Park District (EBRPD); and the city of Oakland for what the agencies refer to as 'wildfire prevention projects' in the East Bay Hills. For over 8 years we actively have opposed these entities' attempts to continue various and related wildfire projects which often include the use of pesticides, and in the case of tree fellings which for these agencies is paired with pesticide use, cause increased fire danger to people, wildlife, structures. These plans violate at least two out of three parameters of FEMA's Wildfire Mitigation Policy, MRR-2-08-1, "Wildfire Mitigation Policy for the HMGP and PDM Program".

PESTICIDES, TOXICITY, and FIRE DANGER DUE TO MISMANAGEMENT

UC, EBRPD, and the city of Oakland amply have demonstrated their wildfire prevention protocols in the past and have, in the EIR process of EBRPD quite recently, shown their intentions to continue what has caused fire danger in the hills. Each of these entities' practices, irregardless whether people support more tree fellings or pesticide use, routinely have included spraying pesticides and leaving dead vegetation throughout the hills, a clear fire danger adding to grossly mismanaged understories throughout the hills. These agencies each have acted in negligence, continuing practices which abetted the '91 fire. For this reason alone, they should not be granted FEMA wildfire prevention monies. They have demonstrated incompetence in the past and their future plans would jeopardize the health and wellbeing of people, pets, wildlife, insects, soil, and vegetation, as well as structures, a misuse of public funds. For a flammability study conducted in the East Bay, near Claremont Canyon, please see "<http://pesticides.intown.biz/Cheriel%20Response.html>" <http://pesticides.intown.biz/Cheriel%20Response.html> .

Perhaps an example of intention would be enlightening. The only specific general management practices mentioned in the EBRPD's Draft EIR were an inadequate requirement for notification signs, and reference to the size and smoothness of cut tree stumps. EBRPD appears to have no interest in serious notification which might allow people plans to avoid treated areas or better yet make arrangements to stay away from nearby homes for a time period, and seems to be more concerned about the potential for splinters from logged trees than about chemical poisoning from contact, drift, and other mobility of pesticides applied to and around the stumps and other vegetation, a subject they avoid. Please see "<http://twinside.org.sg/title/service76.htm>" <http://twinside.org.sg/title/service76.htm> on Denmark's ban on RoundUp because it was found in groundwater.

The toxicity of the various pesticides in the plans was handed to representatives of the various agencies involved; Jean Quan; Jake Sigg of the CA Native Plant Society; the two Friends of Sausal Creek "leaders" at the January 26, 2005 hearing whom Jean Quan identified as having come to her asking her help to get another exemption to the city "ban" on pesticide use so that they could use it around Sausal Creek. We have various toxicological profiles looking at Triclopyr-based pesticides; Glyphosate-based pesticides; and Imazapyr-based pesticides on our site's wildfire pages, what was handed to these people in 2005 (<http://www.eastbaypesticidealert.org/wildfire.html>), along with some other toxicological profiles of other pesticides used by EBRPD, for instance Surflan. An excellent essay follows those

toxicological profiles, describing synergistic effects of pesticide products which are combinations of chemicals thrown together to make a pesticide product such as Garlon; Rounup; Stalker.

SYNERGISM

From the dEIS:

<<

5.1.1.3 Cumulative Effects

Frequently herbicides are applied as a mixture. For example it is common practice to mix Garlon 4 (triclopyr) with Stalker (imazapyr). It is not possible to calculate the hazard for a mixture but hazards were calculated for each herbicide in the mixture and then combined if appropriate.

5.1.1.4 Adjuvants

Adjuvants are solution additives that are mixed with an herbicide solution to improve performance of the mixture. Adjuvants can enhance activity of an herbicide's active ingredient (activator adjuvant) or offset any problems associated with spray application. Activator adjuvants include surfactants, wetting agents, sticker-spreaders, and penetrants. Surfactants, or surface-acting agents, facilitate and enhance the absorbing, emulsifying, dispersing, spreading, sticking, wetting, or penetrating properties of herbicides.

Adjuvants are not under the same registration guidelines as pesticides. US EPA does not register or approve the labeling of adjuvants. California Department of Pesticide Regulation does require the registration of those adjuvants that are considered to increase the action of the pesticide/herbicide it is used with.

Based on the analysis of possible adjuvants that may be used in the proposed and connected actions (see Section 2.1.2), including the design features, the risk of adjuvants (at the application rates provided in proposed and connected actions would be low.

>>

Again, conflictual statements in the dEIS. Above in 5.1.1.3 we read, "It is not possible to calculate the hazard for a mixture." Whether it is possible or not is a separate issue but they just have stated they cannot. Next they say, "but hazards were calculated for each herbicide in the mixture and then combined if appropriate." In fact, this statement does not make sense. When chemicals are mixed synergism, potentiation can occur. This is the effect of two chemicals combined creating what is considered a higher level of toxicity than the sum effects of two chemicals. What do they mean? Hazards were combined? Do they mean that hazards were added up in sums, like $2 + 2$ on a chalkboard. That is not useful to us if we want to know the real effects on living organisms. In fact, they have given the very reason that pesticide use must not be allowed at all, because even for those who feel fine about risking their own families' lives by having pesticides used around them, this document clarifies that the combined chemicals according to them cannot be understood in terms of their effects, and therefore their statement in 5.1.1.4, "the risk of adjuvants (at the application rates provided in proposed and connected actions would be low," cannot be made. It is illegal to call pesticides safe. Is this an attempt to do an end run around this law? In fact, we have known since at least 1988 (Sawada) about POEA, a surfactant used in Roundup in some formulations, being linked with cancer, that its inclusion activated and potentiated the "work" of the "active ingredient", Glyphosate. This is no new news. As it says in the dEIS, "Adjuvants can enhance activity of an herbicide's active ingredient." This fact is not being disputed so it is unconscionable that the dEIS authors conclude that, "the risk of adjuvants (at the application rates provided in proposed and connected actions would be low".

ALTERNATIVES to PESTICIDES

These agencies' plans are to cut trees and use pesticides. There is no safe use of pesticides. By nature they kill, cause genetic mutations, neurological problems, hormonal disruption and dysfunction. They translocate and endanger water supplies. We offered them alternatives in 2005, most absolutely standard practices, focusing on fuel reduction by employing people who need jobs to do manual labor of understory removal without the use of chemicals. And in the case of any tree fellings, solarization of tree stumps, a standard practice relying on elementary school and backyard gardeners' basic principles of starving plant life of the photosynthesis process. No photosynthesis, no sugars to feed the plant (read: resprouts). A dark tarp stapled down is a standard practice, but it is possible to use a natural tar (as opposed to a petrochemically-derived product) instead. Alternatives to pesticides abound, as we

made clear in 2005; yet, just days after our presentation, Tom Klatt of UC put out his 10 year plan for Strawberry Canyon and Claremont Canyon, which is enlightening. It says labor and chemicals are about \$100 per acre each of two times per year, expecting it to take 1-1/2 hours per acre. That's probably a crew of several working to apply pesticides (it's only the Licensed Pesticide Applicators overseeing spray projects who make huge salaries; people doing the dangerous work rarely make much above minimum wage). The \$4000 management for \$6716 in labor and \$1125 in chemicals for 45 acres for Claremont Canyon for 10 years may well be part of the Licensed Pesticide Applicator salary of \$125,000 common in 2005. So in the event of tree fellings, a crew going in with weed wrenches for baby trees or weed whackers for resprouts should be able to be paid if instead applying most or all of that "management" \$4000 for their wages, an assertion we have made all these years. Additionally, what is not outlined in Klatt's plan, nor in any of the agencies' project plans or grant requests is who covers the costs of lost productivity for those sickened by pesticide exposures, whether workers applying pesticides or otherwise working in the hills, residents, or visitors to the hills. Without such plans specified it appears that the burden is shifted to individuals, cities, or counties.

SCARE TACTICS

The issue we brought up in 2005 remains today; mismanagement. Even in the very few cases of diseased trees which legitimately should be felled if they would be likely to collapse in an area where people or homes would be damaged, after fellings these agencies could be cutting back resprouts, solarizing, or employing one of the many other alternatives we offered as examples. But the city of Oakland is a prime example of mismanagement creating fire danger. Eucalypts cut down in Montclair were left to resprout and in 2005, after this resprout museum had grown tall once more, but with multiple sprouts creating fire ladders everywhere, the city council woman who wanted to join in the hills pesticide use pushed by UC and EBRPD used these resprouts as an example to scare people. What scared us was the city's irresponsible behavior in cutting the trees in the first place if they didn't plan to cut them back after, or dig out the stumps. City representatives kept talking about the massive danger of that stand of resprouts but never bothered in that time period to have the sprouts cut back down. Further, Jean Quan, City Council member then, Mayor now, recently was cited for creating fire danger in her neighborhood by negligence around her home (September 2011: <http://www.ktvu.com/news/news/irate-neighbor-calls-oakland-mayor-quan-queen-of-b/nD5P5/>). These requests for FEMA grants were in many ways fueled by Jean Quan who has proven herself to be irresponsible around her own neighborhood in the most basic of ways. FEMA should take no lead from someone apparently placing having no interest in universally-agreed upon fire safety methods of keeping areas around homes clear of brush.

TOXICOLOGICAL PROFILES OF PESTICIDES

In January of 2005, EBPA/ DSC handed representatives of each of these entities toxicology of the pesticides UC and EBRPD already were using, and pushing Oakland to use in the hills. We offered many quite standard alternatives to pesticide use while pointing out the danger to other species of removing Eucalyptus from the hills (Eucalyptus was the only tree being discussed at public hearings at that time). Please see "<http://dontspraycalifornia.org/wpad.html>" "<http://dontspraycalifornia.org/wpad.html>" for more info on our opposition in that time period. Also, please see the toxicology of Monsanto's RoundUp "<http://www.alternatives2toxics.org/catsoldsite/round.htm>". "<http://www.alternatives2toxics.org/catsoldsite/round.htm>"), the toxicology of glyphosate, the "active" ingredient of the product called RoundUp "<http://www.pesticide.org/get-the-facts/pesticide-factsheets/factsheets/glyphosate>" "<http://www.pesticide.org/get-the-facts/pesticide-factsheets/factsheets/glyphosate>"), and that of Garlon's triclopyr "<http://www.pesticide.org/get-the-facts/pesticide-factsheets/factsheets/triclopyr>" "<http://www.pesticide.org/get-the-facts/pesticide-factsheets/factsheets/triclopyr>"), at least the formulation used at that time. Formulations are changed routinely due to pesticide resistance. In fact, part of the danger of a pesticide approach is that when a pesticide stops performing as expected, use of a new formulation is planned. Look at our wildfire page to see a group of toxicological profiles partway down the page: <http://www.eastbaypesticidealert.org/wildfire.html>

What about environmental oversight of new formulations? Is that part of FEMA's oversight when granting monies for wildfire prevention projects? Does FEMA plan to leave oversight around product and formulation use to these agencies if FEMA should grant them public monies to fund their requests? Please see "<http://www.eastbaypesticidealert.org/wildfire.html>" "<http://www.eastbaypesticidealert.org/wildfire.html>" for details of the other pesticides UC uses in the hills.

DOES THE DECEIT NEVER END?

From the dEIS:

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None of the herbicides proposed for use in this project were identified as carcinogens; therefore, only non-cancer hazards were evaluated. Adverse ecological effects were evaluated by comparing exposure concentrations to reference doses or toxicity values. The ratio of exposure to toxicity is referred to as a hazard quotient (HQ). An HQ assumes that some level of exposure exists below which even sensitive populations are unlikely to experience significant adverse effects. HQs below 1 suggest acceptable risk, while HQs equal to or exceeding 1 may suggest unacceptable risk.

>>

Once again, we must consider synergism. Possible carcinogenicity of pesticide products is based on so-called "active ingredients", what are called 'inerts' (can be 99.99% of a product) not evaluated for carcinogenicity, and as they are proprietary, we have no ability to try to evaluate carcinogenicity by identifying separate chemicals and checking for whether any of them are carcinogens. We are left in the dark.

LOW DOSE and the NON-MONOTONIC DOSE RESPONSE

New formulations cannot be expected to be "less toxic", though that phrase also has absolutely no legal meaning, which may be why we have seen these agencies use such language trying to assuage the public throughout time as people have opposed pesticide use. In fact, pesticides can hit hardest in small, repeated, cumulative doses which build up in the body, and by the 'non-monotonic dose response'. The NMDR results in a larger response with less of a dose. This is the theory and basis of the practice of the healthcare modality, Homeopathy, practiced around the world; less can be more. Researchers long have described the cumulative effects of low doses of chemicals, which they consider more dangerous than the occasional major exposure in otherwise-healthy individuals. For more detail on low-dose chemical responses, please see "<http://web72345.ntx.net/article/gulfwar.shtml>" <http://web72345.ntx.net/article/gulfwar.shtml> or "<http://toxsci.oxfordjournals.org/content/68/1/1.full>" <http://toxsci.oxfordjournals.org/content/68/1/1.full>. Endocrine disruptors are one example of chemicals that cause a non-monotonic dose response. Or, as the body is secreting what it can of the toxin, toxic effects can increase as well. An example dating back to 1888 is that of fungicidal chemicals such as mercuric chloride increasing fermentation in yeast "<http://toxsci.oxfordjournals.org/cgi/content/full/77/1/151>" <http://toxsci.oxfordjournals.org/cgi/content/full/77/1/151>). This kind of process was demonstrated in Sonoma and Napa Wine Country, where health surveying revealed common, overwhelming, systemic yeast overgrowth in people (animal testing was not done to ascertain statistics on farm or domestic animals). Fungicides such as Copper Hydroxide, and Sulfur scraped from industrial smokestacks, are used everywhere in the vineyards and inversion layers in the valleys trap people and animals in a chemical soup. Another fairly common example shows itself around varied responses to coffee. While the general expectation is that a cup of caffeinated coffee will give people energy and a "pick up", for many caffeinated coffee has a physically relaxing effect while decaffeinated coffee, containing much less caffeine, gives them alertness and a burst of energy.

RESPONSE TIME AFTER EXPOSURE

In the case of pesticide applications, people might not have their primary reactions at the time of highest exposure but as the exposure tapers off, they can have even fatal responses. In the case of carbamate and organophosphate pesticides, commonly people don't experience any significant response until 8-12 hours after exposure, and responses to pesticides can last weeks to years, in the case of a response taking someone past a point of her/his body's ability to metabolize the toxins in question. Just as one person can metabolize a 6-pack of beer quickly, another can be asleep, or otherwise affected, after a sip or two. We, and wildlife and pets, are individual biological beings which variously are damaged by pesticides, as is soil and vegetation. The medical establishment has not been taught to recognize even the most common symptoms of exposure to even the most commonly-found pesticides, and typically is not familiar with appropriate tests such as the cholinesterase test which looks for depressed levels of this enzyme, seen with carbamate and organophosphate poisoning, but must be checked within a few hours of exposure to provide an accurate assessment. Thus, when people die of heart attacks or asthma attacks due to pesticide exposures, their death certificates give no indication of the part pesticides have played. This results in any epidemiological or other health studies and data kept

by the Department of Pesticide Regulation (DPR) and other agencies being skewed. It doesn't help statistical understanding that undocumented workers, many who do the dirty work of applying chemicals which can kill them, are not going to be showing up in OSHA (Occupational Safety and Health Administration) files, DPR's source for records on work-related pesticide poisonings, as DPR's staff scientist, Louise Mehler, acknowledged to us in the latter 90's.

RISK ASSESSMENT: THE UNETHICAL PRACTICE OF DECIDING SOME PEOPLE AND OTHER BIOLOGICAL ORGANISMS ARE AN "ACCEPTABLE RISK"

Risk Assessment is the game played by the pesticide industry, busily trying to keep people from thinking critically about pesticide use. Risk Assessment, the methodology used by the chemical industry and authors of Environmental Impact Reports and Statements and seekers of any number of grants for projects including pesticide use, or the downing of trees, for instance, theorizes which risks are "significant" or "acceptable" to those who are paid to evaluate the financial cost-effectiveness of a plan. First, do no harm, Hippocrates' motto, and that of healthcare workers and medical doctors everywhere, recognizes that it is not ethical to call anyone an Acceptable Risk, nor is it ethical, from a standpoint of environmental sustainability, to apply Risk Assessment to wildlife, pets, insects, vegetation, and soil. Biology is clear: neither humans nor wildlife, pets, insects, vegetation, nor soil exist in a vacuum. Each is part of an intricate web from which one cannot be spot-removed without endangering the others. In fact, the USDA's Light Brown Apple Moth debacle has been exposed for the danger eradication attempts represent to biological habitats, meaning any habitat. Trying to eradicate something naturalized can create a hole of unknown consequences which we cannot predict so could not possibly know how such potential damage might be mitigated.

Repeatedly in the dEIS, what are called "Best Management Practices" are based in vagueries and sometimes conflicting numbers such as reference to "windless nights", "apply on windless days to reduce drift", "when wind speed is low" or "less than 2 mph" winds, or "wind must be less than 3-5 mph".

Who determines wind speed? A quick internet search of 'wildfire abatement wind speed predictor tool' and 'wind speed predictor tool' show no item which, on the spot, would provide such information as the wind speed and directions change; indeed, it appears that the methods a Sonoma County Deputy Ag. Commissioner, Jim Sallee, told Sonoma Pesticide Alert in the mid-90's were the ways that growers were using to determine whether it was a "good" time to apply pesticides in vineyards or on oats and hay, looking at a wind sock, or burning old tires, is seems to be approximately what is being suggested in this dEIS. Based on 5 months of photography of pesticide applications in the Sonoma Valley primarily in 1998 and 2000, every time of day and night, photos demonstrate why there is not going to be a "windless" situation and that, there is no way to be able to assume that even if specific wind speed could be stated in one moment, it would remain so.

From the introduction to the Screening Level Human Health and Ecological Risk Assessment section of the dEIS:

<<.... herbicides would not be applied to foliage outside the buffer when wind speed is greater than 10 mph or less than 2 mph. Very low wind speeds are conducive to drift because very light winds are highly variable and are associated with inversion conditions, in which mists and vapors tend to stay near the ground rather than dispersing upward.>> Photos on our website (photos of changing winds taken by author literally a few seconds between photos) show a typical "low wind" night in the Sonoma Valley where, like in the East Bay, inversion layers are common:

<http://www.dontspraycalifornia.org/pixwc.htm>. Here in the dEIS direction for applying only between 2.01 mph and 9.99 mph is given, while in the "Best Management Practices" sections 3-5 mph is one directive. What will determine the difference between 2.01 and 2.99 mph for the pesticide applicators applying toxics? Wind speeds change continuously; this is inexact and conflictual direction posing as science. Perhaps we should collect old tires and haul them to the hills for disposal.

From the dEIS:

<< Surface water could be impacted by herbicides being directly sprayed on the water, by windblown spray reaching the water, or by precipitation and runoff carrying herbicides from the application site to surface water. Visitors participating in recreational activities such as swimming or boating could then be exposed through skin contact to contaminants in surface water or through incidental ingestion of the water. Further, anglers may, in theory, be exposed to chemicals taken up into fish through consumption of fish taken from nearby surface water bodies.

Groundwater could also be impacted if precipitation percolating through soil transports herbicides to groundwater. Surface water or groundwater affected by herbicides could in theory be used for drinking water or irrigation of home grown vegetables; therefore, risks to residents should be considered for these possible exposure pathways. However, most residents use public water supplies. In addition, surface water or groundwater in the area may be used for irrigation of agricultural crops. Uptake of chemicals into crops and subsequent consumption by people in the area is a possible exposure pathway.>>

There is no reference for the meaning of 'most', or for which residents the dEIS authors include. Many residents of Alameda and Contra Costa Counties, including the author of these comments, are on well water, without potential protections of municipal water supplies. That is many hundreds of people in the development in which my family lives, probably 400 or more people. One may reasonably conclude that they consider all people on well water, in two counties, an acceptable risk.

Environmental reviews should be based on the Precautionary Principle, which in a nutshell states "better safe than sorry", with a particular view toward protecting vulnerable species and populations, and not on a theoretical risk assessment approach, which determines how much risk to the lives of others, and other organisms, is acceptable to those who theorize about the potential impacts of an action.

INFORMATION and FACTS IGNORED

Shocking to many is how much information these agencies have been given for years about the dangers of the use of pesticides, and abundant alternatives, but also that their plans for, and execution already, of tree felling is actually a "native plant restoration" project, masked as a wildfire prevention project. Almost 6 years ago we were challenging the city of Oakland over what was very publicly being touted as a "native plant restoration" project alongside the more formal 'wildfire prevention project' titling, pointing out the irony that, using pesticides in Sausal Creek or other hills areas would in fact serve to kill off the web of mycorrhizal fungi which nourish native plants and are an essential part of healthy soil which supports healthy vegetation. Pesticides damage immune systems of all biological beings. In spite of this fact, the city councilwoman, Jean Quan, and Friends of Sausal Creek, continued to push for pesticide use in the creek and on the 1,023 acres the city oversees in the hills, being actively pushed by UC's Tom Klatt and EBRPD's Nancy Brownfield, under whose tenure EBRPD increased use of pesticides, even taking into consideration acreage added over the years.

ENDANGERED SPECIES in the HILLS

We countered that in fact there are endangered species in the hills, both animal and vegetation and that, pesticides would endanger them. Finally, the city attorney said to us, "Okay, you got us. This does fall under CEQA (the California Environmental Quality Act)." As we continued to attempt to follow up, to make sure plans were not continuing without formal environmental review, including more public, advertised hearings, we were stonewalled. No one contacted at city offices would talk. Later we discovered that apparently to do an end-run around our expose, the city quietly made an alliance with UC and has plowed ahead with cutting down healthy trees and using pesticides, in spite of the fact of endangered species in the hills. While the endangered Pallid Manzanita, Alameda Whipsnake, Pallid Bat, and the Red-legged Frog all reside in the East Bay Hills we see no significant plans to protect them nor the raptors who depend on tall trees for their survival. Findings of 'no significant impact' abound in the EBRPD's EIR; yet it is scientifically-impossible for their plans to have 'no significant impact' when they plan to down around 500,000 trees, then apply pesticides for the next 13 years. By virtue of the fact of this agency's arrogance in its statement that there would be 'no significant impact', we feel any assertion they make must be questioned and researched for facts. In light of this, their request for FEMA wildfire prevention grant funding should not be provided so that it is available for true emergency wildfire prevention work.

TIMBER HARVEST PLANS ROUTINELY ARE DENIED

It is routine practice to deny timber harvest plans which will lead to clearcutting or deforestation, as UC already has demonstrated by its clearcutting in the Berkeley Hills. The erosion that has been created by UC's actions clearcutting in the Berkeley hills already has caused landslides, and danger to residents and visitors to the hills, while damaging the habitat of many species. Tree removals commonly can lead to erosion of stream banks.

Creek bank stability is the very reason that eucalyptus was planted over 100 years ago in San Leandro Creek, to stop erosion, which it has accomplished handsomely, while providing generous raptor habitat

and the only safe crossing between the hills and flatlands for terrestrial creatures since Highways 580 and 13 were created. Yet, the county has the intention of removing these glorious trees, wrecking the habitat, again with Jean Quan seeming to be behind it. She has met with a creeks group, Friends of San Leandro Creek, making plans for yet another "native plant restoration" project, as she had met behind closed doors with some self-appointed leaders of Friends of Sausal Creek in 2004 to plan to get an exemption to what was called a city "ban" on pesticide use, and as she did in 2012 to plan the removal of nearly 100 year-old redwoods from Sausal Creek, which runs through Dimond Park. Neighbors of Dimond Park had not even been notified of the plan, as most members of FOOSC had not been, until 2 days before the felling was to occur. This plan was based on lies and deceit by some people from FOOSC who were leading the charge, and confused many of the hundreds of people they refer to as FOOSC members. <https://www.facebook.com/SaveOurDimondParkTrees?>

OAKLAND MISLEADS

Look at the city's website and you see talk of sustainability and environmental health, and the old pesticide industry line, "best management practices". The words 'pesticides' and 'herbicides' are nowhere to be seen. It would appear the city continues to try to pull the wool over people's eyes as in spite of having what the city attorney likes to call a 'ban' on pesticide use by the city, it uses herbicides citywide on medians, and in some parks, such as on the paths within a few feet of Children's Fairyland, and along narrow roads in the hills on Joaquin Miller Road, among others. In addition, subcontractors use pesticides without oversight by the city, as acknowledged to us by Noel Gallo early in 2005. This results in people not being able easily or accurately to track pesticide use in the city associated with city use as county agricultural records for the city's use do not reflect the contractors' or subcontractors' use, and records for contractors and subcontractors do not have to specify as clearly what products they are using where and when, or in what amounts.

The Oakland city people behind plans to remove eucalyptus (and Redwoods) seem to miss the irony of the city Office of Parks and Recreation boasting photos in their marketing materials showcasing eucalyptus (and Redwoods), probably because most people agree it is beautiful, and are acclimated to eucalyptus surrounding us in the hills and creek areas and all around the Bay Area.

UC ACQUIRES MONEY FROM PESTICIDE COMPANIES

People would like to believe that a public university system will be devoted to seeking truth in science. UC has contracts with pesticide companies such as Novartis and Syngenta, Dow, Bayer, and Monsanto. Suffice it to say, UC is not objective; it receives masses of money directly and indirectly from pesticide companies so of course it will push pesticides. At the same time, UC has been clearcutting areas of the East Bay Hills and we have pointed out that the reason UC may have set its sights so aggressively on Claremont Canyon's trees is that to get rid of them now clears the way more easily for their Lawrence Berkeley Lab extensions to proceed without getting bogged down later in the EIR process around: trees. UC seems to have a stronghold over the city of Berkeley but it also is apparent that, that stronghold is acquiring breadth with passing time. Oakland has latched on, and a series of agencies with oversight of one area or another in the hills (eg. EBMUD and PG&E) seem to tag along fairly quietly with whatever UC asserts.

EBRPD DISAPPOINTS, CONFUSES, and IGNORES

EBRPD is expected to be acting in the public and environment's best interest in work it does in the regional park system and, indeed, its union employees sometimes have taken public stands in support of worker and visitor park safety, such as their strong resolution opposing the Light Brown Apple Moth pesticides program. See resolution:

["http://www.dontspraycalifornia.org/AFSCME%202428%20resolution.pdf"](http://www.dontspraycalifornia.org/AFSCME%202428%20resolution.pdf)

<http://www.dontspraycalifornia.org/AFSCME%202428%20resolution.pdf>. Our experience with the union and park rangers throughout the park system is frustration, almost uniformly, with Nancy Brownfield, at the center of controversy, who had a misleading title of "Integrated Pest Management Specialist". Ms. Brownfield, now deceased of cancer, as we were told by a former EBRPD worker, pushed pesticide use, to the chagrin of many of the workers who understand that visitors, wildlife, vegetation, soil, and they, are being endangered. They want money put into hiring more workers, not paying for chemicals. In fact, under her tenure pesticide use increased, as we had noted in 2005, and as is noted in this dEIS.

To make matters worse, EBRPD has jumped headlong into the Spartina Project which uses pesticides in efforts to eradicate cordgrass in the Bay (brought in originally by the military). As would be expected,

the state and federally-listed California Clapper Rail population has significantly decreased. When reading minutes of the EBRPD's Board's September 7, 2010 meeting, one might want to assume that this is due simply to the removal of habitat. But for more insight into the chemicals the Rails are ingesting, inhaling, and absorbing, please see "<http://www.eastbaypesticidealert.org/spartina.html>" "<http://www.eastbaypesticidealert.org/spartina.html>". You might note that Imazapyr is being used by UC in the hills and RoundUp is being used by EBRPD and Oakland. Still, the plan is to continue this pesticide use around the Bay.

WHAT IS NATIVE? WHO IS BEHIND 'INVASIVE SPECIES COUNCILS'?

We have seen repeatedly that 'native plant restoration' projects are being masqueraded as wildfire prevention projects and more insidiously, taxpayer self-assessments along with tax-supplied grants such as the FEMA grants requested by these agencies, are sold to taxpayers as necessary for wildfire safety. These scare tactics are unethical and, worse, will lead to an unwillingness in the future to supply money readily, when it might actually be needed, to fund manual removal of excess understory or grasslands vegetation, some of it ironically native and quite flammable as wildfire historically blazed through these hills bursting seedpods and covering them in what amounted to rich compost. These scare tactics could lead, therefore, to more fire danger in the future as threats continue to build due to mismanagement.

UC, EBRPD, and the city of Oakland have seemed fixated on getting rid of what they refer to as non-native plants. Invasion Biologists have differing scientific opinions on when species have reached acclimation, at which point even trying to remove them can pose biological danger. Acclimation and naturalization are normal evolutionary processes and have resulted in monarch butterflies overwintering in the East Bay Hills, where they might not if most or all of the eucalyptus were cut down.

David Theodoropoulos, an Invasion Biologist who is deeply critical of his field, and points to the historic involvement of the pesticide industry in establishing invasive species councils to do their bidding "<http://www.jlHUDSONSEEDS.NET/NativesVsExotics.htm>" "<http://www.jlHUDSONSEEDS.NET/NativesVsExotics.htm>"), shows photos of eucalyptus in the Oakland Hills during the 1991 fire, in areas where the understory had been kept down "<http://video.google.com/videoplay?docid=543758534586424176>" "<http://video.google.com/videoplay?docid=543758534586424176>"). The fire burnt out before igniting the trees in those areas. Just as we see with many trees in the neighborhood of the San Bruno PG&E gas pipeline explosion and resulting inferno. Many living trees surround burnt homes.

Where agencies mismanaged in the East Bay Hills and failed to cut back the understory since it hadn't been properly attended as an Urban-Wildlands interface or a Residential-Wildlands interface, the hills inferno flourished. But many eucalyptus trees acted as windbreaks that hot, windy day, and the moist, cool forest floor around these trees reduced the potential for ignition in some areas. What we see in photos of the 2003 Scripps Ranch fire in Southern California is classic; homes full of gas lines and gas appliances, and cars, exploded, completely surrounded by massive, unaffected eucalyptus trees. See photos: "<http://graphics7.nytimes.com/images/2003/10/27/national/28fire.l.jpg>" "<http://graphics7.nytimes.com/images/2003/10/27/national/28fire.l.jpg>" and: "<http://www.scrippsrancho.org/special/Fire2003/Ward/MVC-002F.jpg>" "<http://www.scrippsrancho.org/special/Fire2003/Ward/MVC-002F.jpg>". The first shows a whole cul-de-sac of houses and cars exploded, completely surrounded by healthy eucalyptus, the second shows exploded cars and only a chimney of a house left (much like Broadway Terrace in '91), many healthy eucalyptus trees right there, unscathed.

WHO PROFITS IN THIS ATTACK ON "NON-NATIVES"?

The question is, who profits by manufacturing an emergency around getting rid of anything non-native? Pesticide companies, for one, and in the case of felling trees, there are many contracts to be written, much money changing hands already as consultants are sent in to do their studies and estimates, and years of work and money are assured if final decisions reflect taking down a million or more trees, some of the lungs of the earth.

A history of mismanagement is no excuse for allowing further mismanagement, unleashing potent toxins upon us.

Landscape aesthetics are in the eye of the beholder and forcing nature into the aesthetic preferences of

a few comes at the expense of ecological health. Continued widespread removal of trees is leading to mudslides in the hills, removing whole sections of habitat. As important, pesticides used on and around the stumps remain in the area and translocate. Innocent pedestrians or bicycle riders in some areas walk or ride through pesticide residues while inhaling residual drift (indoors, insecticides can take two weeks to stop floating around and begin to settle down onto furniture and floors, stuffed animals and dishes—source: Designer Poisons, Marion Moses, MD). People track them and spray them around further as they walk, jog, or bike. Wildlife in the area is exposed through inhalation, absorption and ingestion. One of our considerable concerns is that in the Bay Area we have immigrant populations from Asia who use plants found in the hills medicinally as well as for food (blackberry shoots being popular in some cuisines), and people practicing Western Herbalism frequently gather herbs in the hills. They can unwittingly be sickened ironically as they are gathering Horsetail to aid respiratory distress, or other herbs for other medicinal purposes.

This plan brings to mind the county of Alameda's plan to remove all the century-old Eucalypts along San Leandro Creek, in fact the only wild corridor for miles which links the flatlands and hills. As another story of deception has been revealed, tree by tree, parcel by parcel, we find that the purpose of the county's removal plans is, once again, according to the county's chief arborist, Jim Brown, a "native restoration project". The grand plan was to quickly clearcut three areas to provide the easiest access/removal areas and spend the next few years chopping down one tree after another, dragging them up the creek further to ruin remaining habitat, then nicely (maybe) replanting some trees. Among those considered by the county is willow, a fine choice if you want to end up with no water at all in the creek. Oh, yes, and pesticide use on the banks of the creek, too, though no one has yet revealed which products after months of requests. And when you read the fine print on their documents, you see that a primary "Reason for Action" to remove the trees again and again is listed as: Tree will require substantial on-going resources to evaluate and maintain.

Money, time, the hassle factor. Not that they don't have money. In fact, the county hired a "very expensive" (according to a county person) p.r. firm, the same one the state hired to push their Light Brown Apple Moth pesticides program, and an arborist who has created her own ranking system for tree danger, at odds with that used by many certified arborists. One has to wonder why the county would want to rely on a new system while the arborists with her company keep saying they can't guarantee anything. Not that we are expecting many guarantees when dealing with nature. But there are some guarantees in this situation in the hills and the SL creek: down trees and you lose oxygen and gain carbon, increasing the numbers of people who will be sickened. Change the environment so drastically by removing these trees and you will have a hotter environment, not able to support life which has acclimated over a century. Use pesticides and you will ruin soil and water health and endanger people, wildlife, pets and insects.

WHAT WOULD AN HONEST LOGGER SAY ABOUT THESE PLANS?

As the author of this writing was at work assembling notes for this response she contacted a gentleman who comes from a logging family from the Central Coast area to hear his response to the general plans by these agencies. His response was swift and clear. He pointed out that in spite of herbicides which might be used, stumps are open wounds, attractive to insects and more so as they degrade. They are prone to disease which then endangers the trees nearby left standing. He put it this way, thinking of clearcutting and replants he's seen in the logging world, "In the infant stage replants are attacked by insects gathering at the open wounds of cut stumps. They are still weak in their infant stages, and more so if exposed to herbicides. Disease can spread easily in that environment, building on the stronghold on a stump. The secondary militia creates infection on many standing trees, a disease ward for any trees in the area." He went on to give more perspective. "If there's 300 tree stumps in one area and 500 are nearby, if there are infantile trees nearby many are likely to become diseased. What can happen to the rest of the forest of 2000 surrounding that area? What are the chances of survival?"

CARBON SEQUESTRATION; WHY SHOULD PEOPLE OPPOSED TO PESTICIDE USE CARE?

The East Bay is home to a population considered to have 16.3% already somewhere on the continuum of chemically-sensitive. Those of us with Multiple Chemical Sensitivity (MCS), or concerned about becoming victims of this debilitating chronic disease which can bring with it myriad life-threatening problems such as high blood sugar, high blood pressure, high cholesterol, heart problems, kidney disease, asthma, and hormonal disruption and dysfunction, are concerned about the effects of any quickly shifting climate changes on either global levels or local levels, shifts which can completely change the ecology of an area and put our bodies, already physiologically-challenged, at increased risk

for health problems. We have co-evolved over the past few generations in the Bay Area with hills covered in oxygen-producing, carbon-sequestering trees. To wholesale remove, and to use pesticides in addition, killing off most living things in their midst, creates dramatic imbalance in an already rapidly-changing world. These trees are lungs for us. They have taken in carbon and given us oxygen. We cannot lose this oxygen and on top of it face yet more carbon, made even more stark in these plans which in addition to felling trees, and killing many species of vegetation, includes chemical toxins which also would kill off many kinds of wildlife, directly and indirectly.

It is ironic to know that UCSF, home of an acclaimed medical school, is behind plans to remove all the eucalyptus from Mt. Sutro in San Francisco. We were busy assembling our response to UCSF's requests for a FEMA grant for what was being called a 'wildfire prevention project' but was actually another 'native plant restoration' project. Happily, before we could send in our response, we got the good news that FEMA had realized the grant request was not legitimate and refused to grant it this money to UCSF without an EIR. It is ironic that the home of a medical school is not willing to go through that health and environmental process, and instead intends to march ahead, funding the felling of trees itself. A foggy mountain in the city, providing so much needed oxygen, to be decimated by UCSF.

OUR RECOMMENDATIONS

We want FEMA to be clear that these agencies have had information in their hands for many years clarifying dangers of pesticides and offering multiple standard alternatives, easily applied with the funds available through various pools of tax monies in addition to the regular streams of funding for maintenance. They have failed in their most basic maintenance duties.

Too, we want FEMA to remember that there is no emergency here other than the lack of proper maintenance over decades by agencies with lack of competence or interest. That is no reason to grant emergency monies which need to be available for emergencies that arise unexpectedly. What's going on here is entirely predictable and reversible with common sense oversight. FEMA's wildfire prevention project granting stream should not be used to make up for incompetence if it will result in that incompetence being allowed to remain, and continue, resulting in future wildfire dangers being created.

These agencies have been expected by people living in the hills to do reasonable understory management, a standard expectation in an Urban-Wildland interface. They have failed to act reasonably, and sensibly, to safeguard people and now are ready to release massive amounts of carbon into the environment, completely change habitats in the hills, and try to create native plant nurseries in pesticide-laden soils. The irony is that they seem completely unaware that many native plants which used to thrive in the East Bay Hills are highly flammable. Perhaps it's time to stop assuming that if something is called native it's preferable, and if it's called non-native it's bad. Time to move beyond that severely limited thinking.

Our climate has changed drastically, quickly, and we cannot assume that pulling down a million eucalyptus, acacia, and monterey pine, and planting native plants, or waiting for vegetation to fill in, will mean we will end up with anything actually resembling the East Bay Hills of a century ago. And as one man said some time ago about 'native plant restoration' projects, "Looks a lot like gardening to me." An ongoing maintenance project, exactly what these agencies all seem to want to avoid: maintenance.

What do you teach a toddler if you give her sweets? Don't fill up on healthy foods; leave room for the sugar.

What do you teach these agencies if you give them these FEMA grants? Don't bother with the regular maintenance with which you are charged; let it go and you'll get the spoils.

These agencies' histories of action have violated at least two of the three parameters of FEMA's Wildfire Mitigation Policy, MRR-2-08-1, in their not doing reasonable maintenance to create defensible space around homes, and their not limiting hazardous fuels, in fact increasing fuels by pesticing and leaving behind dried out vegetation, as described above.

East Bay Pesticide Alert asks that you deny UC; UCRPD; and Oakland the FEMA 'wildfire prevention project' grants they have requested based on the above points, and on the fact that these are 'native plant restoration' projects being masqueraded as 'wildfire prevention projects', an old game it seems we

must keep exposing. EBPA points out that, in this case FEMA should choose the No Action Alternative.

Thank you for your attention to this matter.

Sincerely,

Maxina Ventura
Chronic Effects Researcher
East Bay Pesticide Alert

additional quotes regarding UC:

<http://www.dontspraycalifornia.org/gwss/031901santabarbara.htm>

SANTA BARBARA COUNTY 3/19/01

805-681-5600 fax: 805-661-5603

263 Camino Del Remedio, Santa Barbara 93110

I spoke with Ag. Commissioner, William Gillette

<<M: I brought up Sudden Oak Death Syndrome and how by following media in the Bay Area and a San Jose Mercury News spread of a couple month ago, it is apparent that the State's approach is the same: yell emergency and push chemicals.

W: That's coming out of UC, much to my dismay. I'm perfectly OK taking the rap for the county or state when we make a mistake. I've been vocal about that... it's carefully written. They say materials to use but say they don't know if they are effective or how to use them! It's just wrong. It's a classic... we have a problem...people want answers now. We jump the gun to take the pressure off but can't put out info that way. Yeah, the pattern is pretty similar. That one's coming from the UC.

If you want to be really cynical, this fight (around the GWSS) involves a lot of job security.

The key is buying enough time.>>

<http://www.dontspraycalifornia.org/gwss/everettdietrich3-19.htm>

Everett Dietrich of Rincon Vitova Insectiary. Mentor of Kate Burroughs, 80 yrs old, going strong, 50 years in the biocontrol business. He worked 15 years for UC in the Department of Biological Controls.

On aphids.*** He said, laughing, You can quote me on this, I don't work for the University anymore! But with all the money going into this, they're gonna have to justify what they have done."

He said there are a number of contracts out to grow these parasites, but he hasn't found any successful way of doing it. It is not cost-effective unless you have a steady market.

*** If I grow gwss parasites, it will go away by itself and I will have no market.

The other insectiaries [?that are growing the wasps??] have a subsidiary company that has Pesticide Control Advisors, the find a spot where every insect they grow can be sold. As long as you have a place to put every insect.

The University needs money, so their policy is "Make as big a deal of it as you can"



Peter Benenson

1442 A Walnut Street, # 231 · Berkeley, CA · 94709

TRANSMITTED BY FAX – ORIGINAL FOLLOWS BY USPS

June 17, 2013

Federal Energy Management Agency, Region IX
P.O. Box 72379
Oakland, CA 94612-8579

Re: Hazardous Fire Risk Reduction Draft Environmental Impact Statement, East Bay Hills, California,
dated April 2013

To whom it may concern:

There are valid reasons for removal of non-native trees to reduce hazardous fire risk. However, I object to what the aftermath of the above-referenced project would be – denuded hills partially covered with logs and chips, 2600 feet of additional “temporary” access roads, potential runoff of toxic herbicides, and soil erosion. As currently described in the Draft Environmental Impact Statement (DEIS), for its stated objective the project appears too large in terms of the number of trees that would be cut. If a tree-removal project is implemented in any form, the following measures also should be implemented to keep all stakeholders informed and to mitigate the negative effects that could ensue.

NOTICE

Notice so far has been inadequate even if it complied with legal requirements. The East Bay hills are used by thousands of people for hiking, running, bicycling, swimming, boating, horseback riding, and picnics. They do not scan the Federal Register on a daily basis to ascertain whether federal, state, and/or local entities are proposing to cut significant populations of trees in areas where they recreate.

Henceforth, notice regarding all aspects of the project must be publicized in widely-read local and regional media, both online and in print. Notice must cover all aspects of the project, for example, but not limited to, key dates such as commencement of important stages and/or operations, project changes in scope and methods, response deadlines, availability of documents, discoveries of adverse impacts, etc.

On the basis of inadequate notice alone, the project should not move forward until adequate notice is given so that all interested parties have time to respond to the DEIS.

TREE REMOVAL

Protect bay laurel. Bay laurel trees are closely interspersed with eucalyptus at the higher elevations. They grow on west and some south slopes in addition to growing in riparian habitat, strictly defined. Adequate care must be taken during cutting and removal of eucalyptus to protect and preserve even smaller bay laurel in addition to specimen trees. This will help to mitigate the visual impact of tree removal as well as to reduce soil erosion. Currently the DEIS does not account for this degree of care.

Raise funds to replant. Prior to tree cutting, identify millers and buyers (ideally the same entities) for the Monterey pine and acacia. Isolate the proceeds from sale of the lumber, and use it exclusively for purchase and replanting native species of trees.

HERBICIDE SPRAYING

Monitor for runoff, and mitigate if it occurs. Despite implementation of best practices, runoff of herbicides may occur, and their negative effects may not appear immediately. Prior to spraying Garlon or any other herbicide, design measures to mitigate the effects of runoff if it occurs. Install long-term monitoring devices to monitor the sites that are sprayed for runoff of toxic residues. Implement the mitigation measures if runoff is detected.

TEMPORARY ROAD IMPROVEMENT AND/OR CONSTRUCTION


Make them truly temporary. After the roads are no longer needed for the project, replace the soil that was removed. Fill in the cuts in the hillsides and re-grade them to restore the original slopes. Re-plant with shrub or trees as appropriate to the locations. This will mitigate the negative visual impacts of the roads and will reduce erosion caused by road construction.

EROSION MITIGATION

Remove logs that were left to prevent erosion; do this after grass and brush grow back. While fallen logs are a natural phenomenon in a forested environment, they are not on un-forested slopes. Removal of logs must be balanced by the risk of damaging the growth that has occurred and disturbing habitat that some logs may have provided.

The negative impacts noted arise in part from the project's extensive scope – the cutting of 54,000 to 85,000 trees. Significant reduction of the scope would reduce the impacts, but regardless of the final number of trees cut, the mitigation measures described above must be implemented carefully to reduce the project's negative impacts.

Sincerely,



Peter Benenson, Ph.D.

From: [Pamela Berkowitz](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: EIS Deforesting Project
Date: Wednesday, May 29, 2013 10:12:07 PM

Dear FEMA representative,

I URGE you not to pass the the current draft of EIS. Please help save over a half a million of our tallest and oldest exotic trees that are planned for killing in the East Bay hills parks in the name of fire prevention. In reality, this planned environmental devastation will make the East Bay far more vulnerable to fires.

1. The proposed plan of eliminating exotic trees will cause more wildfire danger, not less, by leaving tons of dead wood on the ground, by causing more flammable grasslands, which is where fires start, by eliminating shade and fog drip which moistens the forest floor, by destroying the windbreak barriers, and by killing the trees who help prevent fires. There are much cheaper ways of reducing fire danger.
2. Many native trees are extremely flammable, but eucalyptus are NOT a fire hazard, and have been demonstrated to help forests prevent and contain fires. (A member of the Hills Conservation Network testified at the first FEMA public comment meeting that the 1991 fire came close to her house, but stopped at three tall eucalyptus trees up the street that did not ignite and may have blocked the fire and the wind. She also told of a neighbor's tall eucalyptus and redwood that grew beside each other. The redwood ignited and burned to the ground, but the eucalyptus did not ignite, even though it was cut down after the fire.)
3. The eco-system is already changed to where native animals rely on, need, and often prefer non-native trees for survival. Killing those trees as well as the horrific use of machinery will destroy the land and kill millions of native animals, including some endangered, who will die as a result of being deprived of their food and homes.
4. The clear-cutting will destroy the East Bay forests from Richmond and El Sobrante through Berkeley and Oakland to Castro Valley. Almost 600 acres are proposed, so that some parks will have almost no trees left.
5. Ten years of using thousands of gallons of toxic, dangerous herbicides in the parks are planned, which will cause cancer and other illnesses, as well as killing native animals and making the parks unsafe to use.
6. Without the tall trees gathering moisture from fog, there will be less water for all the plants and animals and increase fire danger.
7. The project involves massive burning, which will add to air pollution and global warming, and could spark wildfires.
8. The clear-cutting of hundreds of thousands of trees will eliminate the shade canopy which people need when going to parks, as well as destroying the beauty of the parks.

When our trees are gone, so will the animals and our parks be gone. WHY is desperately needed money being spend on such a disaster?

Sincerely,
Pamela Berkowitz
1534 Fairview Street, Apt. B
Berkeley, CA 94703

From: [Betsy Bigelow-Teller](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Tree removal in Berkeley and Oakland
Date: Tuesday, May 21, 2013 5:07:07 PM

To Whom It May Concern,

I am writing to register my strong opposition to the current FEMA plan to remove thousands of trees in the Berkeley and Oakland hills, then use herbicide to inhibit regrowth.

While I agree with selective removal of non-native trees, the plan as it has been shared with the public inadequately addresses the future of the deforested land.

- Was the environmental impact review performed starting in 2010 objective if it was conducted by those who wish to remove the trees?
- How will the herbicide be kept contained and out of the Bay once the rains return and there is runoff?
- Why, if the trees have been there for decades is there such an urgent need to remove them now?
- Is there no more moderate tree removal option?

This plan will have a huge impact on the surrounding human and wildlife population, and should receive a more thorough public hearing before going forward.

Sincerely,

Betsy Bigelow-Teller
Berkeley, CA

Carolyn Blair
San Francisco Tree Council

June 10, 2013

Federal Emergency Management Agency
P.O. Box 72379
Oakland, CA 94612-8579.



RE: Public Comment on Draft Environmental Impact Statement for
Hazardous Fire Risk Reduction, East Bay Hills, California

I am the retired Executive Director of the San Francisco Tree Council and former member of the City and County of San Francisco's Urban Forestry Council. In that capacity, I have witnessed many similar projects in the San Francisco Bay Area over the past 15 years.

All these projects have in common that they destroy non-native trees. These projects have used different strategies to accomplish this goal. In the case of the "Hazardous Fire Risk Reduction" project in the East Bay Hills, the strategy is to claim that destroying tens of thousands of non-native trees will reduce fire hazard. This particular strategy was necessary to apply for funding from the Federal Emergency Management Agency because its funding is available only to reduce catastrophic hazard or to restore communities after a catastrophe.

This project will not reduce fire hazard. Rather it will increase fire hazard by promoting a more flammable landscape of grass and shrubs, removing shade and eliminating fog drip that keeps the ground cool and moist, by destroying the windbreak that stops the wind driven fires of the Bay Area, and by distributing tons of dead wood on the ground.

In addition to increasing fire hazard, this project will damage the environment because it will require huge amounts of herbicide to prevent the trees from resprouting. The stumps of the trees will be sprayed with herbicide which will be taken up by the roots of the trees and distributed throughout the soil, damaging the trees and vegetation that remain.

The trees that will be destroyed are performing valuable ecological functions such as storing tons of carbon that will be released into the atmosphere as carbon dioxide as the wood decays on the ground. California law prohibits such an enormous increase in the release of the greenhouse gases that are causing climate change without mitigation which is not provided by this project.

The native plant movement has demanded the destruction of tens of thousands of non-native trees on public lands in the San Francisco Bay Area in the past 15 years. These projects have a cumulative impact on the environment that has not been adequately evaluated by the DEIS.

The "no project" alternative is the only legal alternative available to FEMA. Funding of this project would violate FEMA's mission as well as damage the environment in violation of California law.

Thank you for your consideration.

Sincerely,

Carolyn Blair
2310 Powell Street, #305
San Francisco, CA 94133
(415) 982-8793

June 4, 2013

East Bay Hills Hazardous Fire Risk Reduction Project
P.O. Box 72379
Oakland, CA 94612-8579



Hello,

I am writing to adamantly request you reconsider the proposed removal of some 85,000 trees from East Bay communities. My reasons for opposing it are many, some of which are:

1. Surely I do not have to remind the powers that be that one of the few mitigators of carbon that remain with us is trees. Wangari Matthai, my mentor, received the 2004 Nobel Peace Prize for her work on the planting of trees globally in this interest and would be appalled at this plan which does just the opposite.
2. At Wildcare Wildlife Hospital, we serve over 8,000 patients brought to us who are victims of human thoughtless and greed. I invite anyone to visit the hospital or any other wildlife facility, speak with professionals and inform themselves of the unspeakable destruction this plan will impose. Removing 85,000 trees abruptly will leave untold thousands of wild animals with whom we share this landscape homeless, those homes removed forever. In addition, we are in a migratory path with migrating birds depending on established landscapes.
3. Few informed citizens will feel comfortable with a plan to douse our communities with herbicides particularly at the scale recommended. Will you be living there with your children and domestic animals while this is being done for years?

Thank you for reconsidering this and for doing the right thing for all concerned. Return to the drawing board and present a plan for fire remediation that considers all parties affected please.

Respectfully,

A handwritten signature in blue ink that reads "Janine B" with a long, sweeping underline.

Janine Boneparth
10 Liberty Dock
Sausalito, CA 94965
Wildcare Wildlife Hospital
San Rafael, CA 94901

From: [Ralph Boniello](#)
To: [EBH-EIS-FEMA-RIX](#)
Cc: inquiries@hillsconservationnetwork.org
Subject: Claremont & Strawberry Canyon tree removal
Date: Monday, June 17, 2013 9:52:33 AM

I am writing in strong support of removal of the the non-native and fire prone vegetation in Claremont and Strawberry Canyons.

I have a Ph.D. on ecology with a focus on forestry and plant biology, and have been involved in invasive plant removal in our parks, open spaces, and wildlands for more than a decade. I recognize that it takes a concerted effort to get rid of invasive species and maintain the site afterwards. I see this project as beneficial to our native flora and fauna and as beneficial to residents in the Oakland-Berkeley Hills who are at risk of catastrophic wildfire.

I have concerns about herbicide application on the project site, yet I recognize it as a necessary component to long-term site goals. Herbicide applications should be limited to stump or sprout painting.

The portion of the plan that I have the most concern over is the plan to spread up to 2-feet of mulch over the project area. I understand that recruitment of new unwanted individuals from the seed bank on site is a problem. However, the nationwide Joint Fire Science fire-fire surrogate study that compared fuel treatments (including mastication) clearly found that fire severity is increased by leaving these mulched fuels on the ground. This research supports similar Forest Service findings that have looked at the effects of fuel treatments on naturally occurring wildfire.

So while I support the removal of the non-native trees, I don't support mulching and leaving the fuels on-site. By leaving the mulch on site there is no actual fuel reduction- it just gets compressed into a smaller area where it will burn more intensely. In addition, this is litter that is composed of flammable oils and is meant to burn. This mulch should be removed from the project site, or at the minimum should not be applied as thickly. I would look to fire ecologists for a better understanding of what constitutes a safe level of mulch on the project site.

Sincerely,

Ralph Boniello

From: [Marilyn Borchardt](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Proposed cut of trees in Strawberry and Claremont Canyons of Berkeley/Oakland hills
Date: Friday, May 17, 2013 8:09:23 AM

I oppose the use of Roundup and other herbicides that will enter our watershed. This is not healthy for humans nor animals. Cut the trees, mulch heavily and then keep cutting as sprouts emerge. Perhaps various public and private organizations can adopt sections of the hills to perform this routine cutting of the sprouts.

Thank you for considering this request.

Marilyn Borchardt
6035 Ocean View Dr
Oakland, CA. 94618

From: [Rk Bose](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Comment on East Bay Hills Draft EIS
Date: Sunday, June 16, 2013 8:00:37 AM

Dear FEMA,

This is to comment on the East Bay Hills EIS.

Please do not fund a futile Native Plant restoration project that will only increase the fire hazard by: destroying the wind-break; converting living trees into dead fuel on the ground; reducing landscape moisture from fog drip during the summer; and encouraging the growth of more-flammable plants.

It will also use thousands of gallons of toxic pesticides on steep hillsides where they can get into the watershed. It will release carbon emissions on a huge scale. This project is not only environmentally destructive, it is a huge waste of funds that should be used to actually reduce hazards, not increase them.

The only rational alternative is the No Project alternative.

A LOSING PROPOSITION

This project will be a no-win proposition for everybody. Not only will it increase the fire hazard by substituting a drier and windier landscape with more-flammable plants, it will not produce the pristine native landscape that the sponsors seek.

The Native Plant enthusiasts who hope that Native Plants and trees will recolonize the treated areas will be disappointed. There's no plan to replant or to garden those areas; the only tools are a deep mulch of eucalyptus chips and non-selective pesticides. The most likely plant to move into such areas would be broom – which is non-native and considered invasive because it can actually deal with the kind of conditions that will result.

The environment will suffer from the loss of carbon storage and pollution control, not to mention the beauty of the trees. Actually, most of the residents of the Bay Area.

FEMA could use these funds for other projects that actually reduce, not increase, hazards.

The worst of it is that it is essentially irreversible. If the planners realize that most of what the opponents say is true, they cannot grow back trees that took decades to become what they are now. They cannot sequester the carbon they've released. They cannot cure the people whose health has been adversely affected by pesticides. All they can do is declare victory and move on.

Is there a potential win for anyone? Well, maybe the contractors and the pesticides suppliers.

And UC Berkeley, whose Long Range Development Plan calls for building 100,000 square feet of additional space in the hills, would undoubtedly find it convenient to have the tree removal funded by FEMA.

PROBLEMS WITH THE PROJECT AND THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

This plan will convert living trees full of moisture into fuel – dead wood and wood chips on the ground. These are much more flammable than any living tree. In fact, even one of the research papers the EIS quotes says as much: "Sites where the activity fuels piles had not been burned or where they had been masticated (mechanically chipped into small pieces and spread over the treatment area) were excluded from the study because research suggests these additional fuels increase fire severity." (Malcolm North and Matthew Hurteau, "High-severity wildfire effects on carbon stocks and emissions in fuels treated

and untreated forest,” Forest Ecology and Management 261 (2011))

The wood chips could take up to 20 years to decompose. According to the EIS, they have a “half-life” of 5 years, meaning that half of it will be gone in five years. A pile that’s 2 feet high would be 12 inches deep in 5 years, and 6 inches deep in 10 years – leaving a fire hazard there for decades. And there’s also the potential for subsurface smoldering fires that can burst out under the right conditions.

Wind speeds will rise since the wind breaks provided by the trees would be gone. Fires in the East Bay are wind-driven fires, and eucalyptus and other tall trees actually fight fire by breaking the wind-flow. Even the EPA recommended preserving large and tall trees in place (according to Appendix K2 of the EIS).

The replacement landscape will be more flammable. Removing trees will encourage grasses and shrubs, making for a more flammable landscape of faster-moving fires that can reach structures more quickly. The forest shade tends to inhibit the growth of these plants. The plans intend to encourage the growth of native plants – but doesn’t provide for planting or tending them. They assume that the existing seed banks and seeds from adjacent areas will grow there. Actually, it’s more likely that broom and other fast-growing non-native species will take over. When these dry out, they are much more flammable than the trees. In any case, the native chapparal is also very flammable.

The loss of shade and the moisture harvested from the fog will make for a drier, more fire-prone landscape. The EIS suggests that the harvested moisture is compensated by the trees using moisture from rain, so the net amount of water is the same. This is just silly: the fog comes in California’s dry season, and provides additional moisture at a time when the landscape is dry and thus lessens flammability. During the rains, the landscape is green and not flammable.

If some of this acreage does actually become oak-bay woodlands, as the land managers hope, there’s another problem: Sudden oak death, which is spreading through California and could provide dead trees as fuel. The EIS ignores this threat entirely.

The Draft EIS significantly understates the effect on carbon sequestration. The trees will no longer store carbon; instead, they will be releasing thousands of tons of it into the atmosphere. But the EIS ignores the carbon stored in the branches, leaves, and roots of the felled trees, and in the soil. They also miscalculate the amount of carbon that will be released in the EBRPD section of the plan. They may have ignored 80% of the actual carbon emissions caused by the project.

The EIS fails to consider the following: Thousands of gallons of toxic herbicides will be spread over the East Bay; Prescribed burns will further affect air quality, and could get away and cause wildfires and serious damage; Erosion and landslides could occur on steep slopes when the tree roots no longer stabilize the slopes; Increased wind speeds with the loss of wind-breaks will affect quality of life, and likely cause the wind-throw of non-targeted trees.

Altogether it is difficult to see how these projects could actually benefit any Bay Area resident.

Sincerely,

Rupa Bose,

63 Forest Knolls Drive, San Francisco CA 94131

From: [Summer Brenner](#)
To: [EBH-EIS-FEMA-RIX](#)
Cc: inquiries@hillsconservationnetwork.org
Subject: FEMA's Proposal for Fire Risk Reduction
Date: Thursday, June 13, 2013 10:29:25 PM

June 13, 2013

To FEMA:

The citizens of the East Bay are very concerned about fire in the hills. Of equal concern is FEMA's Proposal for Fire Risk Reduction: logging 80,000 trees, spreading wood chips, and applying highly toxic herbicides. It's radical surgery! The equivalent of slash and burn techniques that devastate landscapes for generations.

Instead, FEMA's millions of dollars should be spent on gentler methods that respect the area's entire ecology.

The loss of tens of thousands of large trees means the loss of shade. Shade works to inhibit the growth of flammable grasses that can easily ignite and cause fires. Massive tree removal also releases huge amounts of CO₂, adding to greenhouse gases and contributing to Climate Change. The fog drip which nourishes plants and replenishes the water table would be severely curtailed, creating further drought, desertification, erosion and increasing the risk of landslides. The impact on fauna habitat from massive tree removal and woodchips is devastating.

Please reconsider your Draft Environmental Impact Statement by keeping in mind these grave concerns.

Sincerely yours,
Summer Brenner

From: [Mary Ann Brewin](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: FEMA EIS draft for UC, Oakland and EBRPD
Date: Monday, June 17, 2013 2:35:00 AM

To Whom It May Concern,

I think that the FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the East Bay hills should be retracted and reworked due to the following considerations:

---The Greenhouse Gas implications of cutting down 100,000 tall trees.

--- The initial amount of herbicides to be used is unacceptable, and would probably need to continue as hemlock, broom, thistle, and poison oak would emerge as a result of the loss of shade canopy.

--- the possibility that shortly after the projects are completed, the fire danger will increase as more flammable weed/brush and tall grass vegetation takes hold.

--- the potential erosion, mud and landslides which could happen in the first rains after the cutting, and later as logs placed as buffers breakdown.

--- the two-four feet of wood chips to be used as mulch are also a potential fire hazard

--- a provision for continuous vigilance and management to encourage native trees to grow back and to eliminate the growth of invasive non-native plants (Scotch Broom, Himalayan Blackberry etc).

--- the possibility of a slower removal of Eucalyptus and Monterey Pines over several years.

--- this plan may get bogged down in lawsuits and protests, so that the East Bay could actually become more of a fire hazard during that time.

The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

I hope you will consider this.

Thank you,

Mary Ann Brewin
Summer St.
Berkeley, CA 94709

I would like for this plan to be reconsidered to address these concerns:

- too many pesticides being used
- potential landslides in heavy rain
- thick mulch, which can be a fire hazard itself

- how will natives be encouraged? The CA Indians used fire management extensively, and as a result many natives have seeds and growing patterns that require fire or similar stress to be able to sprout. Obviously we have gotten ourselves in a situation where fire management has become dangerous, but whatever management we do will require making sure that natives rather than the invasive non-natives (scotch broom, Himalayan blackberry, etc.) will be growing back. Otherwise we're just back to cut and poison in 10 to 20 years.

- balance between reducing fire load and keeping carbon sequestered. I recognize that this is a hard one, but clear cutting probably is not the answer.

- a plan that will not become hopelessly bogged down in lawsuits and protests, so that the East Bay will actually become less of a fire hazard in a short amount of time.

Thank you for addressing the fire hazard in a balanced, wise way.

Sincerely,

From: crystalmettamega@gmail.com on behalf of [jessica britt](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Berkeley between 700 and 1400 gallons of Round-UP you are not serious -
Date: Friday, May 17, 2013 9:00:53 AM

dear FEMA

this is a horrible plan, if the clear cut must be done - at least use Vinegar instead of Round up, my lungs are already in shock at just the thought -

has no one been reading what is happening to the bee population - there must be other choices

<http://www.agardenforthehouse.com/2011/06/got-weeds-use-vinegar-not-roundup/>

Please consider this deeply

Jessica Britt

--

mega metta

jessica

From: [Caroline Taymor](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Concerns about the proposed fire hazard reduction by cutting trees in the East Bay Hills
Date: Monday, May 20, 2013 9:18:42 AM

To Whom It May Concern,

I'm an Oakland resident. I'm very concerned that the proposed plan to cut down non-native trees, spread the wood chips, and treat the stumps with herbicides will be detrimental for the community. The plan does not include a plan to plant native trees to replace the non-native trees being cut. In China Camp, a similar plan to cut non-natives down to reduce fire hazards was accompanied with a plan to replant trees, and even with the replanting of trees, the hills have stayed mostly bare. Most of the replanted trees did not take. Given the serious threat of Sudden Oak Death in the Bay Area, threatening not only various California Oak species, but also Bay Laurels, Madronas, and recently even some redwoods and firs, destroying trees which provide animal habitats, and prevent erosion without planting natives and making active efforts to replace the removed trees with native plants is faulty. This plan is unacceptable without a serious plan to replant native trees and species to replace the non-natives cut down, and without consideration as to how herbicides might be used most sparingly, if at all.

Sincerely,
Caroline Taymor
Oakland Resident

--

Caroline Taymor
ctaymor@gmail.com
415-302-2416

From: [CeliaSue Hecht](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Stop the deforestation of the Berkeley/Oakland Hills
Date: Monday, June 03, 2013 7:42:42 AM

The current Draft EIS is unacceptable as it will inflict enormous environmental damage, expose the public to thousands of gallons of toxic herbicide, destroy raptor habitats, destabilize steep slopes, and actually increase the risk of hazardous wildfires.

FEMA should retract this EIS and remove those portions of the EIS that call for clear-cutting tall trees. The EIS should instead support a far less destructive methodology that would focus on a "species-neutral" approach, focusing on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires. Killing more than 50,000 trees and poisoning them for up to 10 years will have disastrous effects on this beautiful and healthy ecosystem, and cannot be allowed to happen.

These projects are more likely to **increase the risk of wildfires** than to reduce that risk.

By distributing tons of dead wood onto bare ground

By eliminating shade and fog drip which moistens the forest floor, making ignition more likely

By destroying the windbreak that is a barrier to wind driven fires typical of wildfires in California

By expanding the oak-bay woodland being killed by Sudden Oak Death, thereby adding more dead wood

* These projects will **damage the environment** by releasing hundreds of thousands of tons of carbon dioxide into the atmosphere from the destroyed trees, thereby contributing to climate change.

* These projects will **endanger the public** by dousing our public lands with thousands of gallons of toxic herbicides.

* **Erosion** is likely on steep slopes when the trees are destroyed and their roots are killed with

herbicides.

* **Non-native vegetation** such as broom, thistle, and hemlock are more likely occupants of the unshaded, bared ground than native vegetation which will not be planted by these projects.

* **Prescribed burns** will pollute the air and contribute to the risk of wildfire, endangering lives and property.

* These projects are an **inappropriate use of the limited resources** of the Federal Emergency Management Agency which are for the expressed purpose of restoring communities destroyed by disasters such as floods and other catastrophic events and preparing communities for anticipated catastrophic events. Most of the proposed projects in the East Bay are miles away from any residences.

--

CeliaSue Hecht
Monterey Bay area newshound
Seaside, CA 93955
702-225-8206

Monterey Bay area journalist, dog travel writer with blog, writes/edits articles, books, copy, on topics angels to zen, dogs, romanic and worldwide travel

<http://cshecht.wordpress.com/>

<http://asea.myvoffice.com/suemagic/>

<http://suemagic5.wix.com/celiasue>

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<http://www.facebook.com/pages/Young-Living-Essential-Oils/185232124846870>

About me:

<http://about.me/writerink/bio>

<http://sites.google.com/site/celiasueink/>

<http://www.linkedin.com/in/celiasuehecht>

<https://shiftnetwork.infusionsoft.com/go/swgm/cici/>

<http://www.cafepress.com/k9cici>

<http://twtbizcard.com/suemagic>

<https://be.freelancersunion.org/f/member/38867>

From: [Doug Giancoli](mailto:Doug.Giancoli)
To: baha-pac@yahoogroups.com; EBH-EIS-FEMA-RIX
Subject: Re: [BAHA PAC] Re: Draft EIS for the UC Berkeley/Oakland/East Bay Regional Park Deforestation Plan
Date: Monday, June 10, 2013 12:31:48 AM

Susan,
This is a great response. Thank you so much.
Arlene

-----Original Message-----

From: sdinkC <sdinkC@aol.com>
To: EBH-EIS-FEMA-RIX <EBH-EIS-FEMA-RIX@fema.dhs.gov>
Sent: Mon, Jun 10, 2013 7:11 am
Subject: [BAHA PAC] Re: Draft EIS for the UC Berkeley/Oakland/East Bay Regional Park Deforestation Plan

Susan Cerny
860 Keeler Avenue
Berkeley, CA 94708

June 9, 2013

EBH-EIS-FEMA-RIX@fema.dhs.gov

Re: UC Berkeley/Oakland/East Bay Regional Park Deforestation Plan

To Whom it May Concern,

I am writing in response to the Draft EIS for the UC Berkeley/Oakland/East Bay Regional Park Deforestation Plan.

Table 1-1

Comment: The total of 993.3 acres is huge and spans most of the ridges of the East Bay Hills. Cumulatively this will have a significant impact on wildlife habitat. The loss of so many trees and underbrush will have a huge negative impact especially on birds.

2.1 Purpose and Need

The purpose of the project is to substantially reduce hazardous fire risk to people and structures in the East Bay Hills and the vicinity of Miller/Knox Regional Shoreline.

Comment: While fire is a threat and reality, the type of clearing described in your plan CAN NOT guarantee that no fires will ever occur. In fact by creating much more open hillsides, grasses will grow and these also catch fire and get out of control. Even your own DEIS states--- # 3.3.1.3 Keeping Grass Short Keeping grass short by mowing or grazing, especially along roads, is a basic element of an effective wildfire hazard reduction program. Grass was not the fuel that made the fire so destructive, however. It [the fire] was fed mainly by trees, brush, and houses (emphasis added).

3.4.2.1.1 Strawberry Canyon-PDM

Non-native trees, including all eucalyptus, Monterey pine, and acacia,

would be cut down. Eucalyptus and acacia would be prevented from resprouting by application of herbicides to the stumps.

Comment: The use of herbicides is unacceptable. Please address the cost and the risks associated with the herbicide use

DEIS: The objective is to leave all downed material on site.

Comment: After reading this I ask: how would this be accomplished? It gives me the impression that a serious fire hazard would be created. 24 inches of wood chips and tree limbs scattered about? If a fire should begin in the wood chips please explain why this wouldn't cause a smoldering and potentially fire dangerous situation.

3.4.2.1.2 Claremont-PDM

Three— 12 foot wide 2600 foot long roads? The roads would mainly follow existing logging roads created during work done in 1974 and 1975 when the site was last cleared.

Comment: So this enormous and destructive endeavor, costing the tax payers millions was last done nearly 40 years ago---? Why didn't that clearing produce permanent results? Why would this clearing be better? You have not adequately analyze reasonable alternatives proposed for fire risk mitigation.

In conclusion, The FEMA Draft EIS for UC Berkeley, Oakland, and EBRPD vegetation management projects is unacceptable. It relies on a fire model that is fundamentally flawed. The EIS does not explain how the project will be maintained in the future. After the clearing projects are complete, the fire danger will continually increase as more flammable weed/brush and tall grass vegetation grows--- as it obviously did after the 1974-5 clearings.

Clearing dry underbrush and dry grasses is mandatory for keeping hillsides safe from fire. But this needs to be regular maintenance, every year. Such regular maintenance has not been done--- always the excuse of lack of money---

The FEMA grant should be for some clearing of dry underbrush and dense tree group etc. --- and then be spread out over 10 years for regular maintenance. Wholesale stripping of the hillsides will only temporarily reduce fire hazard--- the denuded hillsides will re-sprout and become renewed fire hazards because, again, there will not be any regular maintenance.

Sincerely,

Susan Cerny

CC <http://www.boxer.senate.gov/en/contact/policycomments.cfm>

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—/—/—

From: [Jonathan Chiu](mailto:Jonathan.Chiu@hillsconservationnetwork.org)
To: [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX@hillsconservationnetwork.org)
Cc: inquiries@hillsconservationnetwork.org
Subject: Opposition to vegetation management plan
Date: Sunday, June 16, 2013 9:59:22 PM

Hello, please do NOT add me to the mailing list. I just wanted to voice my opinion on the matter. See the following letter.

Dear FEMA,

I am a long term resident of the Bay Area. I understand the risks that come with living near Tilden Regional Park. I am opposed to the current FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management plan.

This projects is NOT a long term solution to forest fires. Rather than achieving its stated goal of reducing flames to 2 feet, the data set used to construct the EIS shows that the proposed treatments will result in an environment with flame lengths of between 14 feet and 69 feet. This flame length is worse than what could be expected with the trees that currently exist.

This project relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that will exist the day after 100,000+ trees are cut. This is a meaningless comparison, as the EIS does not specify any means by which the project proponents will maintain the environment in this condition. Because of this, shortly after the projects are completed the fire danger will begin to increase. I ask that you retract the EIS and rework it to include a fire model that analyses the expected end result vegetation rather than an essentially irrelevant state.

Furthermore, the plan does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

The FEMA draft EIS for UC, Oakland and EBRPD vegetation management projects is environmentally toxic. It does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. Additionally, it does not adequately analyze the effects on air quality resulting from the proposed plan. Nearby residents (such as myself) will be consistently exposed to smoke from the debries burning. I ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down, and burning, 100,000 tall trees.

Furthermore, this proposed project does not adequately address the cost or the risks associated with the herbicide use that is being proposed. There is increasing research that suggests Roundup is far more harmful to individuals and the environment than originally thought. The repeated spraying after the clear cutting will result in continued exposure of local residents to toxins as well as continued pollution of our creeks and watersheds. Removal of the eucalyptus roots is more

effective than ongoing spraying of the clear cut areas. I ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

I STRONGLY oppose this plan, and ask that you consider my opposition in reworking a new plan.

Regards,
Jonathan Chiu

From: [Patty Clary](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Comments Hazardous Fire Risk Reduction Draft Environmental Impact Statement, East Bay Hills, California
Date: Monday, June 17, 2013 10:36:05 PM
Attachments: [FEMA com let 0613.doc](#)

Please accept the attached comments on behalf of Californians for Alternatives to Toxics and Environmental Information Protection Center.

Sincerely,

Patty Clary
Executive Director
Californians for Alternatives to Toxics
315 P Street, Eureka, CA 95501
707.445.5100 <http://www.alternatives2toxics.org>



315 P Street • Eureka, CA • 95501
707.445.5100 • Fax 707.445.5151
cats@alt2tox.org
www.alt2tox.org



Environmental Protection Information Center
145 G Street, Suite A, Arcata, CA 95521

June 17, 2013

Allesandro Amaglio, Regional Environmental Officer
Region IX
Federal Emergency Management Agency
P.O. Box 72379
Oakland, CA 94612-8579
EBH-EIS-FEMA-RIX@fema.dhs.gov

Regarding: Hazardous Fire Risk Reduction Draft Environmental Impact Statement, East Bay Hills, California

Dear Mr Amaglio or Who it May Concern,

These comments are written on behalf of the membership of Californians for Alternatives to Toxics, aka CATs, and the Environmental Protection Information Center, aka EPIC. Many of CATs' members live, work, recreate, study and otherwise participate in activities in the communities of the East San Francisco Bay. CATs is a public interest organization with membership throughout northern California, including many who live in the East Bay communities. The members of CATs are concerned about the negative effects of toxic chemicals in the environment. CATs has a history of 35 and more years of opposition to harmful herbicide use in forestry operations, the issue that brought about the formation of CATs. Our members are concerned about the effects of the use of toxic chemicals, as described for the proposed and related projects, on the environment on which they are dependant for health, home, work, recreation and culture.

EPIC is a non-profit public interest organization formed to promote environmental values and environmental protection. While EPIC's office is located in Humboldt County, its membership is from throughout the State of California and beyond, including in the East Bay area. Members of EPIC live and enjoy and recreate in the East Bay Hills near the project areas. EPIC members live and or travel within the East Bay hills region for personal, aesthetic and recreational pursuits, including hiking, bird watching and enjoying this region's incredible natural beauty. EPIC members derive professional, scientific, aesthetic, spiritual, recreational, economic, and educational benefits and well-being from the project area and its resources.

Project Purpose and Need

We understand the purpose of the proposed project is to reduce wildfire hazard by removing certain vegetation and recruit native vegetation. While the EIS provides information as to the removal of vegetation, there is scant evidence as to how the agencies intend to recruit native vegetation. The EIS provides a general statement at outset advises that native vegetation will be preserved and encouraged to expand, but no details are provided. 1.1.1. While the EBRPD apparently intends to protect native vegetation, 3.4.2.3, there are no standards identified as to how that will happen.

The MMPs rely on "recruitment of native vegetation," yet provides no detail as to how that will happen. Hydroseeding is be used as erosion control method, "if severe erosion is occurring at a site," 5.3.2.4, but is not proposed to recruit or establish native vegetation. While the EIS states that seed sources of native grasses, shrubs and trees are regionally abundant and would be used "to assist in the recovery of the areas," 5.1.2.2.1, we did not find a requirement or information to detail how and when those sources would be used.

It is clear that the proposed activities will damage existing vegetation, including non-target species. 5.1.5.1. It is also clear that the understory of existing eucalyptus stands support native shrubs and plants. 4.2.2.2.2. This vegetation will be damaged, if not entirely eliminated, as consequence of project activities. Yet no articulated standards and protocols are in place to ensure recruitment of native vegetation.

As an example, UCB intends to cut nearly 50,000 trees, yet has no protocol for restoration of the three areas (Strawberry Canyon, Claremont, Frowning Ridge). Its project will take upwards of 2-3 years, with an estimate that "success" will occur within 7-10 years. But in the absence of any defined plan to actually plant and ensure growth of native vegetation, the "success" may simply be a denuded landscape with struggling native species. The project purpose and need is not justified in the absence of clearly enforceable and defined protocols to ensure native species protection and development. There is no long term effectiveness in the absence of a rigorous replanting program.

An additional concern about the project is the disclosure that Timber Harvesting Plan(s) (THPs) may be required by the California Department of Forestry and Fire Protection. That regulatory regime has extensive information requirements, many of which are not met through this EIS. Moreover, typically THPs are required for commercial operations, or where the landowner intends to do logging operations to advance a commercial operation. Hazard removal typically does not require a THP. In this instance, from what we read in the EIS, there is one commercial operation disclosed – UCB’s plan to use the Claremont Canyon project area for development of faculty housing and a campus retreat center. 5.12.2.4. Given this disclosure those project elements should be fully disclosed and examined.

Alternatives

A core defect in the Hazardous Fire Risk Reduction Environmental Impact Statement , aka EIS , is its failure to consider a range of viable alternatives.

The very “heart” of a NEPA procedure is the range of alternatives. The FEMA EIS fails this central requirement. The Council of Environmental Quality (CEQ) makes it clear :

The phrase "range of alternatives" refers to the alternatives discussed in environmental documents. It includes all reasonable alternatives, which must be rigorously explored and objectively evaluated, as well as those other alternatives, which are eliminated from detailed study with a brief discussion of the reasons for eliminating them. Section 1502.14. [NEPA 40 Questions <http://www.bing.com/search?q=CEQ+NEPA+40+Questions&FORM=QSRE6>]

What’s more, eliminating, ignoring or simply not exploring viable alternatives severely limits FEMA’s ability to modify its funding conditions that might be required to secure a better alternative. The EIS here actually presents only one alternative that could be modified, as “no action” can’t be modified. This in large part eliminates any possibility that a reasonable and viable alternative “would evolve through the EIS process.” 3.3.

Because [a] decisionmaker must not consider alternatives beyond the range of alternatives discussed in the relevant environmental documents. Section 1505.1(e). [NEPA 40 Questions], the lead agency, in this case FEMA, must provide a range of alternatives or there can be no substantial changes made by the decisionmaker. The FEMA EIS as currently drafted limits FEMA’s ability to undertake its obligation to present a range of alternatives, as FEMA is limited to merely adopting or deleting whole or parts of the one modifiable alternative as presented in the FEMA EIS. To be valid, based on the project, the FEMA EIS cannot stand on just two alternatives, with one being unmodifiable, as the “no action” alternative, and the other is simply inadequate. The EIS fails to comply with NEPA as it presents just one alternative that may be in parts eliminated or reduced but to which no new or different alternative can be added despite what FEMA may learn during the evolution of this EIS process.

The public, too, must know what significant alterations might become part of the Record of

Decision in advance of its publication. When the public is deprived of knowing what may be chosen as the final project description, the NEPA process has failed. The FEMA EIS cannot hold itself above the public by informing decisions for which the public has no opportunity to provide input at the end of the process.

Just how many alternatives need to be discussed is not set by the CEQ, but certainly more than two are necessary, especially for a complicated proposal with many significant environmental effects as are analyzed for the proposed and connected projects in the FEMA EIS.

When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS...What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case. [Ibid]

We believe the facts support the development of several alternatives; examples of reasonable alternatives are described below but should not be limited to these examples or even those proposed by the public during scoping. Science and the development of information where it is currently limited should be a primary determining factor for the development of alternatives.

A significant failure in development of alternatives is that FEMA did not prepare an Integrated Vegetation Management, or IVM, alternative. Professors and researchers at UCB have a long history of developing Integrated Pest Management (IPM), of which IVM is a subset. Oakland and EBRPD have both adopted IPM programs. Another local jurisdiction, the City of Berkeley, has adopted IPM guidelines. Given that the proposed and connected projects are so wide in scope, an IPM alternative of greater scope than Oakland's, Berkeley's or EBRPD's should be developed.

A true combined alternative, as part of a "range of alternatives" would offer a less intensive and environmentally damaging alternative. The EIS at 3.3.1.4 rejects a "combined alternative program." by entirely rejecting actions, instead of requiring them as part of the overall project as a means to reduce use of herbicides and clearcutting.

It is clear from the EIS that the EBRPD uses, and has been successful in using, an integrated vegetation removal program that incorporates removal of underbrush, surface fuels, lower limbs and small trees, and restricts the use of herbicides. For example, the EIS discloses that the EBRPD will thin dense eucalyptus stands, favoring retention of large trees to create an open eucalyptus stand with minimal understory. 3.4.2.2.6. This is a viable alternative, which can and should be incorporated by all agencies. It is less damaging than UCB's intention to remove 50,000 trees.

A "combined alternative" of greater scope than the local IPM policies referenced in the FEMA EIS should be further developed as an Integrated Vegetation Management alternative

that would encompass some of the alternative proposals for maintenance eliminated from review. For example, regarding resprouts --for which applying herbicides is the solution provided in the one proposed action alternative – a combination of manual removal, covering stumps with plastic – both proven methods of preventing resprouting of targeted tree species – and other options not discussed in the FEMA EIS, including prescribed burning, the most effective alternative, could be instituted in parts if the proposed project was extended over a greater period of time and if funds were spent not to clearcut and eradicate but rather to reduce and gradually change species content. An IVM maintenance plan would embrace these rejected alternatives, none of which should be seen as a fully complete alternative but constitute components of a complete alternative, to be utilized in certain areas to reduce dependence on herbicides.

Another alternative, or another part of a more comprehensive, integrated alternative, would be to develop an Integrated Fire Management (IFM) alternative. For this proposal, other alternatives eliminated in the current FEMA EIS could become components of an integrated comprehensive plan. Firefighting agencies reduced in effectiveness due to budget shortfalls of recent years would be strengthened, not as a stand-alone alternative but to provide one component of an IFM alternative. FEMA could “lean on” local governments to demonstrate enforcement of residential clear and defensible space areas, as required by California law, to condition funding for fire hazard reduction by entities owning wildlands where vegetation may threaten residences of those communities. FEMA could fund infrastructure improvements such as water storage for firefighting in residential areas. Hardening of residences most vulnerable to wildfire could be provided directly or in low-cost loans. FEMA could fund undergrounding of utility lines in the most vulnerable areas. Developing integrated alternatives would provide viable alternatives to the “bare earth” strategies envisioned for large parts of the project areas and enable landowners to take a slower, more environmentally benign approach to converting the landscape, thus reducing environmental impacts such as the reliance on herbicides for a decade or more.

None of these components have been shown to be impossible or not viable by the FEMA EIS except if used as complete alternatives unto themselves. We concede this point but believe the FEMA EIS fails until integrated practices and other potentially viable, but perhaps not “preferred,” alternatives are provided as part of “the range of alternatives” required by NEPA.

California Environmental Quality Act

Although FEMA has chosen to be lead agency, several agencies organized under the State of California are significantly more than cooperating agencies in the implementation of the FEMA EIS. For example, while the U.S. Forest Service is clearly a cooperating agency, the same is not entirely true of EBRPD, Oakland or UCB, each of which have written distinctly different plans and will implement them, thus making these actually lead agencies. With the burning component of EBRPD’s program where carbon monoxide levels are expected to exceed California Air Resources Board thresholds and with the potential for Timber Harvest

Plans to be obtained from the California Department of Forestry/CalFire, a concurrent CEQA procedure in the form of an Environmental Impact Report must be undertaken.

California Environmental Quality Act (CEQA) requires coordination of federal and state environmental review documents. Here, there is no effort to combine an environmental impact report (EIR) with this EIS, thereby undermining CEQA's goals, as well as its more rigorous substantive requirements.

Project Impacts

Herbicides are not clearly nor adequately described or analyzed

The EIS must explain or summarize methodologies or research and modeling, and the results of research that may have been conducted to analyze impacts and alternatives. CEQ. 40 Questions

A plain language summary of the analysis and conclusions of that technical discussion should go in the text of the EIS. Ibid

The EIS fails to inform regarding the number of trees that will be treated with herbicides. For example, 12,000 eucalyptus, pine and acacia trees will be cut down in Strawberry Canyon and herbicide applied to all but the pine trees. 3.4.2.1.1

However, the EIS does not identify how many trees into which herbicides will be applied, the rate of application, or the gross amount per year of herbicide projected to be used in Strawberry Canyon and other sites. Not providing these critically important descriptions renders analysis of the impacts of herbicides a failure. If 10,000 of 12,000 trees are treated, and some are sprayed and others painted, depending on distance to waterways, it takes a wild guess to know how much herbicide will be introduced to the canyon watershed. Year two and on could involve significantly more herbicide as sprouts could reach 6 feet in height, requiring more herbicide application higher into the air, potentially increasing adverse impacts. The Garlon 4 label at <http://www.cdms.net/LDat/ld0B0013.pdf>, for example, directs that higher rates of Garlon 4 be applied later in the summer and fall season. The EIS fails to evaluate the impact of late season application on the level of use rates of Garlon 4. These gaps in the herbicide analysis render analysis unreliable.

Neither eucalyptus nor acacia are listed as susceptible species on the Garlon 4 label. What evidence is there that either species will be adequately susceptible to the chemical? What impact will susceptibility or lack of it have on total herbicide use and environmental impact?

Herbicides will be applied twice a year to control sprouts, but fails to disclose when those applications will occur, and what effects may be associated with that seasonal application.

Eucalyptus seedlings will be "managed." It is not clear if management will be with herbicides or other means, as this is not defined. Herbicides are to be applied by a licensed pesticide applicator, but it is unclear whether this means that each individual applying herbicide will be licensed or that they will be under the supervision of a licensed applicator, who may not be on site.

Herbicide active ingredients are mixed with other compounds in the formulation. Impacts of these mixtures is not adequately described or analyzed in the EIS.

Garlon 4's active ingredient is triclopyr and 38.4% other ingredients. 72.3 % of Stalker is "other ingredients." Up to 31% of Garlon 4 formulation is kerosene. What impact on fire risk might the addition of kerosene, combined with oil, have on increased fire risk? Which formulation of "Roundup" will be used? POWERMAX, PRO, ProDry, QuikPRO, Ultra Dry, Ultra Weathermax? The differences in these formulations will have differing environmental impacts. For Roundup Pro, "other ingredients" make up 59% of the formulation. Roundup PowerMAX "other ingredients" are 51.3 % of the formulation. The active ingredient of PowerMAX is a potassium salt of glyphosate. Roundup Ultra is an isopropylamine salt; various formulations may have varying environmental impact. For Roundup Ultra, "other ingredients" make up 59% of the formulation. These differences translate into varying environmental impacts which are not evaluated in the FEMA EIS. Nor does the EIS evaluate the impact that these varying "other ingredients" will have on the environment.

For example, Roundup formulations include polyethoxylated tallowamine (POEA), isopropylamine, and diethanolamide. Each of these compounds has been shown to exhibit toxicity at much higher levels than glyphosate alone. POEA has been shown to be three times as acutely toxic to humans as glyphosate alone.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(88\)90379-0/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(88)90379-0/fulltext)

One surfactant commonly used in Rodeo (similar to Roundup) was found to be 100 times more toxic to aquatic invertebrates than glyphosate alone.

<http://www.ncbi.nlm.nih.gov/pubmed/3607312>

Other inert ingredients have been shown to be genotoxic, carcinogenic, teratogenic and disruptive to reproductive function in both humans and animals.

<http://www.ncbi.nlm.nih.gov/pubmed/12821000>

These environmental variables are not adequately described in the EIS and may have significant impacts on the environment. This gap and others described in these comments render herbicide analysis inadequate for NEPA compliance.

While the EIS states that spraying of herbicides will be allowed with 60 feet of water, to stumps, but not foliage, it later indicates that spraying will occur on returning vegetation 3 to 6 feet in height, for up to 10 years. This means there will be spraying of foliage within 60 feet of water, as no other proposals are identified.

The rate of application of herbicides – within 60 minutes of the felling of each tree –

indicates an intensity of application that must be evaluated, particularly as to safety to workers as well as concentration of the herbicides used. And while no herbicides are to be “intentionally” applied to nontarget species, 5.4.4.2, there is little consideration of what to do in the event that nontarget species are exposed to herbicides.

A key failure is the lack of analysis of the toxicity of surfacants and adjuvants to be used in conjunction with the disclosed herbicides. While some mention is made in the Appendices F and L, there is no analysis provided, even though the EIS admits that surfactants can likely be more toxic than the herbicides themselves. 5.10.2.3.1. Indeed, surfactants are not even mentioned in the impacts analysis Section 5. The EIS is lacking in the absence of this disclosure and analysis.

The Garlon 4 and Stalker <http://www.cdms.net/LDat/ld01R013.pdf> labels provide directions for use. For cut stumps, oil is to be mixed with the herbicide formulation and a surfactant emulsifier is also projected for use. The EIS fails to identify the full tank mixture of surfactants and adjuvants that will be used, nor is their environmental impact discussed and analyzed in the EIS. Whether tank mix is projected to be the same throughout the proposed and connected project area or vary with implementing landowner is not disclosed. The environmental impact of tank mix and variations is not considered in the EIS.

Marking dye is not analyzed for impacts in the EIS though it can have toxic impacts to susceptible nontarget organisms. Marker dyes commonly used are Colorfast Purple or Hi-Light. Colorfast Purple may contain acetic acid, dipropylene glycol, gentian violet and other ingredients. The Material Safety Sheet for Colorfast Purple http://www.beckerunderwood.com/media/products/resources/Colorfast_Purple_MSDS_64D2DC206E76C.pdf indicates that the liquid is expected to be corrosive and to cause burns and permanent injury if eye contact occurs.

According to the MSDS of another spray dye, Colorfast Red, http://www.beckerunderwood.com/media/products/resources/Colorfast_Red_MSDS_B43F5A0C7EE42.pdf the compound contains acetic acid but does not have the corrosive and injurious characteristics of Colorfast Purple. This indicates that another, trade secret ingredient may have greater toxicity in one formulation but is not present in another. The effect Colorfast Purple may have on frogs and other herps, particularly remnant populations of the endangered Red Legged frog is not considered in the EIS. As no analysis is made of surfactants, dyes and other adjuvants that may be added to tank mixes used in the proposed and connected projects, potentially significant adverse environmental impacts are not assessed in the EIS.

EBRPD proposes to use herbicide on “noxious weeds, such as poison oak, [which] would be treated by spraying their leaves if this could be done without affecting nontargeted plants.” First, by no authority has poison oak been determined a “noxious weed.” It is not listed by California. <http://plants.usda.gov/java/noxious?rptType=State&statefips=06> In fact, poison oak is an important California native plant. FEMA’s cooperating agency, the U.S. Forest Service has this to say about its benefits to the environment:

IMPORTANCE TO LIVESTOCK AND WILDLIFE :

Black-tailed deer and all classes of livestock browse Pacific poison-oak [53]. It is the most important black-tailed deer browse in some areas of California [5,6]. Birds eat Pacific poison-oak fruits [53].

PALATABILITY :

Pacific poison-oak palatability is rated good to fair for horses and deer; and fair to poor for cattle, sheep, and goats [53].

NUTRITIONAL VALUE :

Percent crude protein in Pacific poison-oak foliage collected throughout California averaged 24.2 in March, 20.6 in May, 10.1 in July, and 6.5 in September [5]. Pacific poison-oak is relatively high in phosphorus, sulfur, and calcium as compared to other browse species [24]. The following mineral content (percentage basis) was reported for the foliage [54]:

<i>Ca</i>	<i>P</i>	<i>K</i>	<i>Mg</i>	<i>S</i>
<i>1.00</i>	<i>0.23</i>	<i>1.13</i>	<i>0.59</i>	<i>0.19</i>

COVER VALUE :

The federally endangered least Bell's vireo uses Pacific poison-oak for nest sites in oak woodlands [25].

Fremont cottonwood (Populus fremontii)/Pacific poison-oak woodlands contribute to bird diversity and density in California [28]. A rare colony of ringtail was found inhabiting a Fremont cottonwood/Pacific poison-oak woodland on the Sacramento River [3].

VALUE FOR REHABILITATION OF DISTURBED SITES :

Pacific poison-oak has been recommended for use in restoration projects. Information on propagation and handling methods to "minimize risks" to planting crews is available [23]. Having worked on field crews in the Sierra Nevada foothills, however, this author recommends using native shrubs other than Pacific poison-oak for restoration.

OTHER USES AND VALUES :

Urushiol has been found to mediate DNA strand scission. This activity may have application in DNA sequence studies [70].

Native Americans used the stems to make baskets and the sap to cure

ringworm [15,60]. Chumash Indians used Pacific poison-oak sap to remove warts, corns, and calluses; to cauterize sores; and to stop bleeding. They drank a decoction made from Pacific poison-oak roots to treat dysentery [60]. Index of Species Information. US Forest Service. <http://www.fs.fed.us/database/feis/plants/vine/toxdiv/all.html>

The EIS fails to disclose if other “noxious weeds” or otherwise undesirable plants are targeted for herbicide application nor does it describe what herbicides would be used. The use of herbicides to destroy poison oak is not part of a fire fuels plan. This should be clarified in the EIS.

At 5.1.3.3.1 Best Management Practices, to require as BMPs the application of herbicides during dry weather and low wind conditions fails as a mitigation as these are already regulatory requirements of California and the U.S. Environmental Protection Agency and cannot be considered mitigations. Mitigations must provide relief in addition to regulatory requirements.

The same use of regulatory requirements to substitute for mitigation is found at 5.1.3.3.2, where regulation and court orders are relied on in large part to substitute for mitigation. Labels for the herbicides proposed for use REQUIRE that herbicides not be applied when rainfall is expected or winds are greater than 10 mph, that their application be directly to stumps or not be allowed to drift into surface water. Once the already established regulatory requirements are removed from the mitigations presented for herbicide use in the EIS, there is little left to mitigate potential harm. This is another failure of the EIS to comply with the requirements of NEPA.

Impacts from chipping and leaving material on site

The EIS discloses that all material will be left on site, either through chipping to create up to 24 inch deep layer of wood chips between 1 and 4 inches long, or placement of trunk cut into 20-30 feet lengths. The EIS lacks an adequate discussion of the environmental effects associated with this, particularly in terms of fire potential, spread of disease, killing of undergrowth, and prevention preventing natural regeneration. The EIS indicates it will take up to 5 years for this material to decompose, and there is no mention of replanting native vegetation. What will be the effects of this treated material decomposing into the soil? What impact on soil nutrient composition and soil microorganism populations will be the result of the application and decomposition of wood chips? Can nutrients be discharged to water bodies from the decomposing chips, and what effect would this have? These are significant environmental impacts for which analysis is missing from the EIS.

As the EIS discloses, the wood chip mulch application may lead to a substantial reduction in tree growth in some sites. 5.3.2.2.2. While this may be advantageous in efforts to eliminate eucalyptus and Monterey Pine, it likely will restrict natural vegetation. The EIS extrapolates

from other studies, indicating that decomposition for eucalyptus in the East Bay Hills could take up to 10 years. In the absence of site specific study, the effects of this use of wood chip mulch could further undermine the recruitment of native vegetation, defeating a project purpose.

Impacting native vegetation

In addition, as noted above, the EIS acknowledges that existing and native vegetation will be harmed during project implementation due to use of heavy machinery and pruning. The use of herbicides will further exacerbate this impact.

Impacts to species

The EIS dismisses potential impacts to migratory birds, by claiming that “work during avian nesting and fledging season (February through July 31) would only be undertaken if the treatment areas was cleared by an avian biologist.” 5.1.4.3.1. Yet, the EIS states that the work is to be done between August and November, which is a different time frame, and outside of the nesting and fledging season. Thus, it appears that project work can occur between February through July 31. This must be fully disclosed and analyzed, as it is not within the so-called “work window[]” referenced.

The EIS also attempts to dismiss potential impacts to the CRLF, by assuming herbicide application will occur during the dry season, at a time when it is unlikely that the CRLF would be present. 5.1.6.2.2. But the EIS states that the projects will go forward between August through November (3.4.2.1), which clearly includes more than just the “dry” season. Further analysis and consideration of impacts on the CRLF is required given this discrepancy.

Carbon impacts

Removing tens of thousands of trees will remove valuable carbon sinks, in an urban which needs this growth for our health. Indeed, 80% of carbon currently stored by vegetation in the project area is stored in the eucalyptus vegetation. 4.7.3.1. Decomposition of the tree material will also create CO2. This will have a long term impact that is not evaluated. Again, in the absence of a rigorous program to replant, the East Bay Hills will lose a valuable resource. While we understand the need to address wildfire hazard, what is being proposed — and particularly by UCB — is literally overkill, in that there are more constrained and environmentally sensitive means, as EBRPD has illustrated, which can achieve the same purpose without the dramatic impacts associated with clearcutting mature eucalyptus stands and using an intensive herbicide regime.

In addition, removing trees will remove vital summertime fog drip, making these areas hotter and drier. This will make it even more difficult for seed generation. 5.6.2.3.2. The

EIS's reliance on the Caspar Creek study, which focuses on a high rainfall forested watershed in Northern California, is inappropriate, as the site conditions are not at all similar.

We request that FEMA amend the draft EIS and present it again for public review, providing an adequate range of alternatives and informed by an analysis that complies with the requirements of NEPA.

Sincerely,



Patricia Clary
Executive Director
Californians for Alternatives to Toxics



Andrew Orahoske
Conservation Director
Environmental Protection Information Center



FEMA

Hazardous Fire Risk Reduction , East Bay Hills, California

DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

Veronika Cole

CONTACT INFO (optional):

~~Veronika Cole~~
Veronikakce@sbcglobal.net (A/R) 241-5388
(Oakland resident)

COMMENTS:

I am a heavy user of the open space provided by the Oakland Hills. I am very concerned by the destruction of habitat, including for native bees, raptors, fungi and small mammals. This plan will create erosion + introduce dangerous chemicals and is overly destructive. ~~It~~ And is

Signature and Date:

Veronika Cole

5/18/13

ugly,
creating
blight.

Tuesday, May 14, 2013

Richard C. Trudeau Training Center

Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

From: [Cameron Colson](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Commercially Available Natural Land/Vegetation Control Product (Non-Chemical Invasive Plant Management)
Date: Thursday, June 13, 2013 3:17:56 PM

SUBJECT: Public Response to EIS and other similarly proposed programs agency wide

Instructions: Disseminate this entire communication widely:

Attn: Land Managers, Environmental and Safety Compliance Officers, and directly to Procurement Directors responsible for implementing latest executive mandates on the simplified purchase of non-toxic alternatives and natural land care products and services by the government.

(BAA) BROAD AGENCY ANNOUNCEMENT

Introducing the latest in commercially available green products to replace toxics.

You have received this communication as a public comment to the proposed uses of regulated toxic materials to control unwanted vegetative growth under your responsibility. This communication is from the inventor of a revolutionary patented natural control method to improve the onsite management policy of unwanted, invasive, hazardous, or flammable vegetations. EIS describes a traditional management plan using regulated products defined legally as an Economic Poison, this definition includes the products proposed in EIS management plan.

Purpose of Communication: Discovery and Introduction of a new and improved way to expedite procurement of natural land care technologies offered by Cameron Colson, Sole-proprietor Inventor of patentedly novel water based process known as "hydromechanical obliteration".

Outcome: Improve environment and public safety. Proposal is the delivery of a better outcome in land management. Proposed product/service offering, an economically superior ecological vegetation management and greenwaste reduction product designed to crosscut multiple legal issues facing regulated land management in current proposal.

DETAILS of PROPOSAL: An intellectually and scientifically proven improved land care and fire protection product to replace traditional / toxic management policy.

Proposed program delivers a needed upgrade in landcare with unmeasured benefits ecologically/socially. Said product improves short and longterm land stewardship outcomes as compared to traditional methods.

SUMMARY

The above response proposes a non-toxic alternative land care product with superior results compared to traditional policy. The described superior vegetation management program; meets and exceeds this agency mandate to reduce the environmental burden of regulated materials in it's currently proposed plan of non-native plant growth management.

RESPONSE REQUIRED: Please notify me to schedule a policy process review of the current and future proposed management plans describing the use of regulated toxic substances on your site. This comment requests agency to replace proposed management proposal with a environmentally superior mangement product, streamlined for simplified procurement. The above represents legal notice to a commercially proven alternative process of natural land care with cross-cutting benefit to the agency, environment, economy and public.

Respond by e-mail message to "cameroncolson@californiacompliant.com."

CameronColson
All Rights Reserved

From: [Jeanne Corsick](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Berkeley/Oakland Hills Fire Prevention Proposal
Date: Monday, June 03, 2013 1:40:07 PM

Dear FEMA,

I am a native CA resident, raised in Santa Clara, CA. I am proud to be a citizen of the Bay Area. For decades there has been an incredible amount of progress emanating from this land, from Santa Clara to Fremont, Foster City to Mountain View, San Francisco to Sausalito, and of course Berkeley to Oakland and the surrounding area. The Bay Area is on the forefront of our nation, and our nation to the world. We need to be extremely cautious of the decisions we make here at home, not only for our residents, but also because of the effect we have on other locales in America and the world at large.

I urge you to continue extensive research into what is the most viable option for fire prevention control in the Berkeley Oakland hills prior to executing the plan as it currently stands.

Is removal of the non-native Eucalyptus truly the best answer to this serious issue?

Will these plots without vegetation truly prevent fire from spreading?

The local fire department has contained fires in the hills since 1991 successfully. That's 22 years without any major threat to communities living in the hills. They have learned how best to handle fires through continued extensive training. Their mistakes of the past have pushed them to where they are now, able to successfully control fire in the area. Additionally, those that choose to live in such close proximity to this potential threat have begun to better educate themselves and are continuing to take better preventative fire control measures around their properties.

If it comes to light through extensive research that the removal of these non-native species is warranted, then why is there no plan to plant native species?

And of more concern to me, why is the plan to use toxic chemicals such as RoundUp to prevent future growth? These are protected lands free from major industrialization and commercialization. Please seriously consider alternatives to chemical based herbicides and pesticides. States such as Massachusetts and Oregon have had similar needs for such research and have found positive results for their areas. We would need to conduct similar research to ascertain what could work in this area - let's do it! Please see this document for information regarding what Massachusetts found in it's research: http://www.mhd.state.ma.us/downloads/vmp/Herbicide_Alternatives.pdf. And this for Oregon: <http://www.corvallisoregon.gov/modules/showdocument.aspx?documentid=4567>

We cannot simply take what appears to be the easiest route. The plan as it currently stands will have long term effects on not only human health, but also animal habitats. Water and air quality will potentially be effected. People who walk the surrounding trails will be much less likely to visit, etc.

In all honesty none of us truly know the effects of what will happen. And that is really my point. A lot more research is needed before moving forward with this project. Who will be effected, man and animal? How will water be effected? How will air be effected? Where will the animals go? And many more questions have not satisfactorily been answered.

I am strongly opposed to this project moving forward.

Thank you for your time.

--

Best,

Jeanne

From: [Anja Crickmore](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: East Bay Hills EIS for Hazardous Fire Risk Reduction
Date: Monday, June 17, 2013 6:30:21 PM

June 17, 2013

FEMA

To whom it may concern:

I am writing in support of the no-action alternative for the East Bay Hills EIS for Hazardous Fire Risk Reduction. The plan to cut and chip trees on this order of magnitude was not a convincing method for reducing fire, and the treatments to allegedly enhance abundance of native plants seemed unlikely to achieve success.

Concerns have been raised that leaving several feet of chipped eucalyptus will enhance rather than reduce fire risk.

I've lived in the East Bay for most of my life and have observed that disturbed areas become thickly colonized with broom and other undesirable species.

A friend of mine, who has been active in the Contra Costa County Breeding Bird Atlas, frequently commented on the rich avian biodiversity present at the first ridgeline east of the Bay. The understory of snowberries and native blackberry is an important nesting area for song sparrows, spotted towhees, and a very unusual (for this location) Nuttall's white-crowned sparrow. It is difficult to tell from the figures, but the treatment area seems to be excessively wide, and will have a very significant negative impact on the view shed, as well as on wildlife resources.

Also, I was shocked to observe that areas with relatively few structures, such as at Miller-Knox Regional Shoreline, were also proposed for treatment.

Again, I urge you to adopt the no-action alternative. This plan would have catastrophic impacts on one of our most treasured resources -- our East Bay Regional Parks.

Thank you for consideration of my view,

Anja Crickmore
5814 Fresno Ave.
Richmond CA 94804

From: [Tim Cull](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: public comments for east bay hills fire risk reduction
Date: Monday, May 20, 2013 11:34:25 AM

Hello,

I'd like to submit my public comments for the East Bay Hills fire risk reduction project.

<http://ebheis.cdmims.com/ContactUs.aspx>

While I do support a reduction in fire hazard and the removal of non-native species, I'm concerned about the way this project will be carried out. Specifically:

1) it sounds like entire forests of trees will be cleared out in one fell swoop, leaving a devastated landscape that is ugly, prone to landslide, and a terrible habitat for wildlife. I'm also skeptical that the intent to preserve native species described in the environmental impact report will actually be followed in practice.

2) herbicides will be used in fairly large quantities. Even with the protections described in the environmental impact statement (60 buffer to water, hand application to stumps) I still think that's too much herbicide. I'm also skeptical that the precautions described in the environmental impact report will actually be followed in practice.

3) I want to re-iterate that I am concerned about landslides in the abated areas.

4) There isn't any replacement planting involved, which means it will take a hundred years or more for native woodland to fill in with anything like the forest we have now.

I would like to see the following changes to the plan:

1) replacement planting with native trees like bay, oak, and redwood

2) even stricter policies around herbicides, as well as some description of how the policies will be enforced and some mandatory penalties for contractors who do not follow the policies.

3) graduated cutting of sections of trees instead of doing entire hillsides all at once.

4) specific penalties for contractors who "accidentally" destroy native plants and trees while cutting down non-native ones.

Thank you,

Tim Cull
1438 Grizzly Peak Blvd
Berkeley, CA 94708
510.409.5418

From: lcurriedesign@aol.com
To: [EBH-EIS-FEMA-RIX](#)
Subject: Cutting Trees in the East Bay Hills, California
Date: Monday, June 17, 2013 10:48:27 PM

To Whom it May Concern:

In dealing with the East Bay Hills trees, I support the suggestions of the Berkeley Fellowship, below.

Sincerely,
Linda Currie
1359 Tomlee Drive, Berkeley, CA 94702

The Berkeley Fellowship of Unitarian Universalists Social Justice Committee submits the following public comment. We find the Environmental Impact Statement for the East Bay Hills fire reduction plan to be especially inadequate regarding the use of toxic herbicides. If trees are to be cut, we request nontoxic alternatives to deal with re-sprouting. We also object to inadequate public notice re the EIS.

1. The BFUU Social Justice Committee objects to the lack of adequate public notice re the East Bay Hills fire reduction plan. Our first request, therefore, is that the public comment deadline be re-opened until the end of 2013, that there be more public hearings in the fall, and that the hearings be widely publicized in advance.

2. The BFUU Social Justice Committee finds the current EIS to be inadequate because it disregards harms caused by toxic herbicides. The current Draft EIS is unacceptable as the plan, if enacted, would expose the public and wildlife to thousands of gallons of toxic herbicides, inflict enormous environmental damage, and destroy raptor and other habitats. We request that you retract this EIS and insist that those portions of the EIS calling for toxic herbicides be replaced by nontoxic alternatives. Four different toxic herbicides are proposed - Roundup, Stalker, Garlon 4 Ultra (from the Garlon 4 Ultra MSDS: "... highly toxic to aquatic organisms...; "Prevent from entering soil...waterways and/or groundwater"; "decomposition products can include...: hydrogen chloride, nitrogen oxide, phosgene." (All toxic)) and Garlon 3A - to be applied over a period of as long as ten years. The risk that any of these poisons will make their way down the watershed into the creeks, the parks, or nearby residential communities, is unacceptable. Even with the mitigation precautions outlined in the Draft EIS, thousands of pounds of chemicals would be applied by many users over many years and it takes only one unanticipated rainstorm, rogue windstorm, or human error to carry these toxins outside the arbitrary boundaries they have set.

There are viable alternatives!

1st best practices alternative to herbicides for re-sprouts - GRIND the STUMPS:

Journal of Arboriculture 8(12): December 1982 327
EUCALYPTUS STUMP SPROUT CONTROL
by W. Douglas Hamilton and W.B. McHenry

100% control. No sprouting had occurred two years after 12 blue gums were felled and stumps cut to 6 inches below the soil line. A survey of where blue gum sprouts occur indicated that most sprouts originate at the ground surface and none are attached deeper than 4 inches below the ground line.

<http://www.google.com/search?client=safari&rls=en&q=stop+felled+eucalyptus+trees+from+resprouting&ie=UTF-8&oe=UTF-8>

Stump grinding can eliminate sprouting, as well as remove all evidence of trees....fill resulting craters with soil Stump grinding can eliminate sprouting, as well as remove all evidence of trees....fill resulting craters with soil (or sawdust from the tree per a local master arborist who estimated that grinding will add 10% to the cost of cutting, but the cost of herbicides and their licensed application would be saved, as well as the cost of litigation.)

2nd best practices alternative to herbicides for re-sprouts - TARP the STUMPS:

National Park Service experiment

Light deprivation (TARPING)

Experiments with tarping have used light deprivation and a physical barrier to prevent resprouting. This involves stapling heavy black plastic over the stump, and burying it with duff and mulch onsite:

http://www.nps.gov/pore/parkmgmt/upload/firemanagement_fireeducation_newsletter_eucalyptus.pdf

Conservation Corps workers would return to remove the tarps, and re-tarp if necessary, before the tarps disintegrate.

3rd best practices alternative to herbicides for re-sprouts - CLIP the SPROUTS:

Manual removal of eucalyptus sprouts from stumps results in eventual control as food resources are exhausted. This method of control is effective, though labor intensive. There are thousands of unskilled, unemployed youth in the East Bay who would appreciate this low paid work via the Conservation Corps. They need merely be equipped with hiking boots, hats, gloves, long-handled clippers, a hand saw for the occasional sprout that is too thick to clip, log carriers for transporting sprouts off site, and a GPS device for locating stumps.

COMBO ALTERNATIVE:

A combination of above methods will get best results. Grind wherever possible. Tarp the approximately 20% of targeted trees that are on inclines too steep to grind. Hire the Conservation Corps to:

- a. clip what rare sprouting results despite grinding/tarping as well as sprouting from seeds
- b. inspect, remove, and replace if needed, tarps before they disintegrate.

Other possible alternatives to herbicides

- a. Prescribed, very careful burning can reduce fuels in blue gum stands, although the species is fire tolerant so only seedlings can be killed by fire.
- b. Biological control is tricky, but could there be possibilities?

<http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=48&surveynumber=182.php>

c. A local tree service claims 100% efficacy in applying a thin layer of motor oil to the cadmium periphery of freshly cut stumps. Could that be less toxic than the proposed herbicides?
d. There may well be other, more acceptable alternatives, such as goat grazing: <http://eucalyptusway.blogspot.com/2010/07/goat-world.html>
salt, or potassium nitrate: <http://aroundtheyard.com/organic/organic-stump-removal-t6413.html>

All current plans violate the Americans with Disabilities Act. Using toxic herbicides would render the entire area inaccessible to people who are chemically sensitive or who are merely health conscious. In addition to lawsuits, there may be numerous tree sits. At the last public hearing, Jean Stewart who was disabled by herbicides vowed to chain herself and her wheelchair to trees to prevent their being cut. For the safety and health of wildlife and of potential protesters, as well as for the safety and health of all those passing through or near the areas in question in decades to come, and those who could be downwind or whose water could be contaminated, we reiterate our objection to the use of toxic herbicides.

Furthermore, we object on moral grounds, as the manufacturers of the proposed poisons, Monsanto Inc. and Dow Chemical Inc., are among the least trusted corporations on the planet. From Agent Orange, rBGH2 and GMO contamination, to the Bhopal chemical disaster, these two corporations have repeatedly and egregiously harmed the public without accountability. Even if we believed that some of their products were safe, we would not choose to support those corporations by giving them any business.

Please note that our timely comment was received by the midnight deadline. Please consider and respond to all of our concerns and suggested alternatives regarding toxic herbicides and adequate public notice.

Sincerely,

Phoebe Sorgen, on behalf of the Berkeley Fellowship of Unitarian Universalists Social Justice Committee which voted to authorize this public comment

From: [D](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Draft EIS for UC, Oakland and EBRPD
Date: Tuesday, June 04, 2013 1:49:56 PM

Dear FEMA,

I am totally opposed to the clear cutting and especially the use of toxic pesticides being poured into the hills and destroying the fresh water in the water table. How will UC Berkeley feel when the water in the creeks kills the magnificent redwoods and other trees that line the streams in the main campus? This is really unacceptable and ridiculous as a fire mitigation measure. Have you talked to EBMUD about what you are about to do to the water for the Bay area? Below are the points from the Hills Conservation Network which I totally agree with. I own a house in the Panoramic Hills area above Berkeley, and if you had property there I'm sure you would not approve of what is proposed. Americans already have too much toxic material in their body tissues to spray more of this in one area over and over again over 10's of years.

>The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. We ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees.

>The FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written in that it does not adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

>The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

>The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects on air quality resulting from the proposed plan. We ask that you retract the EIS and rework it to fully consider all the implications of the proposed projects on air quality.

>The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that would exist the day after 100k+ trees are cut. This is a meaningless comparison as the EIS does not specify any means by which the project proponents will maintain the environment in this state. Because of this, shortly after the projects are completed, the fire danger will increase as more flammable weed/brush and tall grass vegetation takes hold. Because of this, we ask that you retract the

EIS and rework it to modify the fire modeling to compare the current state to the expected new equilibrium state, not a completely meaningless state.

Sincerely, Dora Chang

From: johndanek@aol.com
To: [EBH-EIS-FEMA-RIX](#)
Subject: East Bay Hills Tree Removal Proposal
Date: Sunday, June 16, 2013 10:00:00 PM

June 15, 2013

Dear Sir or Madam:

Removing the proposed swath of trees from the East Bay Park properties is a "Pig in a Poke."

This proposal will cause serious soils erosion including washing excessive soils into the Bay and our local reservoirs, create loss of habit for MANY animals, drive property prices downward because of denuded landscapes and just be a sorrowful eye-sore to most residents.

If people want to live without trees, why don't they move to Arizona or some similar arid climate?

These established trees do not require any additional water for survival and they add incredible beauty to our East Bay environment.

Cancellation and absence of funding for this proposal would be most appreciated.

John Danek

41 year East Bay Resident

From: [Daphne Tooke](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable...
Date: Thursday, May 23, 2013 6:25:52 AM

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not meet its own stated goal of reducing flame lengths to 2 feet. The proposed treatments will result in an environment with flame lengths of between 14 feet and 69 feet, based on the same data set that was used to construct the EIS. This flame length is worse than what could be expected with the trees that exist currently. We ask that you retract the EIS and rework it to develop a proposal that actually fixes the problem.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. We ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees.

The FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written in that it does not adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze the effects on air quality resulting from the proposed plan. We ask that you retract the EIS and rework it to fully consider all the implications of the proposed projects on air quality.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that will exist the day after 100,000+ trees are cut. This is a meaningless comparison, as the EIS does not specify any means by which the project proponents will maintain the environment in this condition. Because of this, shortly after the projects are completed the fire danger will begin to increase. We ask that you retract the EIS and rework it to include a fire model that analyses the expected end result vegetation rather

than an essentially irrelevant state.

Daphne Tooke

From: [David](#)
To: [EBH-EIS-FEMA-RIX](#)
Cc: [Claudia Delman](#)
Subject: East Bay Hills Fire Prevention
Date: Wednesday, June 05, 2013 12:06:07 PM

Greetings,

I live in the Berkeley Hills and am extremely happy to see FEMA working to reduce fire risk in my area. There are three obvious objectives:

- 1) Reduce fire risk
- 2) Reduce cost
- 3) Be responsible to the environment (both functionally and aesthetically)

However, the current plan is to simply cut down a LOT of trees, especially eucalyptus...and to put a "check in the box" that fire risk has been lowered. I think we could do MUCH better, by *creating firebreaks instead of clear cutting*.

PROPOSAL

I am in favor of a revised plan that would focus on:

1) **Creating firebreaks** (and/or isolating groves of tall trees) rather than simply cutting down groves. While I understand this approach takes more time to design, cutting down far fewer trees will lower overall cost of the project. Firebreaks would barricade populated areas as well as isolate regions of the forest itself.

2) **Lower cost.** Creating firebreaks (100 yard gaps between groves) and/or *isolating* groves of tall trees will require removal of far fewer trees and therefore cost much less. Maybe some of the money saved by cutting down fewer trees is put into a fund for long-term maintenance, including not using toxins.

3) **Thinning.** Rather than clear cutting, and causing dramatic aesthetic and environmental changes, it is far more responsible to remove half the trees from specific groves, as part of an overall strategy to lower the fire risk, and to transition to native vegetation. I understand this also entails some degree of maintenance, but to devastate a forest in order to protect the region... is government thinking at its worst.

This three point approach seems to be the most responsible... AND least expensive. I'm very much hoping someone in government will become the champion for a plan that is clearly better than allowing inertia to create a disaster by our own hands.

Please consider a plan focused on creating firebreaks rather than clear cutting. Please seek to tackle the problem at hand *without* creating new problems.

Thank you very much.

David Levy

--

David Levy Ph.D.
President
Tricatalyst, LLC
1069 Miller Ave
Berkeley, CA 94708

w 510-705-1959
c 617-794-1285

From: [Janine deManda](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Don't deforest Oakland!
Date: Thursday, June 13, 2013 9:16:28 PM

To whom it may concern:

I've lived in Oakland since 2002, and one of the many things I love about this city are the wooded public lands. Not only do I love walking the woods myself, but I've taken my children, other people's children, and a goodly numbers of out-of-state guests to enjoy them as well. Replacing thousands of those trees with insecticide-laden piles of woodchips is going to render those beloved and popular-with-visitors woods much less appealing and no more safe. I love oaks and bay laurels, but that doesn't mean they should be alone in the forests of Oakland, particularly given the disease threat looming over Oakland's oaks. As a resident and tax-payer, I would very much prefer the funds allocated for this spurious project be used to protect the oaks instead of to destroy the eucalyptus trees.

My daughter, eight and a half years old, wanted me to add that she likes eucalyptus and does not want thousands of Oakland's trees destroyed.

Thank you,
Janine deManda
5546 East 16th Street
Oakland 94621

From: [dead tree](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: COMMENT ON THE PLAN TO DEFOREST BERKELEY/OAKLAND HILLS
Date: Wednesday, May 22, 2013 3:54:38 PM

Dear persons,

Many people have provided more detailed opposition to this plan but I include my simple reasons for hoping to dissuade you from funding this. Our environment is far from the "native" landscape of the past...most notably the tremendous number of people living in the area. We need the oxygen & life-energy these trees are giving us as well as the entire web of insects, birds, & small animals that call the area home. The plan doesn't even acknowledge the effect of killing tens of thousand living beings!

As demonstrated by the devastation in Oklahoma this week, FEMA funds need to be on hand for the real purposes for which they were intended. PLEASE do not fund this crazy idea which has not been deeply understood or conceived with an broad look at the many implications it would set in motion.

Thank you for not wasting our tax dollars on this foolish idea which goes opposite to our interests. BOB DEWHURST

From: [julianna dickey](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Berkeley Trees Issue
Date: Saturday, May 18, 2013 5:01:49 PM

Dear FEMA:

As a Berkeley resident, but of more importance, as an inhabitant of the planet, I would urge you to put more thought into the plan to clear cut the Berkeley trees.

But at the very least, PLEASE DO NOT PUT 700 TO 1400 GALLONS OF THE HERBICIDE ROUNDUP ON THE WOOD CHIPS THAT ARE TO COVER 20% OF THE DENUDED AREA. THIS HERBICIDE IS KNOWN TO BE HARMFUL TO ALL LIVING THINGS, INCLUDING HUMANS, AND IS IMPLICATED IN THE "MYSTERIOUS" COLONY COLLAPSE AMONG THE BEE POPULATION. IT IS ACTUALLY NOT A MYSTERY ANYMORE. THE PESTICIDES AND HERBICIDES COATING ALL OF OUR NATURAL WORLD ARE KILLING OFF THE BEES. AND YOU KNOW WHAT THAT MEANS!

Thank you for your attention to this matter.

Juli Dickey
Berkeley

Sonia Diermayer
12721 Brookpark Rd.
Oakland, CA 94619

FEMA, Region IX
P.O. Box 72379
Oakland, CA 94612-8579

June 17, 2013

(Submitted as email attachment sent to: EBH-EIS-FEMA-RIX@fema.dhs.gov)

Re: FEMA East Bay Hills Hazardous Fire Risk Reduction EIS – OPPOSE

Dear Officials at FEMA, Region IX,

I strongly oppose the conclusions of the EIS covering a suite of tree and vegetation removal projects along the East Bay Hills urban-wildlands interface, proposed by UC Berkeley, City of Oakland and the East Bay Regional Parks District. Cumulatively, this draconian intervention would make the East Bay hills a hotter, dryer, more slide-prone, less healthy, comfortable and less safe environment for human habitation and recreation, and would drastically impact local ecosystem and watershed values.

While stands of eucalyptus, acacia and monterey pine--the main targets of the projects—may be non-native to our area, they have come to fulfill innumerable useful roles for people and the environment. For wildlife they provide direct cover, food, roosting and nesting habitat. And the aesthetic, recreational and property-enhancing values of trees and forested groves on the UC Campus, along the hills and in the East Bay Regional Parks are obvious and indisputable. The long-term or permanent impacts to these values are poorly described and not mitigated in the EIS and there is no way to mitigate the damage, which will be inflicted at the proposed scale.

However there are innumerable other serious flaws in the EIS and its basic assumptions, which I will elaborate on below. These center around devastating effects on Water Resources, Air Quality, and Climate and Microclimate, and Cumulative Effects, as well as the flawed assumptions about reduction of fire hazards.

Cumulative Impacts on Water Resources, Air Quality, and Climate and Microclimate insufficiently addressed

The trees, groves and forests targeted by these projects fulfill extremely important physical and watershed functions in the environment. The detrimental cumulative impacts on Water Resources, Air Quality, and on Climate and Microclimate that would result from the loss of such ecosystem services, and the accompanying consequences for

environmental and human health and safety are not sufficiently analyzed and acknowledged by the EIS.

Factors which would be very significantly impacted on a continuous basis by the proposed tree and vegetation removal include ground shading, temperature reduction, fog capture and drip, soil enrichment and moisture retention, carbon absorption, oxygen production, precipitation-slowing, erosion control, runoff filtration, hillside stabilization, and wind protection. Cumulatively, these factors provide a tremendous amount of water-retention and air quality improvement in the environment, ensuring cooler, moister, more comfortable, and safer climatic conditions for residents, wildlife benefits, and more pleasant, healthier conditions for recreational users of public lands.

These climatic and watershed benefits in turn provide economic and health benefits for business and private property owners through improved property values, greater climate comfort, lower water and energy use, translating into smaller carbon and water use “footprints” as the shade, moisture and cooler temperatures allow them to forgo air conditioning and landscape irrigation.

The promise of native species spontaneously replacing the removed trees is repeatedly held out as mitigation in the EIS. But the projects do not include significant planting of native oaks, bays or other trees, and even if they did, it would take many decades before those would mature sufficiently to provide anything approaching replacement of the lost ecosystem cumulative services.

Water Resources

Specifically, Water Resources are defined far too narrowly in the EIS. Only impacts on water *quality* are considered—not on water quantity or seasonal timing. The importance of fog drip for the entire watershed and water cycle is mentioned but not taken seriously. The fact that more precipitation immediately hits the ground during winter rain events after tree removal in no way helps the watershed compensate for the loss of summer fog drip and summertime moisture retention in the landscape due to shading!

The massive logging operations that will be needed to carry out the proposed work will in themselves cause immeasurable harm to the affected watersheds. Similar to logging in the Sierra Nevada, even with good faith attempts at mitigation there will be vehicle and equipment pollution, groundcover damage, soil erosion and compaction, and herbicide runoff from cutting, loading, chipping and hauling operations.

Likely leaching of eucalyptus or pine resin from chipped wood into ground or surface water with potential effects on aquatic habitat is mentioned, but impacts are not addressed.

BMP's to protect surface water from herbicides (50 foot buffer, etc) do not prevent herbicides from percolating into groundwater (5.4.2.3).

Air Quality

Specifically, CO2 emissions under the No Action Alternative would not only be negligible, they would be NEGATIVE due to carbon sequestration by the vegetation. So they MUST be compared to the Project emissions, because it means that the effects of project emissions are relatively greater than stated.

The Project Alternative mostly addresses air quality impacts of vehicle and equipment use and burning of slash. The EIS fails to quantify the CO2 that is removed from the atmosphere yearly by the current forest and vegetation, which would further reduce the emissions under No Action Alternative. The loss of that sequestration capacity needs to be accounted for under Proposed and Connected Actions (EUC=327 metric tons/acre, Mont Pine=185 m tons/acre; project total= 78,600 m tons). Yearly additional CO2 sequestration is not quantified and included in the comparison.

Carbon emissions from decomposing wood chips are NOT included in this section.

Climate and Microclimate

This portion of the EIS relies on very questionable reasoning. Again, significant CO2 emissions are listed for the No Action Alternative, based on a highly improbable cataclysmic fire event. But the definite known carbon sequestration resulting from the yearly activity of tens of thousands of large mature trees is not considered. This is a serious misrepresentation of the climate change calculus.

Under the Project Alternative projected emissions from decomposing wood chips total 1,500 m tons/yr and are totally discounted by claiming it will be absorbed by new vegetation. Also the total anticipated emissions of 2,050 m tons/yr does not include those caused by burning, due to a claim that new vegetation will absorb them. New vegetation will not grow while the chips are covering the ground and certainly not before the burning occurs! (Not to mention that fast-growing new vegetation would be invasive species which will be herbicided away!)

The reasoning for no significant climate impacts also claims that while microclimate will have more extreme daily swings, the daily “average will be unaffected”. People and the environment do not live by averages, but by rather realtime conditions. According to the EIS, those will be hotter and dryer during the day. That already means more likelihood of fire, decreased comfort for residents and recreational users.

The EIS fails to consider that the cooler, moister ambient conditions resulting from current tree cover indirectly do a great deal to stave off the increasing effects of climate change. The current project will create dryer, hotter ambient conditions in soil and air on more days along a wide swath of the East Bay ridgeline, on the UC Berkeley Campus and on Oakland hillsides. Additional projects envisioned by the City Of Oakland on public and private lands will compound these harmful effects. Vegetation removal on the scale

proposed will magnify the impact of two very dry winters and hasten and increase the detrimental impacts of global climate change. These impacts have secondary human health, safety and economic repercussions.

In conclusion, the loss of the services that the targeted trees and groves currently provide—particularly in the areas of Water Resources, Air Quality, and Climate and Microclimate—are not sufficiently described and accounted for under the specific topic areas nor under Cumulative Impacts, and these issues cannot be adequately corrected through mitigations in the current EIS.

Fire Danger – Flawed Comparisons, Assumptions

The conclusion that favorably compares the ES.7.2 Proposed and Connected Actions with the ES 7.1 No Action Alternative is based on fundamentally flawed logic. The damage from logging operations and the lost watershed and ecosystem services under the ES.7.2 Proposed and Connected Actions would definitely occur within the 10 years of the project, and would last many decades. The harmful effects listed under No Action across many of the environmental impact categories, are based on the assumption of an equally definite single fire event simultaneously devastating the entire project area. In fact, *disastrous wildfires have a relatively small statistical likelihood of occurring, and practically no likelihood of affecting the entire project area within the same 10-year span.*

So, while under the No Action Alternative *qualitatively* fire might cause significant damage to the environment at a given location *if and when it occurred*, the multi-agency vegetation removal proposal will *quantitatively* far exceed them in absolutely certain, immediate, long-lasting detrimental implications for the entire East Bay ridgeline environment from Richmond to Oakland. The purported comparison of effects from two scenarios with completely different probabilities is misleading and inappropriate. This flawed comparison invalidates the conclusion favoring ES.7.2 Proposed and Connected Actions over ES.7.1 No Action Alternative.

Another major flaw is that the EIS assumes that the draconian changes to the East Bay Hills will actually reduce property damage or loss of life. Rare wildfires are a natural part of California's landscape. Any desire to alter that regimen is unrealistic. Fire will undoubtedly continue to shape the East Bay ecosystem, with somewhat unpredictable ignition points and burn patterns. Burns may well ignite within urbanized areas of the hills, where the proposed vegetation reduction will have no benefits.

In fact the proposals cannot offer any guarantees of lessening the danger, and in fact may contribute in multiple ways to raising the fire danger. Many work teams using diesel fueled and mechanized equipment to remove vegetation in and of itself represents a hazard. Deep layers of chipped wood could spontaneously combust during the decomposition process. And the reduced moisture levels and higher temperatures resulting from removal at this scale will undoubtedly worsen fire hazard.

It would be utterly foolhardy to voluntarily destroy vast portions of the well-established natural system that provides the East Bay Hills with free air conditioning, moisture, slope stabilization, living watersheds and attractive, healthy recreational opportunities, and in doing so worsen the effects of climate change and fire danger, all under an *assumption and a hope* that it might prevent wildfire losses.

I strongly urge FEMA to adopt the ES.7.1 No Action Alternative and reject the funding application, and I urge all the agencies involved to immediately abandon their implementation plans and seeking of funds for the proposed environmentally damaging suite of projects presented under ES.7.2 Proposed and Connected Actions!

Respectfully submitted,

Sonia Diermayer
Homeowner

From: [Pierre Divenyi](#)
To: [EBH-EIS-FEMA-RIX](#)
Cc: [Connie Field](#)
Subject: Against the deforestation of the Oakland CA hills
Date: Friday, June 14, 2013 10:05:43 AM

As a resident of the Oakland-Berkeley hill area, I am thoroughly familiar with the hills and want to express my unmitigated opposition to the FEMA's deforestation plan. That plan has been drawn up without any consideration of its short-, medium-, and long-term environmental and social consequences.

I strongly urge you to reconsider your plan and draw up a sensible alternative in collaboration with environmental, civil, and social agencies.

Dr. Pierre Divenyi
1029 Keeler Avenue
Berkeley CA 94708
510-289-5024

From: [D.Dorenz](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: re: non native tree removal in Berkeley's Strawberry Canyon and surrounding hills
Date: Saturday, May 18, 2013 9:21:59 PM

As a Berkeley resident, I am writing to object to the removal of so many trees by UC Berkeley in the Berkeley Hills. The rationale for this removal is supposedly fire suppression so that native trees will grow there instead. It takes a long time for trees to grow after so many are chopped down and when herbicides are used to prevent future growth.

Native trees in the Strawberry Canyon area are suffering from the beetle -fungal blight and so the natives, Oaks and Bay Laurel, are dying at an alarming rate. If you want to see a fire hazard, all one has to do is walk the Strawberry Canyon trail to see the dying trees which are skeletons of their former selves and make great food for fires. What this means is that if the University really cared about fire suppression, the University would cut those dead and almost dead NATIVE trees to prevent fires there. This would be very sad, but truth is, they aren't thriving. Why does the University think that natives will thrive in the Berkeley Hills when they have no means to control this blight? I can see that the new growth of these native trees are also infected.

Cutting down thousands of trees is harmful to the environment due to soil erosion and the fact that the trees are no longer helping to create oxygen to purify our air. We need those trees. In the areas where UC has already chopped down many trees, they never replanted new ones. It is unsightly and worse: there is erosion that has to be held back by tarps and other weird contraptions which are not very effective. It would be a far healthier approach to thin the Eucalyptus trees to prevent fires and leave the other non natives. But the University has a vendetta against non natives that leads to bad policy: soil erosion and loss of our air purifiers when there is no assurance that native trees can survive under the current environmental conditions that make the beetle/fungus blight so pervasive and destructive. Please do not allow this bad policy to proceed using FEMA funding. Thanks for your attention to this matter.

Sincerely,
Dorothea Dorenz
1200 Neilson St. B
Berkeley, Ca. 94706

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Dorothea

From: [D.Prose](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: COMMENTS: DRAFT EIS FOR HAZARDOUS FIRE RISK REDUCTION
Date: Sunday, June 16, 2013 1:47:00 PM
Attachments: [MontPines_1998_millar006.pdf](#)

Dear FEMA EIS Staff,

I am strongly opposed to FEMA providing grants of any amount to the California Emergency Management Agency so that subapplicants UC Berkeley, the City of Oakland, and the East Bay Regional Park District (EBRPD) can utilize the funds for the fire risk reduction plan in question. I strongly favor the no action alternative.

I have been a Bay Area resident since 1979 and have lived in Oakland very near the lands to be treated for 20 years. I am a geologist with familiarity of some of the key issues involved in this matter. My family and friends are frequent hikers along trails that are currently within or near to the proposed treatment areas. We find the parks and UCB lands exceedingly beautiful and very comforting to visit. The diversity and high density of trees, including eucalyptus and Monterey pines, is wonderful to us and is a highly valued part of living here in the East Bay.

In my view, the vast reduction of trees and other vegetation, and application of toxic pesticides proposed in over 100 project areas under this FEMA grant application:

1. is severe, heavy-handed, poorly planned, and politically-motivated.
2. will, after all the destruction and poisoning of the land, possibly increase the fire risk in the region.
3. is highly experimental, scientifically controversial, and not at all based on adequately tested fuel model analyses.
4. will needlessly destroy many hundreds of acres of highly productive land and important wildlife habitat.
5. will leave very ugly, erosion-prone scars on the landscape, and dangerous chemicals such that the enjoyment and use of these areas by myself and thousands of other residents will be greatly impaired for many years to come.
6. will contribute to global warming at a critical time when government agencies should be acting with utmost haste to combat this threat.
7. will increase cancer and other health problems in people and wildlife.
8. is motivated in part by people who very much despise the exotic tree species, mainly eucalyptus, growing in the project areas, and who are attempting to have public open space ecosystems 'engineered' more to their liking at all costs.

I do not mind whatsoever that many of the species of trees targeted for removal are not native to this area. Those trees have become vital to the broader ecosystem's health and are dear to most residents living here. Only a small minority of residents are pushing for the massive disruption of this ecosystem and are using fear tactics and deception to further their cause. One of the chief proponents of this tree removal proposal is a citizen's group that stands to directly benefit financially by receiving contracts to perform the treatments.

Monterey pine trees (*Pinus radiata*), one of the "bad guys" targeted for eradication, is actually a native to this region if one looks back in time far enough, but still within the modern climatic period called the Holocene (the last 11,000 years). This species should not be considered an exotic. In fact, the California Native Plant Society once recommended increasing the presence of this tree in the East Bay hills, as Joaquin

Miller did, because it has become a very rare endemic species in its native west coast range largely due to development (reference article is attached).

Several years ago, EBRPD conducted a horrific Monterey pine tree and eucalyptus removal project in Redwood Park along East Ridge Trail, cutting hundreds of medium and large diameter trees in the name of hazardous fire risk reduction. The project was a failure in many respects. The removal of the tree canopy triggered a very vigorous and highly flammable growth of thistle, poison oak, grass, broom, and other fast-growing species, now requiring intensive, on-going pesticide application, as well as manual clearing that will continue indefinitely. Understory control was only minimally required before this treatment. Some "native" oaks and bay trees are growing in the cleared areas but very slowly and in far lower densities than treatment proponents claimed would occur, and these species will offer no increased protection from fire than the Monterey pines. Furthermore, huge amounts of highly toxic Garlon were sprayed on cut tree stumps right up to the edge of highly-used park trails, a terribly abusive and dangerous practice by the park staff. Warning signs, when posted at all, were only left on site for a few days and were quite ignored by many young children, dogs, and of course wildlife. What will the impact be on those exposed to the chemicals? We will probably never know. What is the impact on the enjoyment of the park after this destructive project? It will never be known quantitatively, either, but I can tell you that I have lost interest in visiting this trail and so have many other people who once cherished this park. For many East Bay residents, it has been ruined aesthetically and the fire risk has not been decreased.

I believe that a similar fate awaits the lands, people, and wildlife in the project areas if the highly experimental treatments proceed as proposed in this EIS.

There is a far greater threat confronting the residents of the East Bay hills and those of us who live below the ridges on the alluvial plain alongside San Francisco Bay, and that is the threat of a major earthquake. Such a quake, predicted to occur very soon, will cause far more destruction and loss of life than a wildfire ever will. **THIS IS A RISK WE ALL CHOOSE TO TAKE BY LIVING HERE.** Yet no one is calling for severe measures to interfere with nature and attempt to lessen the danger that the Hayward Fault presents to us. At least not today; Edward Teller, one of the creators of the hydrogen bomb, did in fact strongly advocate using nuclear explosions placed within fault zones to release stored seismic energy and thereby make fault zones "safer." Luckily, his idea, now seemingly ludicrous, was never accepted or applied!

So we guard against the earthquake hazard by strengthening our buildings and infrastructure and by being prepared to take mitigative measures when the quake does come. In a similar way, people living in the hills region, a region historically visited by fire, can take effective measures to defend their property against fire and be prepared. FEMA should not support a highly experimental, highly destructive tree removal project that negatively impacts entire ecosystems and millions of people, and possibly exposes thousands of East Bay residents to a greater fire risk in the end.

Again, I urge FEMA to not fund the proposal and elect the NO ACTION ALTERNATIVE.

Sincerely,
Doug Prose
470 Cavour St.

Oakland, CA 94618

From: [Mary Doyle](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: comment on the East Bay Hills
Date: Sunday, June 16, 2013 5:17:39 PM

Hello,

I have been a resident of Berkeley for 28 years and am deeply concerned about the plans to eradicate so many trees in the East Bay Hills. A graduate of UC Berkeley I have studied ecology and plant biology and am deeply concerned about the removal of so many trees and the use of herbicides to suppress further growth. I have seen the failure of this plan in Claremont Canyon where many trees were eradicated and left on the ground. I commute daily by areas of clear cut where low growing shrubs have grown, increasing fire danger. There is no plan or money for replacing native grasses so the resulting destruction will only increase fire danger. Thinning trees is the reasonable solution.

I ask that FEMA revise its Draft Environmental Impact Statement regarding reducing the risk of fire in the East Bay Hills. The draft EIS as it now stands poses too many risks to our watershed, to wildlife habitat, to the carbon sequestration of trees, and to the ecosystem itself. Also, it is detrimental to community character, to the aesthetic look and overall feel of the human community. The draft EIS especially in the UC Berkeley area would increase the risk of fire instead of reducing it.

FEMA must revise its Draft EIS to use alternative methods to reduce the risk of fire. The use of herbicides should be forbidden, especially the planned semi-annual applications. Thinning dense groves, and clearing the debris from the understory would be far more effective. Funding this more moderate method is far preferable to funding applications of toxic herbicides.

Thank you sincerely for listening to the voice

of our local community

Mary Doyle
Resident of Berkeley

From: [Rick Drain](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: No clear-cut
Date: Friday, May 17, 2013 5:30:04 PM

I'm astonished.
Clear-cutting canyons is an absurd over-reaction. Trying to keep the areas clear by poisoning them periodically (forever?) is utterly absurd.

I'm not sure what part is worst. The poison? The landslide risk? The destroyed habitat?

Why not propose something more sensible? Try adding a few fire roads for emergency access (and everyday hiking) and thinning the vegetation where needed. Extend water mains into the area to provide quicker response by firefighters. There are so many positive alternatives. How could you propose something so simple-mindedly destructive?

Rick Drain Rick@Ricks-Cafe.net <http://www.ricks-cafe.net>

"Do what you can, with what you have, where you are."

- Theodore Roosevelt

From: [Richard Drechsler](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: East Bay Tree-felling Comment
Date: Monday, June 17, 2013 4:25:01 PM

Dear Sir/Madam FEMA official,

I am writing to register my opposition to your plan to destroy thousands of trees in the communities of the east San Francisco Bay area. I support the "No Project" alternative of your EIR because it is healthier for the environment and for the people and animals who rely on the current arboreal habitat.

I look to science, experts and government to provide an example for me and my neighbors on which to base beliefs and guide behavior with respect to the treatment of the natural world.

Years ago I learned from the government how increases in global temperature can produce disastrous effects upon the habitat on which all organisms rely.

I have been informed by the U.S. Forest Service about how the amount CO₂, (the gas that causes increased temperatures) is reduced and sequestered by the (relatively small number of) trees in the city where I live. Precisely the same species of trees that you plan to destroy stores 196,000 tons of CO₂ and sequesters an additional 5,200 tons every year. Further, these trees remove 260 tons of pollution yearly.

I'm not sure how these statistics precisely translates to the tens of thousands of trees that FEMA proposes to destroy in towns located across the bay from me, but your plan delivers a very clear message to an impressionable public. That message is that "Climate Change" is NOT a very important phenomena or great threat to society or nature.

I also wonder if this decision and your concern about fire will act as a precedent for other areas of the country. Will fires fueled annually by other species of trees in Southern California make this area your next target? What about Colorado where 500 houses were recently destroyed by wildfire? Will FEMA propose to destroy the forest in this state also?

In general the San Francisco Bay area is very safe when it comes to forest fires, partially because of the moisture and cooling affect of the trees themselves. Although we can benefit from lessons learned from the Oakland fire that occurred over 20 years ago, we should not use it to generate arcane catastrophic theory designed to scare people.

There has not been such a disaster either before or after 1991. This is a fact that should be make people feel grateful, not threatened.

Sincerely,

Richard Drechsler
S.F, CA

From: [Robyn Duffy](#)
To: [EBH-EIS-FEMA-RIX](#)
Cc: inquiries@hillsconservationnetwork.org
Subject: Oakland & Berkeley Hills
Date: Sunday, June 16, 2013 8:52:57 PM

Dear Fema,

It is with great frustration and sadness that I write to you. You have always been an organization that is supposed to be helpful to people, yet what you are proposing for our beautiful hills is beyond belief. I take walks in the Oakland and Berkeley Hills 2-3 times a week. I don't always like living in the city so these natural areas provide me with peace and natural beauty. I understand that some clearing may need to happen but not to the extent that is being suggested.

As a registered nurse, I am also greatly concerned about the mass amounts of herbicides that will be dumped into our environment. Public health should be of utmost concern but when I read the current proposal it's almost as if the health of people doesn't matter. Think of the impacts to our health and our children's future health. More and more diseases such as asthma are linked to chemical exposure and poor air quality. This proposal would potentially contribute to both.

Please consider:

- Greenhouse gas implications from cutting down so many trees.
- Risk of herbicide exposure
- Loss of shade canopy
- Air quality
- Increased fire danger

Please rework the plan so that it is something safe, effective, environmentally beneficial, and keeps the natural beauty of our most beloved area.

Thank you for your consideration!

-Robyn Duffy, BSN, RN

From: [Indigo Dutton](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: (EIS) on proposed hazardous fire risk reduction activities in the East Bay Hills
Date: Friday, May 17, 2013 8:45:32 PM

Hello,

I understand this is the email address to submit public response to this proposal. I own a home on McBryde Ave. facing the proposed area for tree clearing and burns. It appears that under your plan, most of the tree filled view we now see of Wildcat Canyon Park will turn to wood chip ground cover, grass (weeds) and "islands" of shrubbery. There would be regular fires over 10 months burning some of what has been cut. The wind break would be gone, so we could expect even stronger winds coming off the canyon than we already experience, which is considerable even now. And we would encounter more soil erosion with the trees no longer "rooting" the soil. The Roundup spraying would also be done right above the Creek that flows through the area, a creek that dogs drink from and children splash around in.

With the ground covered in drying wood chips instead of trees holding moisture and capturing fog to add even more moisture to the area, we could expect more fires. With no wind break, we could expect the fires to coming roaring into the residential areas where we live.

This is a very bad fire reduction plan, as it is likely to lead to more and worse fires.

A much better idea would be to simply think out the foreign trees that are here and instead of spraying pesticide, plant native trees to take the place of each tree removed. There should be no net change in the number of trees protecting the canyon, which already experiences a great deal of soil movement and wind. Home values will plummet in this area if this plan goes forward. I for one will definitely be selling my home and moving far away. I have no intent of experiencing a year of "controlled burns" only to be left more vulnerable to wild fires in the area, not to mention the loss of privacy once the now tree filled area becomes open expanses looking right into our homes from public land. I find it difficult to imagine what impact was considered on the residents of the area when this plan was devised. For surely it not only does not improve anything, but levies considerable harm upon current and future residents. Please revise. FEMA is known for indisputably good works, not destroying neighborhoods. Let's not change that.

Sincerely,
Indigo Dutton
5881 McBryde Ave.
Richmond, CA
510-859-3295

From: [Eileen Cohen](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Comment on Draft EIS for Hazardous Fire Risk Reduction Projects in East Bay Hills
Date: Monday, June 17, 2013 2:47:38 PM

To whom it may concern:

This is a comment on FEMA Draft EIS for the University of California, City of Oakland Oakland, and East Bay Regional Park District proposed vegetation management projects in the hills in the East Bay Hills in Northern California. I am a Berkeley resident and homeowner (since 1994).

I believe that the Draft EIS does not adequately take account of the impacts on humans, other animals, climate, and vegetation in the areas concerned and is therefore unacceptable. For the following specific reasons I ask that you withdraw and rework the EIS.

The EIS:

- Does not meet its own stated goal of reducing flame lengths to 2 feet. The proposed treatments will result in an environment with flame lengths of between 14 feet and 69 feet, based on the same data set that was used to construct the EIS. This flame length is worse than what could be expected with the trees that exist currently.
- Does not adequately address the effects of these projects on greenhouse gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects.
- Does not adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.
- Does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them.
- Does not adequately analyze the effects on air quality resulting from the proposed plan.
- Relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that will exist the day after 100,000+ trees are cut. This is a meaningless comparison, as the EIS does not specify any means by which the project proponents will maintain the environment in this condition. Because of this, shortly after the projects are completed the fire danger will begin to increase
- Provides no evidence that eucalyptus are more flammable than low scrub oak and bay
- Doesn't include plans for removing flammable debris

- Doesn't take account of the small and large animals that live in Strawberry and Claremont Canyons, and of what will happen to each species during and after tree removal
- Doesn't indicate what will be done with all the understory of shrub, scrub oak, bay, mountain ash when shade from the large trees is gone and the trees no longer condense the fog.
- Doesn't consider meaningful past history. (Why did Angel Island begin to burn only in 2004, 2005, and 2008 -- long after the eucalyptus had been cut down in 1990-1996? What had replaced them?)

Thank you for your consideration,

Eileen Cohen
2162 North Valley St.
Berkeley, CA 94702

From: [M.V. Eitzel](#)
To: [EBH-EIS-FEMA-RIX](#)
Subject: Comments on proposed plan to cut trees in East Bay
Date: Wednesday, June 12, 2013 10:37:18 PM

To Whom It May Concern,

I am a graduate student at Berkeley in Environmental Science, Policy, and Management. I work on forest modeling in the Sierra Nevada, Coast Ranges, and Sierra Foothills.

As a Bay Area native who grew up during the oakland hills fire, I am glad to hear that there are plans for reducing fire risk in the hills, and I am in favor of at least some cutting of eucalyptus due to high fire risk. I also understand that herbicide is necessary to prevent resprouting.

I have two concerns, however.

1) I am worried about the assumption that oaks and other native tree species will repopulate these areas without any assistance. We still don't concretely know what causes slow or no oak recruitment, and it is quite likely that we'll get lots of shrubs (some of those non-native too, in particular scotch broom) growing in cleared places in a way that might not allow a forest to come back. There needs to be a plan for replanting or preventing broom invasion.

2) Fire-proofing homes and maintaining defensible space may be even more important than the species surrounding homes. I think a better use of FEMA money might include homeowner assistance in managing vegetation around the home, in combination with some treatment of the wildlands. As a homeowner myself, I understand the cost and difficulty in managing trees and other vegetation around my home. Definitely awareness needs to be raised about fire risk for individual homeowners.

Thank you for your time,

Melissa Eitzel

~~~~~

PhD Candidate  
UC Berkeley Environmental Science, Policy, and Management



# FEMA

## DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

DAVID C. ELY

CONTACT INFO (optional):

david.c.ely@sbcglobal.net

COMMENTS:

THE FEMA GRANT MONEY IS FOR THREE YEARS. WHERE WILL THE FUNDING COME FROM FOR FOLLOW-ON WORK + MAINTENANCE?

Tuesday, May 14, 2013

Richard C. Trudeau Training Center

Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

Signature and Date:

*David C. Ely* 18 MAY 2013





# FEMA

Hazardous Fire Risk Reduction, East Bay Hills, California 27

## DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

DAVID ELY [PRONOUNCED E'E-LEE]

CONTACT INFO (optional):

david.c.ely@sbeglobal.net

COMMENTS:

DOES THE FEMA GRANT INCLUDE  
FUNDING FOR THE PLANTING  
OF NATIVE SPECIES?  
IF NOT, WHY NOT?

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Saturday, May 18, 2013

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5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

Signature and Date:

 18 MAY 2013

88\_Ely\_David

**From:** [Emily Lundberg](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** 85,000 Trees in the East Bay  
**Date:** Friday, May 17, 2013 7:00:47 AM

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The trees in Strawberry and Claremont Canyon have been there for decades and hardly constitute a "hazard." But pouring 1400 gallons of herbicide on the currently pristine hills will create a real hazard, and UC Berkeley even plans to use the highly toxic herbicide "Roundup" to squelch the return of non-native vegetation.

These projects are more likely to **increase the risk of wildfires** than to reduce that risk.

By distributing tons of dead wood onto bare ground

By eliminating shade and fog drip which moistens the forest floor, making ignition more likely

By destroying the windbreak that is a barrier to wind driven fires typical of wildfires in California

By expanding the oak-bay woodland being killed by Sudden Oak Death, thereby adding more dead wood

\* These projects will **damage the environment** by releasing hundreds of thousands of tons of carbon dioxide into the atmosphere from the destroyed trees, thereby contributing to climate change.

\* These projects will **endanger the public** by dousing our public lands with thousands of gallons of toxic herbicides.

\* **Erosion** is likely on steep slopes when the trees are destroyed and their roots are killed with herbicides.

\* **Non-native vegetation** such as broom, thistle, and hemlock are more likely occupants of the unshaded, bared ground than native vegetation which will not be planted by these projects.

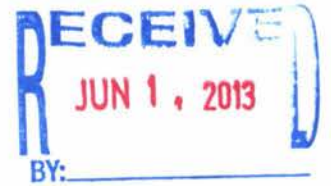
\* **Prescribed burns** will pollute the air and contribute to the risk of wildfire, endangering lives and property.

\* These projects are an **inappropriate use of the limited resources** of the Federal Emergency Management Agency which are for the expressed purpose of restoring communities destroyed by disasters such as floods and other catastrophic events and preparing communities for anticipated catastrophic events. Most of the proposed projects in the East Bay are miles away from any residences.

**These public lands belong to us and the money that will be used to implement these projects is our tax dollars -- do not cut down those trees!**

Emily E. Lundberg,

1500 Park Ave., Emeryville, CA 94608



June 2, 2013

18 Pearce Street  
Petaluma, Ca.  
94952

Dear People,

Remove those trees and you'll have greatly increased erosion potential. The understory you claim exists in a suppressed state will be destroyed by the overstory removal when large logs and brush is skidded to landings. There are other ways to reduce fire potential through removal of fuel ladders and reduction in debris on the ground using small skid steer loaders. The Park Service reduces stocking in Marin through repeated thinning going from 400 stems per acre to 100 stems acre. Complete eradication of the overstory is expensive and unnecessary. Thin out the stands carefully using methods that preserve and protect residual trees and you will reduce wildfire potential.

By the way the State Parks removed 90% of their eucalyptus on Angel Island and still had a very large wildfire burn a lot of the island. The fire burned with great intensity in the pyrophytic native chaparral and coastal sage scrub. Are you sure you won't be creating an "Angel Island Scenario" for the future in your East Bay Tree Removal Plan?

Don't spend money unwisely. Get your money to the state of Oklahoma and the Tri State areas of New York, Connecticut and New Jersey.

Sincerely,  
Peter Ehrlich  
Sonoma County, California

A handwritten signature in black ink that appears to read "Peter Ehrlich". The signature is fluid and cursive.

June RECEIVED  
 JUN 14 2013

To: F.E.M.A.

I am writing to protest the removal of the eucalyptus trees on the east bay university land and the regional parks.

Berkeley has been home for most of my life and I have enjoyed the trees as well and admired the importance of them for controlling erosion of soil.

It was especially noticeable when trees were cut in Claremont Canyon; roads were closed and traffic at the tunnel was more than impossible.

Naturally, you will recall that the eucalyptus trees were planted for wind breaks. In areas where the trees have been removed the wind problem has been extremely difficult.

In view of the management of soil and wind it seems sensible and reasonable to cut the underbrush often and even spray fire retardent but leave the trees in place.

Sincerely  
 Mrs. Barbara Ambrie

**From:** [Jenny Falcon](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** FUNDING FOR TREE REMOVAL  
**Date:** Friday, June 14, 2013 9:14:30 AM

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Dear FEMA,

I am opposed to the plans for tree removal in the Oakland/Berkeley area. I believe it will disrupt a fragile ecosystem, add toxic herbicides to the environment and displace all types of flora and fauna.

The trees in this area are a part of our history that should be preserved and appreciated. People start fires, not trees.

This taxpayer money would be better spent doing seismic retrofitting of older buildings in the area, especially for low income people.

**I am an Oakland fire survivor who lost family in the 1991 firestorm.**

Sincerely,

Jennifer Falcon  
4068 Everett Ave  
Oakland CA 94611  
510-482-2115



# FEMA

Tuesday, May 14, 2013

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Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

## DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

Bobbi Fayerabend, landscape architect

CONTACT INFO (optional):

bobbi@fulanddesign.com

COMMENTS:

Under "Potential Environmental Effects" you list "removal of non-native" vegetation. Native plants are outside the parameters of what should be considered for fire safety work. A native plant is NOT necessarily fire-resistant. Many CA native plants require occasional fires to regenerate the species. An example →

Signature and Date:

Bobbi Fayerabend 5/18/13

97\_Fayerabend\_Bobbi



# FEMA

### DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

Bobbi Fayerabend, landscape architect

CONTACT INFO (optional): \_\_\_\_\_

Tuesday, May 14, 2013

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COMMENTS:

*I am appalled that FEMA would consider the use of the chemical ROUNDUP for fire suppression. This chemical is pervasive in our world today. Many unfortunate results from the use of this chemical blend are becoming known. This chemical may be the DDT in our future.*

Signature and Date: DO NOT USE ROUNDUP.

Fayerabend



**From:** [Bob Flasher](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Input on East Bay Fuelbreak Hazardous Risk Reduction  
**Date:** Saturday, May 18, 2013 3:04:54 PM

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FEMA.

Please take the following into consideration when deciding whether or not to fund the fire risk reduction in the east bay hills.

RECOMMENDATION TO SUPPORT A MORE CREATIVE OPTION THAT WILL REALLY MAKE A DIFFERENCE FOR HAZARDOUS FIRE RISK REDUCTION ACTIVITIES IN THE EAST BAY HILLS. SHORT OF THAT, THE "NO ACTION" ALTERNATIVE IS THE MOST SENSIBLE COURSE OF ACTION.

I was a member of the original EBRPD crew that cut the east bay fuelbreaks in the 1970s. I have come to believe that this was a mistake. It would be an even bigger mistake to throw more money at the fuelbreaks at this point. Since then, I have been a Ranger/Wildland Firefighter and was one of the firefighters at the 1991 Tunnel Road Fire. This fire reminded me of the ones I saw as a kid growing up in LA, where east-wind-driven fires leapt 12-lane freeways and burned all the way to the Pacific. While I was on the 1991 fire with my crew, looking at the path of the fire, I said, "If the wind doesn't stop, this fire will burn all the way to the bay." Fortunately, the wind stopped and we were able to extinguish the blaze.

Background from the perspective of a wildland/urban interface firefighter: Since the first FEMA grants in the 1970s, the EBRPD, City of Oakland, and UCB have collectively spent over \$50 million to maintain the fuelbreaks. This is money that could otherwise have been spent maintaining our public parks, providing healthy outdoor recreational experiences, hiring the unemployed to do vegetation management on the urban interface, and increasing public safety services. The three agencies are hoping that FEMA will once again throw money at the problem like they did in 1973. But the proposed logging, herbiciding, goat grazing, and prescribed burning will actually do little to make the urban interface safer. In fact, the 10 years of follow-up herbiciding with Garlon or Roundup will make it way unhealthier for people and wildlife.

Historic perspective: Since 1923, 15 large fires have burned through the east bay hills. In total, they burned over 9000 acres, over 3600 homes, and took 26 lives. The 1991 Tunnel Road fire was responsible for most of this, destroying 3000 homes and taking 25 lives. The real issue with large wildfires is that they occur when Diablo winds are blowing from the east at 40-60 mph. These fires are impossible to stop until the wind dies. No fuelbreak will protect the urban interface from these wind-driven fires. All the current FEMA proposal will accomplish is a temporary reduction in vegetation, the application of diesel-based carcinogenic and mutagenic herbicides over close to 1100 acres of parklands, the erosion of topsoils by goats grazing on steep slopes afterwards, the destruction of habitat for dozens of native animal species, and the creation of a false sense of security.

When the fuelbreaks were first developed, they were a well-intentioned mistake. The "dead" eucalyptus trees were still alive and re-sprouted months after the original FEMA monies were being spent to log them off. If the trees had been allowed to remain, and the forest managed similar to those in Australia, we wouldn't have the need for the current

request. The trees would have continued to shade the ground, preventing the current growth of flammable chaparral communities. Fog drip from the eucalyptus would keep the understory moist and fire-resistant. The forest floor could then have been burned periodically before the eucalyptus duff reached dangerous levels, as they do “down under.” This could be done on a rotating basis at times of the year when the maximum species of wildlife would be protected and citizens would breathe the least amount of smoke. If we had taken this course, the homes in the nearby fire zones would be safer today.

Bottom line: The current FEMA grant proposal requests funds for fuelbreak maintenance that will provide close to zero protection during the Diablo wind events that lead to the most catastrophic fires in the East Bay hills. During normal weather conditions, these fuelbreaks basically only protect the parks from fire—not local homes and business districts. There are several other significant problems with the current proposal:

- The current proposal is to remove exotic trees, many of which provide significant wildlife habitat for many species of raptors, songbirds, rodents and amphibians. The rodents in particular, form the basis of the food chain that supports many other species of significant wildlife that the parks have pledged to protect.
- Removal of trees allows sunlight to reach the ground, which in turn leads to the growth of very flammable grassland and chaparral communities filled with undesirable invasive weeds—not wonderful natives that magically recruit themselves as stated by the three agencies. These plant communities, as well as re-sprouting eucalyptus and acacia trees, require regular controlled burns or repeated application of toxic herbicides to prevent re-sprouting, the first of which harms air quality and the second of which violates the EBRPD’s IPM policy, pollutes topsoil in our parks, and is toxic to wildlife. Why propose a plan that will lead to the application of herbicides to over 11 miles of fuelbreak in public parks?
- The increase in acreage of the fuelbreaks being proposed will actually lead to a greater percentage of park, city and university revenues spent to maintain them. This will inevitably deplete monies that would otherwise be spent on more important services like sanitation, recreation, education and public safety.

Alternative: I recommend that FEMA choose a middle course, one that makes sense financially, ecologically, and realistically. An option that is not being offered, but which would really improve safety—instead of just giving the appearance of doing so—would be to spend FEMA monies to help homeowners retrofit their homes and cut down unnecessary flammable vegetation on their property.

Other essential improvements might include:

- undergrounding of utilities along the main arteries that could serve all areas of east bay cities as escape routes during an emergency; decent escape routes would have saved most of the lives lost in 1991.
- creating a firefighter reserve force to augment current staffing and fill in for vacancies created by leaves of absence; more available firefighters might be able to stop small fires before they grow or at least “babysit” fires that have been controlled so they don’t burst into flame the next morning and destroy lives and homes
- encouraging citizens to take CERT classes to merit neighborhood disaster cache supplies, particularly in underserved neighborhoods; this will bring more focus to preparing in advance for disasters

- providing economic incentives that encourage homeowners in the fire zones to install double-paned windows, Class A roofing, and remove unnecessary vegetation; defensible homes are way more essential than removing forests in enabling control of wildfires and protection of lives
- implementing some combination of widening narrow, winding streets in the fire zone, requiring off-street parking, or installing “no parking” signs along one side of these streets to allow access by emergency vehicles and egress during evacuations

As citizens pointed out at the public meetings, we choose to live next to the parks in a state famous for its earthquakes. Why should FEMA and nationwide taxpayers pay for the risks we have voluntarily decided to take? But if money were to be spent, fire-proofing properties, setting limits on vegetation allowed in urban interface fire zones, and creating safe escape routes are the only hope of slowing the destruction of these catastrophic fires and allowing safe and efficient evacuation of citizens. Saving lives is way more important than throwing money at fuelbreaks that have very limited utility, provide a false sense of safety, and have many toxic, negative side-effects.

Bob Flasher

Former Ranger/Wildland Firefighter with EBMUD and EBRPD

California Facilitator of Firewise Communities

Current member of Berkeley’s Disaster & Fire Safety Commission

Member of EBRPD’s Fuelbreak Crew from 1973-1977

(All the above are provided as information; I am providing my own perspective with this letter)



5 June, 2013

EBH-EIS-FEMA-RIX  
PO Box 723379  
Oakland, CA 94612-8579

I would like to take a minute to voice my concerns over the proposed clear cutting of nonnative trees and use of pesticides as a means to reduce the threat of wildfires in Strawberry Canyon and adjacent areas in the Oakland and Berkeley Hills.

My initial thoughts on this proposed plan is that it's very extreme. While I can understand the concern surrounding overgrown forested areas near homes, the UC Berkeley campus and research facilities, this recommended plan of action seems to ignore key features of sane, safe and sustainable forestry. The overly liberal use of pesticides, the apparent misunderstanding of how forests and animals adapt to invasive species and the threat of erosion are the main points I'd like to address.

First, as far as the use of pesticides, I've read different figures regarding the amount of pesticides that will be used to prevent nonnative trees and brush from growing again. But the one thing these different figures have in common is that they are all absurdly high. Dumping tens to hundreds of thousands of gallons of herbicide in the proposed areas poses a grave threat to the wildlife who make their homes in these regions. Moreover, in an era where pesticide use has been proven to contribute to the massive loss of vital insect and amphibian populations and is being fiercely debated in other parts of the state and the country (i.e. the ongoing debate over the role of herbicides in the collapse of key bee colonies), this liberality with highly toxic chemicals seems very short sighted. The sheer numbers are mind numbing. Dumping these large amounts of herbicide could have larger unintended consequences affecting local animal and human food chains and industry in ways we cannot grasp at present.

Secondly, the plan to destroy nonnative species is in itself flawed, as it fails to account for how plant and animal species adapt to 'invasive' species over time. While in general I support conservation efforts to preserve and restore Native California plant and animal species, I also believe these efforts needed to be guided by reason. In the areas where the proposed tree removal will take place, plant and animal species have been adapting for at least a couple centuries. This change commenced with the advent of the first Spanish settlers and continues to this day. For the most part this adaptation has been a gradual process, working over long periods of time. Suddenly gutting the forest of nonnative trees and toxifying the forest to ensure their ultimate death would be a much more sudden and dramatic change that, again, could alter these tenuous ecosystems in ways we can't predict. More importantly, it would upset the balance adapting species have patiently pursued over the last couple centuries by destroying key habitats.

Lastly, the plan as it stands seems to assume that, once trees and plants are removed, the earth and soil will just of its own accord stay put. Forests and hillsides are in a constant state of flux, and it's often only the deep network of a healthy forest that

keeps a hillside from sliding. The plan as it stands would be like an architect deciding to suddenly rip up the foundations of a structure without any sort of contingency. We'd all agree that such a contractor had lost his mind. While this analogy may not play out in the short term, in the long term the proposed plan is essentially as crazy. Even the slight contingency written into the proposal doesn't seem to account for the fact that forests and hillsides are mobile, living entities and not static, and so take very little account of the possibilities of drastic erosion and hill slides over longer periods of time.

There's more I object to in the proposal but these are the salient points. I also firmly believe that all the objectives sought after - as far as reducing the danger of wild fires - could just as easily be obtained by more traditional forestry methods, without resorting to the mass destruction that herbicides would undoubtedly wreak upon these natural resources.

Thank you,

Sam Foster

**From:** [Jamey Frank](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills EIR  
**Date:** Sunday, June 16, 2013 5:14:34 PM

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Please do not fund a futile Native Plant restoration project that will only increase the fire hazard by:

Destroying the wind-break;  
Converting living trees into dead fuel on the ground;  
Reducing landscape moisture from fog drip during the summer; and  
Encouraging the growth of more-flammable plants.

It will also use thousands of gallons of toxic pesticides on steep hillsides where they can get into the watershed. It will release carbon emissions on a huge scale. This project is not only environmentally destructive, it is a waste of funds that should be used to actually reduce hazards, not increase them.

Approve the No Project alternative.

Sincerely,

--Jamey Frank, San Francisco

**From:** [Rasjidah Franklin](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [Rasjidah Franklin](#); [Carole Swain](#)  
**Subject:** Deforestation in Oakland Hills  
**Date:** Friday, June 14, 2013 8:46:44 AM

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This proposed project is unacceptable. We moved to the Oakland hills in order to live in a forest and enjoy the wildlife which lives in it. The deforestation project you propose will ruin the beauty of the area, destroy the environment which supports deer, owls, coyotes, foxes and numerous other species, will promote mud slides which will endanger my home and will poison our groundwater. Please stop your disastrous plan to rape our hills!

Dr. Rasjidah Franklin  
6421 Heather Ridge Way  
Oakland, Calif 94611

Sent from my iPad



**From:** [Nicholas Galloro](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public Comment  
**Date:** Monday, June 17, 2013 6:36:27 PM

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To Whom It May Concern:

I am interested in removing the Eucalyptus trees from the East Bay Hills and East Bay Area because they constitute a clear and dangerous fire hazard. However, I do not agree with the use of pesticides to stop them from resprouting. First, these pesticides are hazards to people and native species. Second, hiring workers to manage the sprouts either by destroying the stumps or pulling up the sprouts would give jobs to many people who are sorely in need of work. I only see a need for herbicides in those areas that are too steep to be reached by people.

Sincerely yours,  
Nicholas Galloro  
2122 Sacramento St.  
Berkeley, CA 94702

**From:** [Mauricio Garzon](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Re: East Bay Hills Environmental Impact Statement  
**Date:** Tuesday, May 28, 2013 12:07:57 AM

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I would like to attach this reference to my opposition to the FEMA proposal for EBH fire mitigation as currently outlined:

April 25, 2013 (Reuters) - Heavy use of Roundup, could be linked to a range of health problems and diseases, including Parkinson's, infertility and cancers, according to study.  
<http://www.reuters.com/article/2013/04/25/roundup-health-study-idUSL2N0DC22F20130425>

On Mon, May 27, 2013 at 8:54 PM, Mauricio Garzon <[mxgarzon@gmail.com](mailto:mxgarzon@gmail.com)> wrote:

I would like to express my strong opposition to the FEMA proposal for EBH fire mitigation as currently outlined. The plan presents an excessive use of herbicides for this area. there is significant concern about the toxicity of glyphosphate not only for myself and my dog, but for the various creatures and kids that use the land as their sanctuary.

There has been insufficient notice to the public about this plan. I hike the hills several times a week and have just started hearing about it, and I can tell you there are many, many people who are outraged they have not been notified about this in time to attend the public hearings.

If you move ahead with this plan as is, you're going to have an outpouring of anger from the community as people become aware of the proposal.

Fire mitigation can be achieved with alternative methods, which have been posted online and will be much less destructive and poisonous to the parkland many of us consider our sanctuary and public treasure.

**From:** [Gelles R.](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Tree Removal in Oakland and Berkeley hills  
**Date:** Friday, May 17, 2013 12:24:11 PM

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It is with disbelief that I read of the program to remove the trees in the Strawberry and Claremont canyons. This type of removal will destroy the natural beauty which anyone who travels in these areas loves. If there are fire hazards, selective cutting would be an appropriate approach.

To put over a thousand gallons of Roundup insecticide on the ground will contribute to soil sterility. Why on earth would 2 feet deep wood chips be deemed appropriate to avoid erosion - the chips will simply move down the hill and erosion will only be delayed on all hillsides.

As a UCB graduate, I am ashamed that the Forestry Department hasn't come up with a better solution.

Please stop this ill conceived plan to destroy ecologically established habitats - an area enjoyed by thousands yearly and millions over the years.

Kate Gelles

**From:** [paul gilbert](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [Gilbert, Jaine M](#)  
**Subject:** restoration of ancient redwood habitat  
**Date:** Friday, June 14, 2013 8:07:52 PM

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Dear U.C.,

According to the east bay express there are no plans to replant redwoods after the large scale removal of non-native trees in the strawberry canyon area.

It is a fact the redwood groves create their own eco-system. Please start mapping the area for the best physical geography , within the affected area , that can sustain new groves of redwoods.

The scientific evidence that redwoods are the best trees to grow in this area is overwhelming because they FIX water in the soil and create cooler micro climates.

From a fire management redwoods are the best ecological solution.

There many other reasons why redwoods are most appropriate tree to plant including there iconic status in both Berkeley and California.

Thank you, Paul Gilbert ( concerned citizen )

Sent from Windows Mail

**From:** [Art Goldberg](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills Clear Cutting  
**Date:** Monday, June 17, 2013 7:51:11 PM

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I strongly protest and urge FEMA not to fund the proposal by the City of Oakland, the EBRPD and UC-Berkeley to clearcut thousands of trees in the East Bay Hills.

The proposal ignores the fact that the East Bay fire in 1991 started in an open area above the Caldecott Tunnel, with no trees around. It was spread by winds into the trees, but the fire did not start in the trees. EBRPD acknowledged this fact by employing a herd of goats several years ago to eat the underbrush, which was considered a more likely source of another fire than the trees.

The people of this area have spoken often and loudly against clear cutting and against the use of herbicides, as proposed in the tree removal plan. Furthermore, denuded hillsides frequently lead to mudslides in the rainy season.

I have serious doubts that if FEMA allocates the billions of dollars the applicants request, it will be used for the purpose intended. The City of Oakland is a financial mess, and I can see many millions of dollars of FEMA money going to other purposes. Likewise, UC-Berkeley has tremendous financial problems, notably its inability to raise enough money to pay for its retrofitted football stadium and high performance gym. Here again, I see FEMA money going to unintended uses.

I believe people in the East Bay would welcome a plan that gradually cuts down trees deemed to be hazardous over a 10-12 year period, and couple it with a vigorous replanting program. The idea that only native plants be used in replanting is ridiculous. Many different kinds of trees can grow here and would be welcome. Redwood trees, which used to cover these hills would be particularly welcome, but I don't see much of a replanting agenda in the proposal.

For these reasons and several others, I strongly urge you to reject this plan.

Art Goldberg  
1814 Cedar St.  
Berkeley, Ca.

94703

**adgoldsmith**

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**To:** EBH-EIS-FEMA-RIX@fema.dhs.gov  
**Subject:** Cutting down thousands of trees considered to be a fire hazard

Dear Staff Members and Administrators:

Please reconsider this latest proposal to cut down thousands of trees; and, to pour pesticides to prevent any regrowth of trees. These trees help to reduce the horrific pollution in the Bay Area. And, they provide habitat for a multitude of animals and birds in this area.

Fire prevention was never meant to involve devastating the environment, to solve the issue of fire danger. Many of us think there are far too many pesticides being utilized on our planet already. To have more harmful toxics draining into the soil and into our streams, which empties into the San Francisco Bay, is not the best kind of fire-management, nor is it healthy for humans and other forms of animal-life.

Thank you for considering different points of view on this important issue.



Very truly,  
*Alyn Goldsmith*  
(Mr.) Alyn Goldsmith  
326 Watson Hollow Drive  
Rio Vista, CA 94571

e-mail address: [adgoldsmith@frontiernet.net](mailto:adgoldsmith@frontiernet.net)

**From:** [Galina Gorodetsky](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Fwd: I'm asking you to do something again:  
**Date:** Monday, June 17, 2013 9:50:01 AM

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----- Forwarded message -----

From: <apglk@comcast.net>  
Date: Sun, Jun 16, 2013 at 4:13 PM  
Subject: I'm asking you to do something again:  
To:

Today is the last day for the public comment on the East Bay tree cutting plan - about half of million of them. I've written a short letter. If you can just e-mail it from yourself (or change it if you feel like it - thereis plenty of the information in the link below) - it would be great.

Here is information about the project (with all the related links):  
<http://sfforest.net/2013/06/16/action-alert-today-comments-due-on-the-east-bay-tree-felling-plan/>

And if you haven't signed the East Bay petition I'm including the link here separately:  
[http://petitions.moveon.org/sign/stop-the-deforestation-3.fb28?source=s.icn.fb&r\\_by=2464736](http://petitions.moveon.org/sign/stop-the-deforestation-3.fb28?source=s.icn.fb&r_by=2464736)

Thank you,  
AG

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From: apglk@comcast.net  
To: EBH-EIS-FEMA-RIX@fema.dhs.gov  
Sent: Sunday, June 16, 2013 3:35:26 PM  
Subject: Public Comment DEIS: Hazardous Fire Risk Reduction - East Bay Hills

Public Comment

Draft Environmental Impact Statement

Hazardous Fire Risk Reduction - East Bay Hills

It's an outrage that FEMA is even planning to waste public money to cut the hundreds of thousands East Bay trees. The project which would increase -not decrease - the likelihood of the fire.

It looks like FEMA does not work for the people of the US but instead for chemical companies peddling their poisons, and the tree cutting companies earning big profits from the government contracts.

Here is a short statement against this criminal project.



It is estimated that almost half a million trees in the East Bay would be killed if the project is implemented. It actually is a futile native plant restoration project not a hazardous fire risk reduction project.

The fire risk will be increased due to:

- Destruction of the wind-break;
- Conversion of the living trees into dead fuel on the ground;
- Reduction of landscape moisture from fog drip during the summer;
- Encouraging the growth of more-flammable plants.

In addition to the increased fire hazard the project will damage the environment in many other ways:

- The trees will no longer store carbon; instead, dead trees will be releasing thousands of tons of it into the atmosphere. The Draft EIS understates the effect on carbon sequestration by ignoring the carbon stored in the branches, leaves, and roots of the felled trees, and in the soil: 80% of the actual carbon emissions caused by the project may have been ignored.
- The air quality will suffer - the live trees eliminate air pollution – the dead trees do not. Prescribed burns will further affect air quality, and could get away and cause wildfires and serious damage.
- Thousands of gallons of toxic herbicides will be spread over the East Bay. They will be used on steep hillsides where they can easily get into the watershed. There are epidemiological links of these herbicides to cancer and other significant health problems.
- Erosion and landslides could occur on steep slopes when the tree roots no longer stabilize the ground.
- Increased wind speeds with the loss of wind-breaks will affect quality of life, and likely cause the wind-throw of non-targeted trees.
- Birds and animals residing in the forests will be killed by poisons and the loss of habitat.

The NO PROJECT alternative is the only acceptable one. It is bad enough that so much money has already been wasted on this EIS.

I am signing this letter in full support of the content  
Galina Gorodetsky

Sincerely,

name, address (or just name)

**From:** [B.Gray](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Nix the FEMA EIS  
**Date:** Friday, May 17, 2013 7:06:14 AM

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**Subject: FEMA plans for fire control "clearing" of Strawberry Canyon and Claremont Canyon:**

Cutting down thousands of trees -- which provide soil moisture, and erosion control and assist the watershed of Strawberry Canyon, and then polluting the natural landscape with enough Glyphosate (Roundup) for weed control is a terrible idea.

Adding Roundup=Glyphosate=Poisoning our local watershed?

A peer-reviewed report, published last month in the scientific journal Entropy stated: "Negative impact on the body (of glyphosate) is insidious and manifests slowly over time as inflammation damages cellular systems throughout the body.

First reduce soil control and natural ecosystem for water drainage by cutting thousands of trees and then poison the soil?

Where is your research on the long-term human as well as ecological effects. What an ill-thought proposal.

Bettina Gray  
1700 Shattuck Ave #59  
Berkeley, CA  
Berkeley resident since 1970

**From:** [Christie McCarthy](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EB Regional Park eucalyptus removal: YES  
**Date:** Friday, June 14, 2013 11:30:03 AM

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We strongly support the proposed removal of eucalyptus trees. These trees are fire hazards, and given our experience in the Hills Fire, we would be very naive to NOT take advantage of this opportunity to replace eucalyptus and Monterey pines with alternative native flora.

Best,

Christie & David McCarthy  
6000 Ocean View Drive  
Oakland CA 94618

**From:** [Anna Griffin](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills EIS  
**Date:** Thursday, June 13, 2013 3:53:43 PM

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June 12, 2013

Dear FEMA,

I'm writing in reference to the FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills. This document is a totally misguided and deeply flawed attempt to deal with the very real danger of fire in the East Bay hills, and is unacceptable in its current form. I encourage you to retract and revise this plan to assure that our taxpayers' money is spent on effective, reasonable fire mitigation measures, and not ones that are destructive to the ecosystems they purport to protect.

In particular, the UC proposal to cut down nearly 60,000 non-native trees in the Strawberry/Claremont Canyon and ridge areas, with no provisions for replanting of native vegetation, and with repeated applications of toxic herbicides to prevent resprouting is completely unacceptable. Let me enumerate just a few of the reasons why this is a terrible idea.

**Habitat:** Great horned owls nest in these trees, as do other raptors, keeping rodent populations in check. These trees also hydrate the hills environments, creating shade and fog drip which moisten the forest floor, even during the dry season. The stands of tall trees create wind breaks, which are an essential part of *slowing* fire spread in a wind-driven fire. The trees anchor hillsides and the steep slopes of the canyons; without their canopy to diffuse the raindrops, every rainstorm will erode the shorn ground and add to the silting of the creeks. These trees' shading *prevents* the growth of the fire-prone, invasive non-native grasses and shrubs such as broom, thistle, blackberry and hemlock, which will quickly fill the bare, unshaded ground if the UC plan is implemented.

**Air quality:** With global warming accelerating, and carbon dioxide recently found to exceed 400 ppm in the atmosphere, how can cutting down over 80,000 trees be a good idea? These trees sequester greenhouse gases, they remove carbon dioxide from the atmosphere, they transpire moisture back into the air, they shade and cool the earth. In addition, the current EIS allows for prescribed burns and a mammoth chipping operation, both of which would release enormous amounts of greenhouse gases into the environment. These chips, to be left on site, create a mulch layer which is itself a fire hazard.

**Toxicity:** Four different toxic herbicides are proposed for this project - Roundup, Stalker, Garlon 4 Ultra (from the Garlon 4 Ultra MSDS: "...highly toxic to aquatic organisms...; "Prevent from entering soil...waterways and/or groundwater"; "decomposition products can include...: hydrogen chloride, nitrogen oxide, phosgene." (All toxic)) and Garlon 3A - to be applied over a period of as long as ten years. The claim that none of these poisons will make their way down the watershed into the creeks, or that they will have no adverse effects on recreational users of the parks, or nearby residential communities, is pure wishful thinking. Even with all the mitigation precautions outlined in the Draft EIS, thousands of pounds of chemicals,

applied by many users over many years – it takes only one unanticipated rainstorm or rogue windstorm to carry these outside the arbitrary boundaries we imagine we have set.

Yes, we have a wildfire hazard in the hills. And, yes, if we cut down all the tall trees, they won't be there to burn. ("We must kill the patient to save the patient.") But we can achieve an equivalent mitigation outcome with much less drastic – and damaging – interventions.

The East Bay Regional Park District has found that selective thinning of non-native trees, combined with regular removal of understory fuels, is an effective fire mitigation strategy. When there are ground fuels in abundance, (this could include the 20+ inches of wood chips the UC plan would leave on the ground) they provide ready fodder for a fast moving fire. These ground fuels were a major source of the rapid spread of the 1991 fire in the hills. If these had been controlled, we would not have had the laddering effect that led to torching and crown fires.

What I am proposing is a series of amendments to the Draft EIS that incorporate these alternative solutions to fire mitigation. The current version is an invitation to habitat destruction and has the potential to *worsen* the fire danger by removing wind breaks and creating more ground fuel.

The choice is not between wildfire destroying our homes, or razed hills and herbicides in the hills. These are false extremes. The East Bay hills, with their stands of trees, rolling hills and beautiful watersheds, are a model to other urban areas, many of whom have lost their natural landscapes to development. We can reduce fire danger *and* maintain the best aspects of our green belt, with selective thinning and understory removal.

One of the least quantifiable aspects of this Draft EIS is what our woodland "management" will do to the recreational and aesthetic qualities of the tree-covered hills that hug our eastern borders. Walkers, hikers and joggers, school groups and families, dog owners and bird watchers, all are regular users and appreciators of the East Bay hills. These tree-covered slopes are a treasure worth saving. When fewer urban kids have contact with trees and nature, we risk raising a generation of young adults who will not value the preservation of wildness and natural settings. And that would be a loss to us all.

Sincerely,

Anna Griffin

626 El Dorado Avenue, Apt. 1

Oakland, CA 94611

**From:** [Guy Karen Benveniste](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Berkeley hills FEMA project (UC Berkeley/Oakland/  
**Date:** Sunday, June 02, 2013 5:51:51 PM

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We, the undersigned respectfully request that this project be reviewed in light of the following:

- 1) A large number of Berkeley citizens strongly object to the use of herbicides to control regrowth. Ordinary forestry maintenance should be considered.
- 2) Removal of large swathes of trees is overkill, has many ecological repercussions and unnecessary. Selective removal is preferable to maintain balance. Native trees should be protected as much as possible.
- 3) Funding for more fire fighting capability should be added. For example insuring that fire hoses of distant fire fighting units can be used on local fire hydrants. In 1991 this lack of coordination was a significant problem.

Guy Benveniste  
Karen Nelson Benveniste  
150 Montrose Street  
Berkeley CA 94707

From: [Margaret Hall](#)  
To: [EBH-EIS-FEMA-RIX](#)  
Subject: Comments to FEMA  
Date: Sunday, June 16, 2013 7:05:11 PM

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To: FEMA , draft EIS comments, East Bay Hills Fire Mitigation Project

From: Marg Hall; 1927 Fairview St; Berkeley Ca 94703

510-654-1366

**1. The alleged benefits of this proposal do not justify the risks. There is no accounting required from applicants for a-long term plan.** One kind of landscape with specific fire hazards will be replaced by another landscape with different fire hazards. Additionally, there will be the added hazard of herbicides. There is a great deal of uncertainty about precisely what kinds of plants will spontaneously grow once the massive tree cutting occurs, and what kind of fire hazard the new vegetation will represent. To maintain a completely barren land scape will require massive and long-term applications of herbicides. This was the landscape assumed in the fire modeling. It appears that this will be the path chosen by the applicants for fire management many years into the future, since that is likely to be the quickest and easiest way to suppress fuel and “non-native” vegetation when the tall trees are removed. If that is not the plan, then the fire model must reflect an accurate post project landscape, and a more accurate level of fire hazard.

**2. There is not enough research on the short and long-term effects of the proposed herbicides to justify a claim that they are safe.** There is growing evidence of widespread chemical contamination of water, soil and air in our environment and in our bodies. There is also evidence that this is a threat to human health in a multitude of mechanisms scientists are just beginning to understand. Many medical experts and scientist agree that the current regulatory framework is faulty and out of date. The toxicology screen in the EIS is based upon standards woefully inadequate to truthfully determine safety. Pesticide regulators rely on safety date submitted by manufacturers, who provide a very minimal level of research in order to



gain approval for use.

Recently published research (Annals of Family Medicine; July-Aug 2012) found that 1:5 patients met criteria for chemical intolerance. This figure is consistent with other estimates of the prevalence of this condition in the population. You have failed to investigate the extent to which this project will do further harm to the health of these individuals (a significant and growing sub-population) and the ways in which it will create a barrier to our use of public parks. As a result, a decision on your part to implement this plan with no investigation whatsoever of this impact, would constitute a violation of the Americans with Disabilities Act.

In addition, the draft EIS minimizes the risk to human and animal health by refusing to require an accounting from applicants for long-term herbicide use. Why not project 10, 20 or more years into the future, assume several spontaneous re-vegetation scenarios, and then attempt to quantify and evaluate the types and amounts of herbicides that will be used? Furthermore, by calculating exposure on a lb/acre basis, the EIS grossly underestimates exposures to local concentrations of herbicides that are sure to occur.

Once 100-year old trees are cut down, there is no going back. Returning the tall old trees is not possible. The consequences of massive tree removal are so grave for all of the animal species that use or live in this area, including humans, that the burden of proof must be very strong in the direction of ensuring long-term safety.

*I urge you to do a more long term and comprehensive human health impact assessment of this proposal, including a detailed examination of the following: what are long term cumulative effects of exposure to these chemicals, how multiple chemicals (including so called "inert" ingredients) interact with each other, the persistence and hazard of these chemicals as they break down into other ingredients, and how these mechanisms could affect the health of children and people living with chemical sensitivities, respiratory illness and compromised immune systems.*

### **3. The EIS has failed to properly weigh the impact of this**

**proposal upon climate change.** One of the 5 primary FEMA funding criteria stipulates that proposals for hazard mitigation funding must be consistent with the State Hazard Plan (SHMP). The state plan accepts the fact that if it is not reversed, climate change will INCREASE fire hazard. Cutting thousands of trees, 85,000 or 400,000, depending upon the methodology used, is an irreversible act and will destroy hundreds of thousands of tons of sequestered carbon and contribute to greater fire hazard. We are going in the wrong direction!

#### **4. The fire hazard mitigation assessment is biased.**

Nothing in this proposal, if implemented, would have prevented the actual fire that occurred in the Oakland Hills in 1991. That fire started in a densely populated residential area. It moved quickly through this area because of wind and temperature, topography, climate, and hazardous fuel conditions in very close proximity to houses-many of which provided a fuel load because of their construction details. The parkland areas targeted in this plan did not contribute to that fire.

The fire model used in the draft EIS addresses flame height and the spread of fire through firebrands, but does not address some of the specific hazards that led to the disaster in 1991. (dead wood on the ground from a winter freeze ignited a crown fire, combined with a fuel load of combustible houses densely situated in the midst of poorly managed vegetation) Those hazards could be mitigated through careful management of vegetated areas, removing wood roofs and decks, and maintenance of defensible space. If funded, this proposal will destroy and poison public lands in order to mitigate a hazard created in part by the choice of individuals to build in the urban-wild land interface areas. The inability of local government to effectively manage lands, enact and enforce reasonable codes with respect to defensible space, and require the retrofit of combustible construction in existing hillside buildings is no justification for implementing this dangerous shortcut to hazard mitigation.

The fire model does not weigh the fire related benefits lost by this plan: ie loss of the tall trees that capture a tremendous amount of moisture from fog, the suppression of undergrowth fuel by eucalyptus trees, and the potential of these trees to provide a windbreak during

fire.

The flame heights and firebrands count in the fire model is based upon the situation immediately after the massive cutting and mulching. Surely, it makes sense to have some modeling done 10 or 20 or more years later in order to have a more truthful basis for comparison. If those projections are done, flame height and firebrand counts will dramatically increase. That would provide a fairer basis upon which to judge the value of this project.

Finally, the fire model only quantifies firebrands released, and does not consider where they land. This plan will increase the ignition potential of the landscape by the addition of large areas of highly combustible horizontal surfaces (grasslands and brush).

**5. This plan is an attempt to further native plant restoration in the name of fire hazard mitigation.** After the 1991 fire, the mayors of Oakland and Berkeley convened a panel of scientists, fire experts and citizens to make recommendations on fire hazard mitigation. They recommended the following: "The most important factor in reducing fire danger from vegetation is not removing specific species but **regular on-going maintenance**. ...The current emphasis on Blue gum (*Eucalyptus globulus*) and Monterey pine (*Pinus radiata*) as primary culprits in the recent fire, and calls for quick removal of them, are an oversimplification that can lead to negative environmental consequences."

If the applicants want to undertake a massive native plant restoration plan, then they shouldn't use fire hazard mitigation funds as an excuse to further this goal.

This is plan is ill-advised and a very poor use of taxpayer's money. The community is deeply divided on the wisdom of this project. The draft EIS should reflect more accurately the true health and environmental hazards, and the lack of consensus among fire scientists about the alleged benefits of this precipitous action plan.



**From:** [Susan Harleman](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Environmental Statement on Strawberry and Claremont Canyons Project  
**Date:** Sunday, June 09, 2013 5:03:04 PM

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Dear Environmental Impact Statement Review Committee:

I am writing to express my deep concern over the Environmental Impact Statement concerning the proposed project to cut thousands of trees in the Strawberry and Claremont Canyons. The proposed project and supporting Environmental Impact Statement fail to take into account the incredible environmental harm the project will do. The harm includes:

- willful destruction of a fully functioning environment
- destruction of a meaningful and active habitat for animals
- creation of an even more dangerous fire hazard: acres of dry grass
- incredible misuse of gallons upon gallons of herbicide
- misuse of government funds intended for "emergencies"
- misplaced support for a "native only" plant/tree policy
- intrusion into the local preferences of canyon neighbors and canyon users
- destruction of an 100 year old existing ecosystem
- increasing risk of flood and water damage by eliminating trees
- increasing fire hazard with creation of a 24 inch layer of cut trees
- eliminating shade on virtually all well used paths, roads, etc.
- interfering in local land use decisions in favor of a university

I could go on and on with a longer list of concerns, but my biggest concern is that you take an more extended and comprehensive look at all aspects of the proposed plan to eliminate thousands upon thousands of perfectly healthy trees from a well functioning and frequently used environment that will be destroyed by such a mindless act.

I urge you with all my heart to not support this proposal with any funding whatsoever. As Ralph Waldo Emerson noted, "the happiest man is he who learns from nature." All of us who live and learn from nature in the Strawberry and Claremont canyons plead with you to listen to the call of nature who does not benefit from such mindless destruction.

Sincerely,

Susan Harleman  
510 517-5996

**From:** [Bob Hedges](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Duh..  
**Date:** Tuesday, May 28, 2013 8:35:41 PM

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You want to cut all those trees that are quite distant from homes, yet you don't propose to cut a reasonable firebreak, cutting the brush that runs behind all the homes along the ridge. You only send sheep to do brush cutting ONLY at trail entrances. You also need to provide maps of what you're proposing on the website, and be honest about the many thousands of gallons of herbicide you also plan. Too much is buried in the massive amount of text in your proposals.

Our family is against the massive tree removal, and the lack of a proposal to create a brush firebreak along the EBRPD acreage that abuts residential properties.

**From:** [tina\\_heringer](mailto:tina_heringer)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Cc:** [Pat.Briggs@calema.ca.gov](mailto:Pat.Briggs@calema.ca.gov); [Sabra.Hernandez@calema.ca.gov](mailto:Sabra.Hernandez@calema.ca.gov); [James.Lewis@calema.ca.gov](mailto:James.Lewis@calema.ca.gov); [Jennifer.Kolbe@calema.ca.gov](mailto:Jennifer.Kolbe@calema.ca.gov)  
**Subject:** East Bay Hazardous Fire Reduction  
**Date:** Friday, May 17, 2013 5:31:13 PM

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To All it May Concern:

I am writing to express sincere concern regarding the dumping of up to 6,572 gallons of herbicide in the East Bay in a misdirected effort toward fire hazard mitigation. As a 7th generation northern Californian with a family heavily involved in agriculture (Heringer Ranches, Heringer Estates Winery and Fred Heringer was twice president of the California Farm Bureau as primary examples) I can tell you as a first hand witness to the devastation well-meaning use of herbicide has done to the wildlife populations of Northern California. It is well documented that due to the widespread use of Roundup and other less well known herbicide and pesticide, once plentiful, hard working populations of birds, reptiles, rodents, amphibians and insects have dwindled drastically within the last 10 to 20 years. The last thing our state needs is more spreading of herbicide to systematically kill the much needed wildlife populations which do the literal ground work of our entire ecosystem.

While the attention to fire prevention is much appreciated and needed, this plan is misguided in its decision to destroy extremely valuable trees, natural habitat and other vegetation and the unnecessary use of highly toxic herbicides in order to prevent future growth of invasive trees that could otherwise be toppled.

I have witnessed the many successes and mistakes of government and private intervention in natural processes in order to improve the lives of tax paying Californians. Sadly, I firmly believe that these grant applications for fire mitigation would fall into the file of Mistakes. For instance, replacing the habitat of countless species with wood chips not only removes a living environment but creates a real fire hazard of dry, dead wood in open space. Every child under the tutelage of Smokey the Bear is not only aware of the need for natural fires in a forested area to reduce large scale wildfires and the need for trees as a windbreak. Every Scout knows that a good way to start a fire is to combine dry wood on dry ground that is exposed to sun and wind. Most Californians should also understand the flammability of the Eucalyptus slated for removal.

I remember and understand well the concern over the 1991 fires in the Berkeley Hills and the fuel of Eucalyptus oil and fallen leaves. Yet, herbicide, while convenient and less labor intensive, has a long term impact on residents beyond the Eucalyptus. Toppling the trees would allow for the same prevention of re-sprouting without contaminating soils for other residents, human and non-human alike. And instead of putting the money toward Roundup, our tax dollars can hire the workers needed to remove hazardous trees and replant native vegetation the traditional way: by hand.

This plan under the current four grant applications does not implement risk reduction but rather imposes a long term environmental hazard to humans and wildlife given direct exposure to such vast amounts of toxic herbicides.

I beg you to join me and thousands of other Californians to disapprove the current grant



applications and push for more thoughtful tree management in the East Bay Regional Park District and disallow any use of herbicide on these public lands. Despite the lack of easy answers, please reconsider a better plan which involves reforestation of native vegetation and the use of labor for much needed jobs as opposed to herbicides when implementing risk reduction of fires in the East Bay.

Sincerely Yours,

Tina Heringer

**From:** [Hills Conservation Network](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** 795 signers: Stop the deforestation of the Berkeley/Oakland Hills petition  
**Date:** Thursday, May 16, 2013 10:49:43 AM

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Dear FEMA,

I started a petition to you titled [Stop the deforestation of the Berkeley/Oakland Hills](#). So far, the petition has 795 total signers.

You can email all petition signers by clicking here:

[http://petitions.moveon.org/target\\_talkback.html?tt=tt-42455-custom-21317-20130530-zoUPTn](http://petitions.moveon.org/target_talkback.html?tt=tt-42455-custom-21317-20130530-zoUPTn)

The petition states:

"The current Draft EIS is unacceptable as it will inflict enormous environmental damage, expose the public to thousands of gallons of toxic herbicide, destroy raptor habitats, destabilize steep slopes, and actually increase the risk of hazardous wildfires. FEMA should retract this EIS and remove those portions of the EIS that call for clear-cutting tall trees. The EIS should instead support a far less destructive methodology that would focus on a "species-neutral" approach, focusing on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires. Killing more than 50,000 trees and poisoning them for up to 10 years will have disastrous effects on this beautiful and healthy ecosystem, and cannot be allowed to happen."

To download a PDF file of all your constituents who have signed the petition, including their addresses, click this link:

[http://petitions.moveon.org/deliver\\_pdf.html?job\\_id=859340&target\\_type=custom&target\\_id=21317](http://petitions.moveon.org/deliver_pdf.html?job_id=859340&target_type=custom&target_id=21317)

Thank you.

--Hills Conservation Network

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*If you have any other questions, please email [petitions@moveon.org](mailto:petitions@moveon.org).*

*The links to download the petition as a PDF and to respond to all of your constituents will remain available for the next 14 days.*

*This email was sent through MoveOn's petition website, a free service that allows anyone to set up their own online petition and share it with friends. MoveOn does not endorse the contents of petitions posted on our public petition website. If you don't want to receive further emails updating you on how many people have signed this petition, click here: [http://petitions.moveon.org/delivery\\_unsub.html?e=xH6bm7btHgt1XQnAc8fwEiBFQkgtRUITLUZFTUEtUkIYQGZlbWEuZGhzLmdvdg--&petition\\_id=42455](http://petitions.moveon.org/delivery_unsub.html?e=xH6bm7btHgt1XQnAc8fwEiBFQkgtRUITLUZFTUEtUkIYQGZlbWEuZGhzLmdvdg--&petition_id=42455).*

**From:** [Jennifer Hoffman](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comment on the draft EIS for East Bay Hills fire risk reduction  
**Date:** Monday, June 17, 2013 9:00:14 PM

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Dear FEMA representatives,

I am a former resident of the East Bay hills and became aware of the recently proposed fire reduction project when some friends living in the area brought it to my attention. I hope you will accept comments from someone who is no longer living in the affected area, but retains a strong sense of identity with the East Bay and its environment.

I urge you to reconsider the draft EIS and seek more moderate alternatives to the proposed project. While I am generally sympathetic to efforts to reduce the effects of invasive plants and reintroduce native species, the plan to clear over 75,000 trees from the East Bay hills seems extreme and short-sighted. My main objection is that the proposed clear-cutting would cause major disruptions to existing ecosystems without provisions for damage mitigation or for ensuring reforestation by native species. I am also very concerned about the widespread use of pesticides to prevent regrowth and the many acres of wood chips that would replace existing complex (even if not completely native) ecosystems, resulting in a fire hazard of a different sort.

This seems to me a very crude, simplistic solution to a complex and far-reaching problem. Surely there are more moderate fire-reduction techniques that could be applied here that would take a broader and more balanced view of the existing ecosystem and result in a smoother and less damaging transition from the current mix of plant, tree, and animal species to a more fire-resistant one with a higher proportion of native species.

It will be tempting to dismiss public concerns about this project as coming from "tree-hugging wackos" who love all plant life indiscriminately and automatically distrust any plan arising from government, academia, or the business world. I call on you to resist that temptation, take seriously your roles as public servants, and reconsider these plans, with an eye to their broader, long-term impacts on environmental and human health. There is much here for a reasonable person to

question. Thank you for allowing this period of public comment and for considering my contribution.

Sincerely,

Jennifer L. Hoffman

Former resident of Berkeley and El Cerrito

**From:** [Lindsey Hogg](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Strawberry and Claremont Canyon tree removal  
**Date:** Saturday, May 18, 2013 12:39:09 PM

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To whom it may concern:

As a resident of the Bay Area, I would like to voice my opinion that I do not approve of the current plan of fire hazard mitigation as outlined here: <http://milliontrees.me/2013/05/09/nearly-a-half-million-trees-will-be-destroyed-if-these-east-bay-projects-are-approved-revised/>

I grew up in a midwestern state that also suffered from destructive wildfires, so I understand that there may be a need to reduce the amount of dense vegetation in urban areas that could cause a lot of harm to the cities in the area. I also understand that the trees to be cut down are non-native trees, and removing them will make way for native vegetation to return. The problem that I see lies in the massive use of Roundup and other herbicides; I believe this is hazardous to human and animal health and should be avoided. I would also like to see a plan to replant native vegetation, to speed up the process of plants returning to the area. Perhaps the vegetation that is removed could be broken down into compost or used in a better way than wood chips as ground cover.

Thank you for your time,

Lindsey Hogg

**From:** [Tara Holmes](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public Comment on FEMA Draft EIS Published for East Bay Hills Hazardous Fire Risk Reduction  
**Date:** Sunday, May 12, 2013 10:32:43 AM

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Dear Sir or Madam,

I would like to present in this email my official public comment on the FEMA Draft EIS Published for East Bay Hills Hazardous Fire Risk Reduction.

Similar to efforts taking place in San Francisco to restore "native" vegetation to regional natural space, I am against FEMA Draft EIS Published for East Bay Hills Hazardous Fire Risk Reduction. I have done much research with respect to Mount Sutro and UCSF's plan to fell tens of thousands of eucalyptus trees for a similar "fire hazard" prevention measure and the numbers do not add up. Native California hills are designed to ignite and burn periodically -- that's the "natural" cycle of this area. Maintaining tree cover, particularly trees with high canopy like eucalyptus, not only provide shade and habitat for wildlife, but actually decrease the risk of fire hazard. By felling and therefore clearing the area, you are inherently remodeling the entire ecosystem into something, ironically, that is more likely to ignite (see the historic fire of Angel Island when eucalyptus were removed in a similar fashion and a great fire soon followed).

In addition to sheer beauty, these trees also give a great deal back to the region and the climate at large acting as a significant carbon sink. To quote the UCSF Draft EIR regarding Mount Sutro: "A total of 38,918 tons of CO<sub>2</sub>e (35,306 metric tons of CO<sub>2</sub>e), or 639 tons per acre of CO<sub>2</sub>e (579 metric tons of CO<sub>2</sub>e per acre), is sequestered in the above-ground live and dead tree biomass of the Mount Sutro Open Space Reserve. Of this, approximately 98.76% is sequestered in the Reserve's live blue-gum eucalyptus trees." This is an impressive number that we, as a collective community, should be proud of, particularly in this age of dire climate change. The East Bay Hills host even more trees that are vital to our regional and global ecosystem, particularly as we just [surpassed atmospheric 400 PPM](#).

In addition, California State AB32, the Global Warming Solution Act states: "(f) In developing its plan, the state board shall identify opportunities for emission reductions measures from all verifiable and enforceable voluntary actions, including, but not limited to, carbon sequestration projects and best management practices." Valuing the East Bay Hills as a carbon sink is reason alone to keep the tree canopy as-is and in tact. In a world facing the dire impacts of climate change, what we need more than anything are trees to help absorb excess carbon and replenish our air supply, both locally and globally. And, the East Bay is not known for its stellar air quality, making air-filtering and purifying trees all the more vital.

Furthermore, the East Bay Hills act as a significant habitat for wildlife, including many birds such as the Great Horned owl, in addition to bees, coyotes and insects. Surely these creatures, who have lived in the area for many years, some well beyond human inhabitation, deserve to call the city home just as much as any "native species." In fact, I believe it to be discriminatory to determine what species should and should not continue to survive, particularly when it involves killing off one species to resurrect another. Who are we to make that call? Can an environment that hasn't been a natural area for hundreds of years actually be restored? And to what exactly? To what the land was pre-human development? And this "restoration" will be achieved by using noxious chemicals and pesticides within close proximity to city residents and wildlife? This is simply unacceptable. Please consult: <http://www.thenakedscientists.com/HTML/articles/article/reconsidering-non-native-species/> and see: <http://sutroforest.com/2013/01/24/sfs-natural-areas-program-uses-even-more-pesticides/>

The ecosystem that exists today within the East Bay Hills has adapted and has become home to countless creatures that call it home. Who are we do deny their existence in place of something more "native"? This is a subjective value-based question. Eucalyptus, for example, a tree often resented by area "naturalists," in fact does not make the USDA list of invasive and noxious plants in California: <http://plants.usda.gov/java/noxious?rptType=State&statefips=06> and possess many positive qualities that should be considered before mass eradication occurs. See: <http://sutroforest.com/eucalyptus-myths/>.

Last, but surely not least, a recent popular article in the Atlantic cited that "when trees die, people die" (<http://www.theatlantic.com/health/print/2013/01/when-trees-die-people-die/267322/>). While this may sound extreme, the article makes sound scientific and psychological correlations that are worth taking seriously. I recommend you do the same before moving forward with such a controversial, costly and unnecessary plan as outlined in the Draft EIR, a plan that would permanently destroy a unique and glorious asset to the Bay Area and its residents.

Regards,

Tara M. Holmes  
 San Francisco, CA

**From:** [Lynn Horowitz](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills  
**Date:** Wednesday, May 29, 2013 10:24:27 AM

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Re: The Fire Mitigation Project in the Berkeley/Oakland hills

As a local resident and naturalist of the East Bay Regional Park District, I am writing because I am extremely concerned about the potential deforestation of the Berkeley/Oakland hills as outlined in the current Draft EIS.

Although it is important to reduce fire risk, there has clearly been a trend to demonize all non-natives that does not reflect the reality of how adaptive ecology is to non-natives species.

Please consider an alternative species-neutral approach which targets the elimination of ground fuels to ensure the minimal risk of crown fires. The proposed clear cutting and poisoning of more than 50,000 trees will destroy our beautiful parks, introduce new hazards, and is fundamentally an overreaction to a fire risk problem.

Please look at the contrasting images below in these 2 photos taken along Skyline Blvd.:

1. The hill of Eucalyptus trees has been clear cut and sprayed with Garlon, resulting in a flammable hillside of weeds and toxic runoff to the houses below.
2. The neighboring hillside has instead been thinned, the fire ladder of ground fuels removed, and the ecology left intact.

Please FULLY DISCUSS the simpler approach, illustrated in photo #2, as an alternative project.

Why is the Photo #2 approach not adequate for fire risk reduction, a long term low cost solution which conserves our healthy enough, not perfect, but beautiful parks?

Thank you for your consideration,  
Lynn Horowitz

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Lynn Horowitz  
[lynn@riolago.com](mailto:lynn@riolago.com)  
138 The Uplands  
Berkeley, CA 94705

H: 510-654-0154  
C: 510-915-2424

FEMA DEIS East Bay Hills California

Madeline Hovland

1

**COMMENT on Draft EIS Hazardous Risk Reduction Environmental Impact Statement,  
East Bay Hills, California**

From:

Madeline Hovland  
781 Alvarado Road  
Berkeley, CA 94705

June 16, 2013

To Whom It May Concern:

The FEMA Draft EIS is seriously flawed and, therefore, unacceptable as currently written. Among the many reasons the DEIS is not acceptable, are the following:

**1. The proposed projects focus completely on clearing vegetation; yet research (and FEMA's own mitigation policy MRR-2-08) state that the best way to protect lives, property and the environment is to address the ignitability of structures, reducing the threat to at-risk structures through creating defensible space.** The focus of the FEMA MRR-2-08 policy is, as it should be, structural protection through the application of ignition-resistant construction, the creation of defensible space, and limited hazardous fuels reduction to protect life and property, not removing tens of thousands of trees to clear forests (in most cases, miles away from structures) while transforming the natural landscape to one that a small percentage of hills residents arbitrarily prefer.

As can be seen from Figure ES-1, showing the location of the proposed projects, these forests are, in almost every case, far from any residence in the wildland/urban interface. When local matching funds are included, more than 7 million dollars of taxpayer money would be wasted on destroying trees in forests that have never burned and that are far from any structures. **Reference: Figure ES-1 Proposed and Connected Project Areas. FEMA Mitigation Policy MRR-2-08.**

**2. Public involvement was far too limited, and has contributed to feelings of alienation and anger within the East Bay community.**

**3. The DEIS does not address the concerns of taxpayers who live outside the hills areas, but do reside in the East Bay.**

It is clear from repeated comments from the public, notably at the third FEMA public comment session on Saturday, May 18, and also from comments made by hundreds of signers to petitions protesting these projects, that many citizens were not informed about these grant applications (and are upset that they were not notified about these proposed projects that would have an unfavorable impact on them.

It should be noted that the time and location of public comment sessions is important. Citizens who work during the week and have only public transportation cannot be expected to attend meetings at the Trudeau Center. To send notification of the DEIS only to those who previously commented at scoping meetings in August 2010 is insufficient.

It is unfortunate that the people who received notification of the DEIS are primarily residents of the hills. Even though those residents will be impacted by the cutting of thousands of trees in wildlands and

parklands of Berkeley and Oakland, many other people in the East Bay from Richmond all the way to San Leandro hike, bike, jog, walk their dogs, and take their children to those forests and groves that are slated for tree removals. Even if they do not use the proposed project areas for recreation (and have concerns about the use of pesticides, no-longer-shaded hiking trails, the noise of tree-cutting equipment, traffic diversions and air pollution), they enjoy looking at the trees, and would be dismayed when the landscape is transformed to chaparral brush or grassland or oak bay woodland.

Countless residents of neighborhoods below the hills, because of fewer financial resources, enjoy nature in the hills with their families and may even depend on it for their outdoor recreation. They do not support the proposed projects, as was demonstrated by the overwhelming response at the May 18th FEMA public comment meeting and more than 5000 signatures on the petition posted on MoveOn.org by the Hills Conservation Network: **Reference:** <http://petitions.moveon.org/sign/stop-the-deforestation-3>

**Several other petitions protesting the projects were posted. They include but were not limited to the following:** <http://www.thepetitionsite.com/638/686/167/dont-let-fema-and-uc-berkeley-cut-down-70k-california-trees/> [http://petitions.moveon.org/sign/fema-do-not-fund-clear?source=c.em.mt&r\\_by=7883632](http://petitions.moveon.org/sign/fema-do-not-fund-clear?source=c.em.mt&r_by=7883632)  
[http://www.avaaz.org/en/petition/Save\\_the\\_Urban\\_Forest/?tcPoKeb](http://www.avaaz.org/en/petition/Save_the_Urban_Forest/?tcPoKeb)

The number of citizens who have signed petitions protesting and commenting on these projects and/or asking that they be modified will undoubtedly total well over 6000. It should be noted that if the people who do not support the proposed projects are against it because they have not read the 3000+ pages in the DEIS, and misunderstand what these projects entail, that cannot be used as an excuse for ignoring their concerns. The DEIS should have clarified and explained the fuel reduction projects in ways that might have at least attempted to allay people's fears (if that were possible) instead of obscuring the issues or pretending that they do not exist.

**4. The DEIS is seriously flawed in that it appears to be responding to and agreeing with only a small percentage of taxpayers who would be impacted by the proposed projects.** The hills do not belong to this small group that has lobbied to remove the non-native trees for years. The areas to be cleared of non-native trees are public land, even those that are said to be on “UCB property.” Most of this small percentage that have lobbied for years (even before the 1991 Tunnel fire) to have the non-native trees removed belong to an elitist organization, the Claremont Canyon Conservancy (CCC), which is committed to landscape transformation and native plant restoration. The CCC has done its best to convince the community at large that non-native trees were primarily responsible for the spread of the 1991 Tunnel fire, and that if these trees could be removed, houses in the WUI would be safe from fire.

The consultants who created the DEIS should have known that this attack on non-native trees would convince only nativists and eucaphobes. The Mayors' 1992 Task Force and the Grand Jury that investigated the causes of the 1991 Tunnel fire both concluded that the spread of the fire was mostly due to the heat and embers generated by burning houses, not primarily by burning trees, eucalyptus or any other species. **Reference: The final report of the Mayors 1992 Task Force is available at both the Berkeley and Oakland public libraries.** Jon Keely, in his article “Housing Arrangement and Location Determine the Likelihood of Housing Loss Due to Wildfire,” points out that the important factors in whether a house burns or not are a structure's location relative to predominant wind patterns and direction. He states that property loss is more likely to occur “within herbaceous fuel types [grass]

than within the higher fuel-volume woody types [trees] that are typically considered as the most hazardous fuels.” In other articles Jon Keeley has made it clear that reduction of fuel load and replacement of one vegetation species with another does not mitigate the risk of a climate-driven fire. Reducing the likelihood of ignition is the key element in reducing fire risk,

**Reference:** <http://www.Plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0033954>

**5. The EIS is flawed as a document so biased from the outset that the research and conclusions it presents cannot be trusted.**

The EIS assumes that the claims of nativist advocates are true; it does not analyze the characteristics of many species of native vegetation that make some native trees and vegetation, for instance, ceanothus, scrub oak, coyote bush, manzanita and other species of chaparral, that could move into areas where the non-natives are removed. According to the URS document letter to FEMA of May 27, 2009 (obtained through the Freedom of Information Act), grassland and chaparral species “would create a fire-hazard profile with its own suite of concerns” and some of these species are more ignitable and even more flammable than non-native trees. **Reference: URS letter to FEMA, May 27, 2009.**

According to the U.S. Forest Service, the increase in fires in California has been caused by the suppression policies that allowed for the accumulation of fuel in the form of fallen leaves and branches as well as excessive plant overgrowth and understory in forest areas, increasingly dry, hot weather, changing weather patterns, and increased development in the wildland/urban interface. **Reference: <http://www.smokeybear.com/wildfire-science.asp>**

**6. The DEIS presents two alternatives that represent extreme choices (1) the proposed and connected actions--removing thousands of trees with the inevitable consequences that would follow (with those consequences presented ultimately as benefits even though many would consider them a disaster) or (2) no action, with "greater potential for large and intense wildfire" resulting in all kinds of terrible effects, as listed in Table ES-3. Since both of these alternatives are analyzed in ways decidedly biased in favor of removing all of the non-native trees in the proposed project areas, this DEIS is simply and conclusively illegal.** The Proposed and Connected actions for the projects of all three agencies are listed together as if they are inseparable, when obviously, the East Bay Regional Park District's plans for selective thinning and removal of flammable ground fuels are less drastic and less damaging to the environment. Why not present the EBRPD's methods for mitigating the wildfire hazard as a separate alternative? The EIS is remiss and may be illegal because it did not present alternatives that would be less damaging to the environment than the proposed and connected action alternative.

The DEIS is also flawed in that it does not present other alternatives such as selective tree removal or a species neutral approach. Partial clearance and alternatives such as removing flammable understory, picking up debris and litter, etc. are treated as part of the proposed project instead of as alternatives on their own. The DEIS thus avoids the necessity of identifying the alternative that is most favorable to the environment, and the alternative that is most favorable for fire risk mitigation.

**7. The DEIS is flawed because two of the agencies involved in these grant applications, UCB and the City of Oakland have not completed an EIR or a CEQA, which is necessary before any of these projects can move forward.**

**8. The DEIS is flawed in that no estimate of the number of trees to be cut is given. Reference**

**Table 1.1 Acreage for the Proposed Action.** Because the EIS does not include this information, it appears to have been deliberately **hidden from the public**. Specifying acreage means very little when one is considering the effects of these tree removals. In order to evaluate what the impact will be on carbon storage, for instance, citizens need to have some idea of how many trees of each species will be destroyed, and the sizes (diameters and height) of those trees. The DEIS does not include whether trees of large size, medium size or slender stems are to be removed. Because of these omissions, it is impossible to estimate with any accuracy how much stored carbon in the trees will be lost when they are cut, how much Garlon will be used on the stumps, how large the root systems are that hold the slopes in place and help to prevent erosion. The DEIS is flawed in that it does not include this information, and it is therefore hidden from the public.

**9. The DEIS is flawed because UCB's proposal to eliminate only certain species of non-native trees is native plant restoration, not fire risk mitigation, which would demand a species-neutral approach. Advocates of native plant restoration must not be allowed to use taxpayer money to advance their personal agenda on public lands. The hills need fuel reduction that will result in the mitigation of fire risk, not fuel reduction that will result in a more flammable landscape.**

There is absolutely no scientific evidence for the claim that non-native trees and non-native vegetation support and spread wildfire while native trees and native vegetation somehow resist fire. That is such a ridiculous claim that I am embarrassed that anyone connected with a world-class university such as UCB would make it. The FEMA DEIS must modify this claim and adopt a species-neutral approach to fire risk mitigation.

I live in the area of the Oakland hills that burned in the 1991 Tunnel fire, and I witnessed both native and non-native trees being burned down to their roots in that fire. Across the street from my house was a stand of coast live oak that burned completely, along with the California bays close to it. I know of cases where eucalyptus and redwoods were standing close to each other; the redwood was ignited by an ember, and burned to the ground while the eucalyptus did not ignite at all. Fire does not discriminate between native and non-native vegetation and trees. To say that non-native trees are prone to fire because they are non-native is xenophobic and totally without basis in fire science.

Scientists at the University of Tasmania conducted experiments on leaves of plants and trees in the Tasmanian forest. They found that leaves of blue gum eucalyptus presented the greatest resistance to ignition of all the eucalyptus trees studied. Even though there is oil in the leaf (but less oil than there is in the oil of leaves of California bays) the blue gum leaf is relatively thick. **Reference: Journal of Biogeography, 1985, study by Dickinson, K.J.M. And J. B. Kirkpatrick.** According to USDA, blue gum leaves are classed as “intermediate in their resistance to combustion, and juvenile leaves are highly resistant to flaming.” The leaves of California bay laurel trees contain 7.5% of essential/volatile oils, more than twice the amount of oil in leaves of blue gum eucalyptus leaves which range from less than 1.5 to over 3.5%. **Reference: <http://www.ansci.cornell.edu/plants/medicinal/eucalypt.html>; <http://www.fs.fed.us/database/feis/plants/tree/eucglo/all.html>; <http://www.paleotechnics.com/articles/Bayarticle.html>**

**10. The DEIS does not analyze the characteristics of many species of native vegetation that make some native trees and vegetation more flammable than non-native trees and plants.** The DEIS is deficient in that none of the possible highly flammable vegetation types that might thrive in the post-treatment areas were analyzed; specifically the native species were not analyzed, as if the DEIS agrees with the unscientific proposition that all native vegetation is less fire-prone than non-natives. The

characteristics of plants and trees that make them more or less resistant to fire have been listed and described in several peer-reviewed, scientific studies. I have referenced one that focuses on vegetation in the southern U.S. but its findings are applicable to anywhere in the U.S. including the East Bay Hills. This analysis does not state, suggest or even consider the idea that native vegetation is less fire prone than non-native simply by virtue of being native. **Reference: *Fire in the Wildland-Urban Interface, Doran, Randall and Long, U. of Florida and USDA Forest Service, 2004.***  
<http://edis.ifas.ufl.edu/fr147>

After all, what does the word "native" even mean? If one assumes that native vegetation is descended from whatever vegetation was here in prehistoric times, what is the date that separates native from non-native times? The concept of preferring native to non-native vegetation makes no sense if the goal is fire-risk mitigation. (The native Americans had no trouble burning their native grasslands every few years.)

There is no analysis of the characteristics of acacia that cause it to be on the UCB instituted pogrom against non-native trees.

**11. The DEIS gives no reason why the city of Oakland apparently decided to follow the disastrous goals and methods of UCB instead of the more rational methods of EBRPD.** This decision is mysterious since many of the EBRPD properties are located in Oakland, so one would think that, if Oakland could not manage its own properties, it would have asked EBRPD to do it, instead of proposing to hand over millions of dollars to UCB to remove all of the non-native trees on Frowning Ridge, an Oakland property, with consequent environmental damage, and at a higher cost than EBRPD's more moderate approach.

The DEIS should have provided the reasons, if there are any, why Oakland appears to be in lockstep with UCB because this decision simply does not make sense (unless one considers the fact that Oakland's Mayor and several city council members are eager to please wealthy property owners in the hills who are vocal members of the CCC).

**12. The EIS gives no logical reason why the anticipated "conversion" of mostly forests to grassland with islands of shrubs, will happen. It also does not explain why preserving native oaks and bays, makes any sense as fire risk mitigation.** Most ecologists who are not nativists no longer believe in the process of natural succession or conversion. This process does not take place, they say, except in a completely undisturbed area, such as possibly on a small island. As the climate warms, many native species, such as oaks and redwoods will move further north. **Reference: Emma Marris in *Rambunctious Garden: Saving Nature in a Post-Wild World.***

Arthur Shapiro. Distinguished Professor of Evolution and Biology at U.C. Davis, has written, "Species and communities come and go. The ideology (or is it faith?) that informs 'restoration ecology' basically seeks to deny evolution and prohibit change. But change will happen in any case, and it is foolish to squander scarce resources in pursuit of what are ideological, not scientific, goals with no practical benefit to anyone and only psychological 'benefits' to their adherents." **Reference: letter to Bill Wycko, SF Planning Department, October 6, 2011.**

Grasslands and shrubs are easier to ignite and more flammable than forests, especially when trees have been well maintained, with debris and understory removed every two or three years. When hillsides are



cleared of eucalyptus trees (that have average flame lengths of 6-21 feet, and Monterey pines, with flame lengths averaging 2-16 feet, the conversion (if it happens) will result in grasslands, with flame lengths of 12 to 38 feet, and shrubs, which can reach flames in excess of 69 feet. As for oak woodlands (including bays), the flame length figures are 1 to 34 feet. **Reference: Hills Emergency Forum Management Recommendations.**

So what is being gained here, at the expense of cutting down thousands of trees, transforming the landscape (from tall trees to impenetrable thickets of chaparral and high grass) that thousands of residents now enjoy, and destroying habitat for many animal species (including raptors and snakes as well as many birds, bees, and 4-footed creatures)? Who wants this to happen? Certainly not the more than 6000 citizens who signed petitions against it.

To please a small number of property owners in the hills who have been propagandized by exaggeration and misinformation about the flammability of non-native trees, the hills landscape would be transformed to easily ignitable chaparral (including scrub oaks, weeds, grass, hemlock, thistle, and broom. This vegetation, most of it native, ignites much more easily than trees because it is closer to ignition sources, lower to the ground. During the fire season, the dead wood under the waxy, resinous, green leaves of chaparral are dry as kindling. The thick trunks of tall trees, on the other hand, do not burn easily, and fire does not reach tree crowns (except in extreme conditions of high temperatures) unless there are surface fuels and ladder fuels such as weeds and grass under them. **Reference: Project Vesta—Fire in Dry Eucalypt Forest: fuel structure, fuel dynamics and fire behavior, also the Field Guide for the same project, Interim Edition, 20007, Jim Gould and others, Ensis Bushfire Research, Department of Environment and Conservation, Canberra, Australia.**

To have real fire-risk mitigation, tall trees of every species need to be preserved. Trees may be thinned, but a canopy should be maintained to prevent the rampant growth of grassland and chaparral, the most fire-prone of all species because they ignite more easily and burn hotter and faster than trees.

David Carle, in his *Introduction to Fire in California*, does not mention eucalyptus trees at all in his book. He combines the information about eucalyptus trees with other hardwood trees. He does mention, however, that crown fires can occur in shrublands as well as in forests during extreme winds.

**13. UCB, a taxpayer-funded agency, profits from clearing the land.** UCB admits to possible expansion of its campus with faculty housing and other development in the Claremont Canyon/Frowning Ridge area. FEMA, a taxpayer funded agency, should not pay to clear land for UCB, another taxpayer funded agency, for the purpose of UCB's further development in areas that are currently wildland forests. Ironically, if UCB gets the FEMA grant, it will undoubtedly construct structures (which are highly ignitable) where forests (that have never burned) once existed. Thus, UCB (and FEMA if it gives UCB the money) will be increasing the fire danger, not reducing it, in Claremont Canyon and Frowning Ridge.

**14. The FEMA EIS is unacceptable because it does not meet its stated goal of reducing flame lengths to 2 feet.** “The calculated flame length under the proposed and connected actions is approximately 2 feet, with 89% of the areas in low or moderate fire behavior categories.” **Reference: DEIS 5.2-4** Yet, in the fire appendix, this statement is contradicted. “In almost all post-treatment locations, flames are predicted to be no greater than 4 feet in length and to produce only surface fires, with little torching after treatment.” **Reference: DEIS Appendix M-13.** Both goals are impossible if



the present landscape is converted to grassland and chaparral, oak woodland or oak savanna.

**15. The FEMA Draft EIS is unacceptable because it relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that will exist only in the few days after 100,000+ trees are cut.** This is a meaningless comparison, as the EIS does not specify any means by which the project proponents will maintain the environment in this pristine condition, and in fact maintaining it in that condition is impossible. Shortly after the projects are completed the fire danger will begin to increase, either as a result of wood chips spread on the ground, or weeds, grasses and brush moving into the wasteland areas. In any case, the flame lengths in post treatment locations will be much greater than they would have been in eucalyptus forests.

**16. The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity.** The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. The EIS must be revised to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees. Also, see No. 18 and 23 below.

**17. The FEMA draft EIS is unacceptable in that it does not adequately address the human cost or the risks associated with the herbicide/pesticide use that is being proposed.** The EIS must be revised to fully consider all the implications of the expected pesticide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy. The number of expected years of applications of Roundup, for instance, has been stated as anywhere from 3 years to 13 years. These herbicides/pesticides will be applied by low-wage workers who cannot be expected to closely follow so-called “best management practices.”

A recent article in the journal of the American Cancer Society pointed out that pesticide use (both active ingredients and surfactants) is associated with increased cancer risk to workers who apply the pesticides/herbicides, and also to the general public. Several European countries have initiated policies that will reduce their nation-wide pesticide use. **Reference:**

<http://www.ncbi.nlm.nih.gov/pubmed/23322675>

Pesticide use on the scale that these projects would require could harm not only the chemically sensitive among us, but also dog walkers who use the trails and the children who play there. We have witnessed pesticides being sprayed broadcast into the air (not directly on plants) close to Claremont Avenue. We have met many people in the East Bay who have testified that chemicals in pesticides have caused severe disabilities in themselves and their children.

The documentary film *More than Honey* implies a strong connection between colony collapse disorder in bees because of pesticides. A review of that film states that in northern China, where pesticides are heavily used, bees have all but vanished, and peasants are reduced to laboriously importing pollen from the south and daubing it by hand on blossoms. **Reference: NYTimes, “In Fields and Hives, Zooming In on What Ails Bees,” June 12, 2013.** Pesticides kill bees and invertebrates. We have seen Garlon-treated stumps, with Garlon leaking into a stream. It is inevitable that careless applications of pesticides such as those we have observed in Claremont Canyon will eventually get into waterways and eventually cause increased risk of cancer in humans.

**18. The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze the effects on air quality and human health resulting from the proposed plan. All of the implications on air quality of the proposed projects must be considered.** The EIS does not deal with the many beneficial effect of trees in providing oxygen and filtering particulate matter. Instead the EIS goes on for pages and pages about how the air might be briefly affected by the equipment used to take down the trees. We do not want the trees taken down. We need to keep as many trees as possible, and plant more trees that will grow tall and provide canopy to protect us from the pollution that humans have created. Trees absorb polluting gases, not only CO<sub>2</sub>, but also carbon monoxide, nitrogen oxide and sulfur dioxide.

**19. The EIS is deficient in that it does not include any record of attempts by UCB, EBRPD and Oakland to mitigate risk by maintenance, although we know that such records exist in the case of EBRPD (which does maintenance on a regular basis) and Oakland (which cuts ignitable vegetation along roadsides and has done some fuel reduction using WPAD funds).** If these undeveloped areas in the East Bay Hills are in such high-hazard zones, why hasn't UCB attempted over these past 22 years since the 1991 Tunnel fire to pick up ground litter and remove understory? Instead, UCB appears to have focused time and energy, working with Claremont Canyon Conservancy volunteers, to prove (against all reason) that native plant species will replace non-natives in one small area off Claremont Avenue in Claremont Canyon. This demonstration project proves nothing except the dedication of volunteers to restore native plants; it has not decreased the fire danger even in that area which is now filled with highly ignitable fuels.

**20. The EIS is deficient in that it does not include any real comparative analysis of the damage caused by the 1991 fire vs. the damage caused by other fires, that burned more acres (and were mostly brush, chaparral and grassland fire, not fires on acres that included trees).** The 1991 Tunnel fire is considered more damaging than the other fires—not because of the eucalyptus—but because it involved so many structures, which in many cases ignited the surrounding vegetation, not the other way around. The EIS is deficient in that the solution it seems to recommend—removing the non-native trees—has little or nothing to do with why the 1991 Tunnel fire was considered most damaging.

**21. The EIS is deficient in that it gives no cost estimates for removing brush, surface fuels, lower limbs, and smaller trees vs cost estimates for the favored proposed alternative,** so how can readers come to any conclusion that one alternative is better than the other? In fact, the statements made about the advantages of the proposed alternative are highly suspicious and biased in its favor. The EIS, for instance, claims that “continuous regular maintenance on steep slopes can destabilize soils and lead to erosion. More than the heavy equipment used on those slopes to remove thousands of trees, plus the disastrous effects of removing trees with roots that hold the soil and the slopes in place?

**22. The EIS is deficient in that it should have obtained more evidence than that provided by Robert Santos, a CSU librarian who wrote a much-referenced, unscientific study of eucalyptus, about how freezing and other changes in weather might affect eucalyptus trees.** Santos does not mention other tree species and compare, for example, how such weather changes and events might affect them. The Santos study is replete with misinformation about eucalyptus trees. I have lived in the East Bay Hills since 1974 and I most certainly do not recall the temperature ever dropping to 10 degrees F, as Santos claims. There was, I believe, a freeze in the earlier 70s, but in order to kill a euc tree or have branches drop, there has to be a hard freeze, with temperatures below 32 degrees F for

several days. Thousands of healthy eucalyptus trees were cut down after the freeze, with the excuse that they might fall over. A hard freeze that would affect trees seems unlikely as the planet warms, in part due to CO<sub>2</sub> emissions when millions of hardwood trees are cut down.

The EIS is flawed in that it does not go into any details about how and why trees of any species (including native coast live oaks, redwoods, etc.) might freeze and die, or be affected by extremes of wind or heat.

**23. The EIS is fundamentally flawed in that it does not include the benefits of carbon sequestration that would be lost if tens of thousands of trees are cut down.** Even if another fire were to happen, it is unlikely to affect all of the areas where the planned tree removal will take place so the carbon release would be limited. However, if the trees are cut down, there would be a huge loss of carbon sequestration. Eucalyptus trees, of all tree species, store and sequester the most carbon (approximately 24.4% of the total carbon stored by all vegetation and 16.3% of all sequestered carbon. Eucalyptus trees grow quickly so they take up carbon quickly; they grow large, often topping out at 100-150 feet, which means they store more carbon in their trunks, branches, and root systems.

Two of the three large eucalyptus trees on Alvarado Road at the edge of Garber Park have been measured and analyzed for their carbon storage capability. The bigger the tree's diameter, the greater is the loss of carbon storage capability when it is cut down. One of those trees absorbs 650 pounds of CO<sub>2</sub> each year. The other one absorbs 1980 pounds of CO<sub>2</sub> each year. A large tree has an average mass of about 3 tons; roughly 2/3 of this is cellulose matter consisting of carbon. Therefore, the conclusion is that a large tree will have sequestered 2 tons of carbon over a 70-year period. **Reference: "Carbon Storage in Two Trees," HCN Newsletter, July 2011; measurements and calculation performed by John Hovland, PhD, using the CUFR Tree Carbon Calculator developed by the Center for Urban Forest Research. U.S. Forest Service, in partnership with the California Department of Forestry and Fire Protection.**

**24. The DEIS is flawed in that it claims that aesthetics and visual quality favor cutting down the trees.** It claims also that people prefer open sight lines to views that include tall trees. What studies or surveys have been done to support this claim? Trail users will be especially affected by the loss of trees that now provide shade. As for property values, the prices of houses in the areas that burned in the 1991 fire are higher than ever. People move into the hills, despite the hazards, because they like trees. If they knew that these projects would convert tree vistas to slopes covered with fire-prone chaparral brush and grassland, they would be less likely to buy properties in the hills.

**25. The DEIS is deficient in that it does not consider the importance of eucalyptus trees for wildlife habitat.** Blue gum eucalyptus flower in the winter, when few other plants or tree bloom in the Bay area. Its flowers provide nectar for bees and other insects, Monarch butterflies, and many bird species, who also use the tree branches and trunk for their nests. Raptors such as hawks and owls prefer tall trees such as eucalyptus. As we saw after the 1991 fire, the rodent population increased when the balance of nature was upset and predators chose to move to places where they could find the tall trees they favor.

**26. The DEIS does not mention the effects that Sudden Oak Death will have on the hills landscape.** Researchers tell us that S.O.D. Is rampant in the Bay Area, and that it is spreading rapidly especially to native oaks such as coast live oaks and tanoaks. The spread of S.O.D is associated with

climate change. California bay trees appear to be the vector for S.O.D. although the bays do not die from the disease. As the oaks die, the risk of severe wildfire will increase through the oaks' dry, dead branches and leaves. The dead oaks typically remain standing for years, greatly increasing the risk of crown fire. The DEIS is deficient in not dealing with the consequences of S.O.D. in the oak-bay woodlands and oak savannas that nativists expect to replace the non-natives after they have been destroyed. The DEIS should consider what trees will be left after the eucalyptus, Monterey pines and acacia are gone-- and the oaks die.

**27. The DEIS does not acknowledge or deal with the URS comments critical of the proposed actions, as stated in the letter to FEMA of 27 May 2009 obtained through a Freedom of Information Act request.** These comments will have been dealt with elsewhere, especially by fire scientist Kelly Close, so I will mention them only briefly. URS points out that UCB has inaccurately characterized the fire hazard of Monterey pine and acacia which are fire risks only when they occur as understory or a kind of middle story within a eucalyptus forest.

The critical issues in the URS letter concern UCB's plan to chip non-native trees on site and spread the chips up to 2 feet over the ground. URS notes that UCB is inaccurate in the comparisons it made of expected decomposition rates and depth of chips between what it plans to do and what has been done in other studies. It is clear from the URS letter that UCB does not provide convincing data that the mulch at the proposed depth would decompose in 3-5 years. URS also points out that there is no reason to believe that the mulch would suppress non-natives while encouraging native revegetation. The most irresponsible aspect of UCB's chip/mulch plan is that, because of the possibility of spontaneous combustion, easier ignitability of wood chips than tree trunks, and the dangers of a smoldering fire that could creep unnoticed under the chips until a wind gust disturbs the chips and embers are cast out, UCB's chipping plan would result in a higher fire danger than leaving the non-native trees alive and standing in place.

**As a member of both the Hills Conservation Network board of directors, and the board of directors of the North Hills Community Association, as well as a resident in the hills for 40 years, I am deeply concerned about fire risk mitigation, and I want some form of fuels reduction in the proposed project areas to happen. However, I am convinced that the proposed projects described in the DEIS will only increase the fire danger in the hills as well as having disastrous effects on animal habitat, the quality of life, and the landscape that my family and I love.**

Sincerely,

**Madeline Travers Hovland**

**From:** [Wes Isberg](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Re: draft EIS insufficient  
**Date:** Monday, June 17, 2013 2:38:53 AM

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I live on a hill above trees that will be removed. The ground is so steep that removing the trees will take out the top soil and having the trees gone will contribute to erosion, as will the lack of forest canopy to protect against direct sun. This may lead to fire due to overgrowth of underbrush.

On Mon, Jun 17, 2013 at 2:35 AM, Wes Isberg <[wes.isberg@gmail.com](mailto:wes.isberg@gmail.com)> wrote:

It doesn't cover pesticide use or the impact of removing the trees.

Please don't accept it in its current form.

**From:** [James Snyder](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** FEMA Plan to Clear-Cut 85,000 Trees in Berkeley and Oakland, California  
**Date:** Sunday, May 19, 2013 12:04:00 AM

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I'm writing to voice my objection to this plan. The Federal Emergency Management Agency (FEMA) has been considering grant applications for "fire hazard mitigation" in the East Bay since 2005, when the first of several applications was submitted. After years of debate about whether or not the projects achieve the stated purpose and at what cost to the taxpayers and the environment, FEMA finally agreed to resolve the controversial issues by mandating an environmental impact review. Although FEMA paid for the environmental review, the grant applicants conducted it and it represents their opinions of their own proposed projects! This is crazy.

The trees in Strawberry and Claremont Canyon have been there for decades and hardly constitute a hazard. Pouring thousands of gallons of herbicide on these pristine hills will create a real hazard and destroy a large area of natural beauty. This plan is especially misguided at a time when the world is undergoing global warming and in need of all of its forested areas. The plan being considered is an outrageous and destructive attack on our environment.

The proposed projects are more likely to increase the risk of wildfires than to reduce that risk by distributing tons of dead wood onto bare ground, by eliminating shade and fog drip which moistens the forest floor, making ignition more likely, and by destroying the windbreak that is a barrier to wind driven fires typical of wildfires in California.

The proposed projects will damage the environment by releasing hundreds of thousands of tons of carbon dioxide into the atmosphere from the destroyed trees, thereby contributing to climate change.

The proposed projects will endanger the public by dousing our public lands with thousands of gallons of toxic herbicides. Erosion is likely on steep slopes when the trees are destroyed and their roots are killed with herbicides. Non-native vegetation are more likely to take hold in the unshaded bared ground than native vegetation which will not be planted by these projects. Prescribed burns will pollute the air and contribute to the risk of wildfire, endangering lives and property. Finally, these projects are an inappropriate use of the limited resources of the Federal Emergency Management Agency which are for the expressed purpose of restoring communities destroyed by disasters such as floods and other catastrophic events and preparing communities for anticipated catastrophic events. Most of the proposed projects in the East Bay are miles away from any residences.

I truly hope these projects will be summarily rejected.

Yours truly,  
James Snyder  
[JamesLSnyder@gmail.com](mailto:JamesLSnyder@gmail.com)  
902 South Springer Road  
Los Altos, CA 94024  
650-274-2777





**From:** [janet\\_kessler](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Please do NOT, NOT, NOT fund the futile Plant restoration project in the East Bay Hills  
**Date:** Sunday, June 16, 2013 1:43:51 PM

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Dear FEMA --

We love our trees, we love our wildlife habitat. PLEASE, PLEASE don't fund the project that will be destroying half a million trees in the East Bay. Besides the aesthetics and what people want for their environment, please consider real harmful effects for the environment which will be caused by the destruction of our trees:

\*The trees serve as a huge windbreak; removing these trees will increase winds which will increase the risk of fire.

\*Distributing dead wood chips as ground cover seems insane -- why cover the ground with dry fuel, which also will increase the risk for fire?

\*We all know that these trees collect moisture from the atmosphere and turn it into drip which reaches the ground and keeps everything moist, reducing any fire risk. Remove the trees and their moisture collecting capacity, and you'll have a dryer ground which is much more prone to fire than what exists there now.

\*Dry scrub and grasses, will be replacing the trees. Everyone knows that these are much more fire-prone than the Eucalyptus which will be taken down. As an example, in San Francisco last month, note this photo of Bernal Heights taken exactly one month ago: An entire scrub and grasses hillside burned -- but the trees -- Eucalyptus -- on the edges the big fire were not singed at all.



\*We've been told that thousands of gallons of toxic chemical will be needed to prevent the trees from re-sprouting. This is OUR environment. We don't want it poisoned. We are environmentalists wanting a

naturally sustainable environment. That is what we have now. Please don't take down the trees which will add poisonous chemicals to our environment. Do this for the people I know, and you know, who already have suffered from cancer. These chemicals will be used on a hillside where they will get into the water shed. A huge number of people will be affected.

\*Have you thought of the carbon emissions which will be emitted on a large scale, or the carbon sequestration capability which will be eliminated if the trees come down.

\*Wildlife is what I devote my time to. If you spend time in the trees and forests -- Eucalyptus forests -- you'll find a magical world of owls, hawks, monarch butterflies, an incredible number of birds, bats, squirrels, honey bees, etc. I'm a photographer -- I see these animals all the time in Eucalyptus trees. There is plenty of grassland already for other species to use, we don't need more of it for our many wildlife species which in fact depend on the trees for their survival. By cutting down the trees, you will be displacing and killing a huge number of animals.



Please approve the NO PROJECT alternative, which will allow us to retain our trees, and preserve an environment we all cherish.

Thank you for your consideration.

Very Sincerely,  
Janet Kessler  
[Urbanwildness.com](http://Urbanwildness.com)



**From:** [Jayah@AdventureBuddies.net](mailto:Jayah@AdventureBuddies.net)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** FEMA in Berkeley  
**Date:** Friday, May 31, 2013 7:00:03 AM  
**Importance:** High

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Please do NOT chop down Berkeley trees.

Jayah Faye Paley

These projects are more likely to **increase the risk of wildfires** than to reduce that risk:

- \* By distributing tons of dead wood onto bare ground
- \* By **eliminating shade and fog drip** which moistens the forest floor, making ignition more likely
- \* By **destroying the windbreak** that is a barrier to wind driven fires typical of wildfires in California
- \* By expanding the oak-bay woodland being killed by Sudden Oak Death, thereby adding more dead wood.

Additionally:

- \* These projects will **damage the environment** by releasing hundreds of thousands of tons of carbon dioxide into the atmosphere from the destroyed trees, potentially contributing to climate change.
- \* These projects will **endanger the public** by dousing our public lands with thousands of gallons of toxic herbicides.
- \* **Erosion** is likely on steep slopes when the trees are destroyed and their roots are killed with herbicides.
- \* **Non-native vegetation** such as broom, thistle, and hemlock are more likely occupants of the unshaded, bared ground than native vegetation which will not be planted by these projects.
- \* **Prescribed burns** will pollute the air and contribute to the risk of wildfire, endangering lives and property.
- \* These projects are an **inappropriate use of the limited resources** of the Federal Emergency Management Agency which are for the expressed purpose of restoring

communities destroyed by disasters such as floods and other catastrophic events and preparing communities for anticipated catastrophic events. Most of the proposed projects in the East Bay are miles away from any residences.

\* The projects will likely **negatively affect the UC BOTANICAL GARDEN, CALIFORNIA NEWT HABITAT, STRAWBERRY CREEK AND WATERSHED HABITATS, BIRD LIFE, HIKING JOGGING, BIKING ACTIVITIES IN THESE TWO LARGE CANYONS.**



**From:** [Jeannie Mckenzie](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Oakland hills fire revention project comment  
**Date:** Saturday, June 01, 2013 11:24:31 PM

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I am writing to express my concern about the current fire prevention plan. As a long-time Montclair resident, I understand and appreciate the need for fire prevention. However, I also am very concerned with the enormous scope of the plan and its potential for serious dangers for erosion, water-system health, animal health, and enjoyment of the natural beauty of the area. I live in the Oakland hills because I love being surrounded by big trees, and I accept the risks that involves and recognize the other risks caused by the proposals here.

With that in mind, I would support some relatively minor and gradual thinning of the large, non-native trees, such as the Eucalyptus. By thinning, I mean removal of up to one third of the trees in a given area, if the trees are touching each other or their branches are within 20 feet of each other, and removal of lower branches. I could envision more non-native trees being removed over a long time period, but the sudden removal of all or the majority of trees within a few years would cause serious risks to our delicate eco-system. I think the potential risks from wide-spread removal are outweighed by the value the trees bring to our environment, and I would object strongly to the expenditure of our resources on their removal.

While the EBRPD's plan removes more trees than I would prefer and uses herbicides, I find its "selective thinning" plan to be substantially preferable to UCB's clear-cutting approach. I would prefer that EBRPD not use herbicides and remove fewer trees than they are proposing. I hope that they would consider my comments and not remove as many trees as they are suggesting and would look for an alternative to herbicides, such as hand-pulling.

I've also noticed that the proposals do not indicate an interest in re-building redwood forests. I understand this is a complicated issue, but I would support trying to introduce more redwoods to the areas, and not just focus on oak and bays, which are experiencing a number of difficulties these days.

In sum, I strongly object to clear-cutting of all of any species of tree from any area and to the use of herbicides once they are removed. Some strategic thinning of trees in areas where they are particularly close together is acceptable and beneficial. I am especially concerned about the impact on wildlife and erosion that the current plans create. I appreciate this opportunity to comment and I would like to be more involved, as this area is incredibly important to me.

sincerely,

**Jeannie Mckenzie**

*"Don't ask yourself what the world needs. Ask yourself what makes you come alive and then go do that. Because what the world needs is people who have come alive." -Howard Thurman*

**From:** [Jeannie Mckenzie](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Oakland hills fire revention project comment  
**Date:** Saturday, June 01, 2013 11:24:31 PM

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I am writing to express my concern about the current fire prevention plan. As a long-time Montclair resident, I understand and appreciate the need for fire prevention. However, I also am very concerned with the enormous scope of the plan and its potential for serious dangers for erosion, water-system health, animal health, and enjoyment of the natural beauty of the area. I live in the Oakland hills because I love being surrounded by big trees, and I accept the risks that involves and recognize the other risks caused by the proposals here.

With that in mind, I would support some relatively minor and gradual thinning of the large, non-native trees, such as the Eucalyptus. By thinning, I mean removal of up to one third of the trees in a given area, if the trees are touching each other or their branches are within 20 feet of each other, and removal of lower branches. I could envision more non-native trees being removed over a long time period, but the sudden removal of all or the majority of trees within a few years would cause serious risks to our delicate eco-system. I think the potential risks from wide-spread removal are outweighed by the value the trees bring to our environment, and I would object strongly to the expenditure of our resources on their removal.

While the EBRPD's plan removes more trees than I would prefer and uses herbicides, I find its "selective thinning" plan to be substantially preferable to UCB's clear-cutting approach. I would prefer that EBRPD not use herbicides and remove fewer trees than they are proposing. I hope that they would consider my comments and not remove as many trees as they are suggesting and would look for an alternative to herbicides, such as hand-pulling.

I've also noticed that the proposals do not indicate an interest in re-building redwood forests. I understand this is a complicated issue, but I would support trying to introduce more redwoods to the areas, and not just focus on oak and bays, which are experiencing a number of difficulties these days.

In sum, I strongly object to clear-cutting of all of any species of tree from any area and to the use of herbicides once they are removed. Some strategic thinning of trees in areas where they are particularly close together is acceptable and beneficial. I am especially concerned about the impact on wildlife and erosion that the current plans create. I appreciate this opportunity to comment and I would like to be more involved, as this area is incredibly important to me.

sincerely,

**Jeannie Mckenzie**

*"Don't ask yourself what the world needs. Ask yourself what makes you come alive and then go do that. Because what the world needs is people who have come alive." -Howard Thurman*



**From:** [hawkannej@comcast.net](mailto:hawkannej@comcast.net)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Hazardous Fire Risk Reduction EIS, East Bay Hills, California  
**Date:** Monday, June 17, 2013 7:55:13 PM

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Dear Agency:

This is in regards to the removal of eucalyptus in the Berkeley Hills by the University of California, East Bay Regional Parks District and City of Oakland which FEMA has been asked to fund. I oppose the University's project project and believe it should be modified or dropped for the reasons set forth below.

My Experience: From July, 1979 until January, 2000 I was a Deputy Attorney General for the State of California in what was then the Public Resources section. In that capacity I represented state agencies that managed California's resources and regulated various activities on private land that affected public resources in all the courts of California and in the federal courts. Among the agencies I represented were the Department of Parks and Recreation, Department of Forestry and Fire Protection, Department of Water Resources, State Water Resources Control Board and Regional Water Quality Control Boards and the Department of Food and Agriculture. I worked with agency scientists and reviewed many environmental documents prepared under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). In particular I am familiar with the use of herbicides in forestry and vegetation management on both public and private lands. Among these cases were some involving vegetation management in Mount Diablo State Park. Following my retirement I occasionally assisted in environmental litigation including cases involving forestry and vegetation management on federal lands. I am familiar with the Project Area as I was born and raised in Berkeley and have lived in Berkeley for approximately 60 of the past 70 years and continuously since 1974. I received my BA, MA and LLB from UC Berkeley. I have hiked, run and recreated in the Project Area, and own a home near the University.

Basis for opposition: The environment of California in general and the Project Area in particular has been greatly changed over the last 200+ years. Native vegetation has been replaced by a plethora of non-native species, many of them extremely well-adapted to this climate. All around the Project Area as well as within it these non-native species are growing vigorously. The University's project proposes wholesale removal of eucalyptus and other non-native species. In my experience it is very, very difficult in this environment to remove non-native vegetation wholesale and expect native species to regenerate in the area without planting of the desired species. Redwoods receive competition from hardwoods and replanting after harvesting is essential. Native grasses must be planted if they are expected to return. Native shrubs must also be planted. Desirable native species simply will not recolonize an area after wholesale vegetation removal without a great deal of active assistance from project managers and staff.

Agencies frequently rely on herbicides, thinking that they can remove large swathes of vegetation and apply large amounts of toxic chemicals as a substitute for careful

removal of non-natives and replacement with native plants. This is akin to "destroying the village in order to save it" and repeated projects have demonstrated that it does not work, ends up costing more in the long run, and pollutes the environment.

Instead the University should greatly reduce the scope of the project, remove vegetation from much smaller areas over a longer period of time and do revegetation with natives rather than rely on the application of herbicides in this urban area. In addition, many of the eucalyptus in this area are very large, being over 100 years old and in some cases two feet or more in diameter. Removal of these large trees cannot be done without great damage to the surrounding vegetation and to the watershed itself.

The ostensible purpose of the project is to reduce the fire hazard posed by the eucalyptus. The more sensible course is to remove the underbrush and leave the large trees standing. Fire spreads quickest through the underbrush. In addition, defensible perimeters around buildings in wooded areas and proper building materials are essential to preventing the spread of fire and the defense of structures. Since the 1992 Berkeley Hills fire much has been done to make the hill areas safer.

The project proposed by the University is poorly thought out and does not reflect the experience of agencies such as the East Bay Regional Park District and California State Parks in dealing with similar fire safety and vegetation management issues. If undertaken it will not accomplish its stated purposes, will cost the cash-strapped University system money it does not have and will introduce large amounts of toxics into the local environment, home to hundreds of thousands of people. It is just the latest bit of arrogance by the University toward the community in which it is situated.

FEMA should not fund the University's proposed project. The EIS should be revised to reflect a much smaller project done over a longer period of time with alternatives that are much less environmentally damaging and have a greater likelihood of success.

M. Anne Jennings  
1515 Edith Street  
Berkeley, CA 94703

**From:** [Darla Ken Jensen Pearce](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills Hazardous Fire Risk Reduction Project  
**Date:** Friday, May 17, 2013 10:39:51 PM

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This is a public comment about the above proposed destruction of 85,000 beautiful living trees. It cannot be justified by any means. When a government agency begins to destroy the people's habitat and environment, they harm the people themselves.

It doesn't matter what you use by way of fire threats or pre-emptive strikes again the Earth ~ the fact is that these trees have survived many extreme weather elements for a hundred years or more and this idea is a harmful and destructive alternative to good land management. When government inflicts harm, they need to be replaced. If you can't manage to be productive in non-harmful ways, there is no further ~ future need for your agency to exist.

Please do not harm any of these trees. We are each interconnected in a web of life. To wantonly destroy living trees cannot be allowed or sanctioned by any thoughtful or responsible people. The fact that you wish to pour "Roundup" a pesticide that has been found to be harmful to all forms of life not just weeds adds insult to actual injury. But in this case, to prevent the natural growth of beautiful trees back into this area is nothing short of abuse. Roundup and pesticides are poisons that HARM people, property and living things that do not belong to you. Please do not take this action.

Thank you for your courtesy and cooperation in maintaining a healthy environment by not destroying anything further. Trees are living beings and need to be respected for the oxygen they provide so that humans can breathe. Do not destroy their beneficial existence for all. To go forward will bring some form of natural Karma that would not be nice to witness upon your shoulders. In this life what goes around, comes around, so we must be respectful and kind or suffer the consequences of our own "great ideas" that fall short as this one does in it's entirety.

Darla K. Pearce  
1986 Yosemite Drive  
Milpitas, CA 95035

A resident of Milpitas for over 30 years.

Current address: 1258 Janish Dr., Sandpoint, ID 83864

**From:** [Joanne Yeaton](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** FEMA draft EIS for UC, Oakland and EBRPD  
**Date:** Monday, June 17, 2013 10:59:43 AM

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June 14, 2013

Dear FEMA,

I'm writing in reference to the FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills. This document is a totally misguided and deeply flawed attempt to deal with the very real danger of fire in the East Bay hills, and is unacceptable in its current form. I encourage you to retract and revise this plan to assure that our taxpayers' money is spent on effective, reasonable fire mitigation measures, and not ones that are destructive to the ecosystems they purport to protect.

In particular, the UC proposal to cut down nearly 60,000 non-native trees in the Strawberry/Claremont Canyon and ridge areas, with no provisions for replanting of native vegetation, and with repeated applications of toxic herbicides to prevent resprouting is completely unacceptable. Let me enumerate just a few of the reasons why this is a terrible idea.

**Habitat:** Great horned owls nest in these trees, as do other raptors, keeping rodent populations in check. Without the raptor, the rodent population could pose a serious health risk. These trees also hydrate the hills environments, creating shade and fog drip which moisten the forest floor, even during the dry season. The stands of tall trees create wind breaks, which are an essential part of *slowing* fire spread in a wind-driven fire. The trees anchor hillsides and the steep slopes of the canyons; without their canopy to diffuse the raindrops, every rainstorm will erode the shorn ground and add to the silting of the creeks. These trees' shading *prevents* the growth of the fire-prone, invasive non-native grasses and shrubs such as broom, thistle, blackberry and hemlock, which will quickly fill the bare, unshaded ground if the UC plan is implemented. Clear-cutting will increase the risk of fire because more flammable weeds and brush will take hold.

**Air quality:** With global warming accelerating, and carbon dioxide recently found to exceed 400 ppm in the atmosphere, how can cutting down over 80,000 trees be a good idea? These trees sequester greenhouse gases, they remove carbon dioxide from the atmosphere, they transpire moisture back into the air, they shade and cool the earth. In addition, the current EIS allows for prescribed burns and a mammoth chipping operation, both of which would release enormous amounts of greenhouse gases into the environment. These chips, to be left on site, create a mulch layer which is itself a fire hazard.

**Toxicity:** Four different toxic herbicides are proposed for this project - Roundup, Stalker, Garlon 4 Ultra (from the Garlon 4 Ultra MSDS: "...highly toxic to aquatic organisms...; "Prevent from entering soil... waterways and/or groundwater"; "decomposition products can include...: hydrogen chloride, nitrogen oxide, phosgene." (All toxic)) and Garlon 3A - to be applied over a period of as long as ten years. The claim that none of these poisons will make their way down the watershed into the creeks, or that they will have no adverse effects on recreational users of the parks, or nearby residential communities, is pure wishful thinking. Even with all the mitigation precautions outlined in the Draft EIS, thousands of pounds of chemicals, applied by many users over many years – it takes only one unanticipated rainstorm or rogue windstorm to carry these outside the arbitrary boundaries that have been set.

**Fire control:** There are far better ways to reduce the danger of wildfires than those in the current proposal. The East Bay Regional Park District has found that selective thinning of non-native trees, combined with regular removal of understory fuels, is an effective fire mitigation strategy. When there are ground fuels in abundance, (this could include the 20+ inches of wood chips the UC plan would leave on the ground) they provide ready fodder for a fast moving fire. These ground fuels were a major source of the rapid spread of the 1991 fire in the hills. If these had been controlled, we would not have had the laddering effect that led to torching and crown fires.

The current plan has the potential to *worsen* the fire danger by removing wind breaks and creating more ground fuel.

The choice is not between wildfire destroying our homes, or razed hills and herbicides in the hills. These are false extremes. The East Bay hills, with their stands of trees, rolling hills and beautiful watersheds, are a model to other urban areas, many of whom have lost their natural landscapes to development. We can reduce fire danger *and* maintain the best aspects of our green belt, with selective thinning and understory removal.

I am strongly opposed to the current proposal and urge FEMA to withdraw their support. Yes, we have a wildfire hazard in the hills. And, yes, if we cut down all the tall trees, they won't be there to burn. But we can achieve an equivalent mitigation outcome with much less drastic – and damaging – interventions.

One of the least quantifiable aspects of this Draft EIS is what our woodland “management” will do to the recreational and aesthetic qualities of the tree-covered hills that hug our eastern borders. Walkers, hikers and joggers, school groups and families, dog owners and bird watchers all are regular users and appreciators of the East Bay hills. These tree-covered slopes are a treasure worth saving. When fewer urban kids have contact with trees and nature, we risk raising a generation of young adults who will not value the preservation of wildness and natural settings. And that would be a loss to us all.

Sincerely,  
Joanne M. Yeaton  
Berkeley, CA

**From:** [J.dulaney](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** add me to mailing list  
**Date:** Wednesday, May 22, 2013 6:11:56 PM  
**Importance:** High

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This is really concerning me. I do not live in the area but have many friends who do who are opposed to this and sent it to me. Why not do controlled burns like we do here in Texas to simulate natural fires but to also create the buffer zone that you want to achieve. This will add natural carbon materials back into the soil rather than adding Roundup and other chemicals into the system. How has Monsanto gotten its hands into so many parts of our lives? I do not want my federal tax dollars going toward activities that sacrifice so much for so little.

Add me to your email list because I do want to keep tabs on where this is going and what reasoning there is beyond expediency and corporate interests.  
Joelle Dulaney

**From:** [jon@earcom.com](mailto:jon@earcom.com)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Re: Proposed plan for East Bay Hills  
**Date:** Monday, June 17, 2013 3:45:02 PM

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To Whom it May Concern at FEMA,

I object to the proposed plan to assist the City of Oakland, UC Berkeley and EBPRD in removing tens of thousands of trees and dispensing large quantities of herbicide in the Easy Bay Hills as part of a fire prevention effort. This plan is a drastic and devastating measure that fails to address many if not most of the critical factors that create the conditions for fires like we have experienced in the East Bay Hills.

The primary objective of this plan is to mitigate fire risk, yet the preliminary findings issued for FEMA by the U.S. Fire Administration and the recent EIS Report draw conclusions seemingly at odds with one another:

Our worst fires on record were directly attributable to Diablo winds present at the time of the fires.

One of the primary consequences or outcomes of the plan would be an increase in wind speed due to removal of the ridge line trees.

The FEMA report identifies the proposed application of herbicide as a possible risk. Modern regulations identify and measure contaminants, carcinogens and toxins down to parts per million (or billion), so in this instance, what is the acceptable amount that is allowed to leach into and remain upon our hillsides and in our streams? Urban and residential development undergo a rigorous process of remediation and cleanup of identified hazardous waste sites, so how will FEMA propose to assist in cleanup efforts when sampling later reveals that contaminants remain in the soil or groundwater beyond the worst projections? Are the City of Oakland and UC Berkeley already asking FEMA to assist in the event of such an outcome, or will they come back later, hat in hand?

The '91 fire was largely due to deferred maintenance and negligence, yet this plan would enable the City of Oakland and UC Berkeley to continue shirking their current responsibilities, which are to:

- remove dead fuel in the parks and hills

- carefully enforce local residential building and fire codes

- ensure that personnel, water supplies, trucks and hydrants with standard hose pipe fittings, functioning communications equipment that works across multiple agencies and volunteer units from other areas are all available during emergencies.

- regularly engage in a trimming or thinning schedule for specific areas.

The eradication of 50,000-100,000 trees on our hillsides and contaminating our soil and groundwater certainly goes against the philosophy of each party that solicits your assistance, yet they remain oddly silent on the issue. That the environmentally conscious and forward-thinking UC Berkeley has somehow failed to identify any potential short or long term risks associated with implementing such a drastic alteration to the East Bay Hills is preposterous. No thanks to our local civic leaders, many of us found out about this plan at the last minute. If not for public hearings scheduled by FEMA, most of us probably wouldn't have known about the issue at all.

The proverb "measure twice, cut once" comes to mind. Oakland, UC Berkeley and EBPRD are seeking Federal assistance in a manner that does not demonstrate any such care or caution, rather, it reveals a reckless approach that favors expediency over a commitment to environmental stewardship. Furthermore, it shows a blatant disregard for public opinion, feedback and oversight. This is a maintenance issue that can and should be effectively managed by implementing and adhering to a reasonable plan to preserve our most precious resources -as opposed to destroying them.



Respectfully,

Jon Hudson

**From:** [B. Judd](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Think of the Salamanders!  
**Date:** Friday, May 17, 2013 4:32:23 PM

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In regards to clearcutting Strawberry Canyon and Claremont Canyon, and applying Roundup(tm).

Ripping out trees (admittedly some non-native) to replace them with compost and poison is a terrible thing to do to our hillsides. The amphibians and reptiles will be severely affected, the birds lose their nesting sites and food sites, and who would want to hike the denuded trails? I assume you'd leave some window-dressing along the roads for people in cars to avoid complaints, but a lot of people here hike beyond the roads. Yes, trees are a problem with fire, but underbrush can be managed with goats as it is in Tilden. The only reason the 1991 fire was so bad was bad decisions and management at the start of the fire. You could pave all the wild sections to prevent fire, but I think there would be more damage from the city people deprived of the glorious nearby beauty.

The U.C. Botanical Garden would remain an oasis I guess, but they'd have to deal with the increased runoff, which would include the Roundup.

Please do not destroy the trees of the East Bay hills, and do not use Roundup.

--Barbara Judd  
3134 California St  
Berkeley, CA 94703

**From:** [Julie Jaycox](mailto:Julie.Jaycox@hillsconservationnetwork.org)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX@hillsconservationnetwork.org)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** Stop the East Bay Clear Cutting with "Bonus" Poisonous Herbicide for All  
**Date:** Wednesday, May 22, 2013 6:27:38 PM

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To the Management at FEMA:

The current FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as it will inflict enormous environmental damage, expose the public to thousands of gallons of toxic herbicide, destroy raptor and bird habitats, destabilize steep slopes, and actually increase the risk of hazardous wildfires, while following a genocidal non-native species agenda.

FEMA should retract this EIS and remove those portions of the EIS that call for clear-cutting tall trees. The EIS should instead support a far less destructive methodology that would focus on a "species-neutral" approach, focusing on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires. Killing more than 50,000 trees and poisoning them for up to 10 years will have disastrous effects on this beautiful and healthy ecosystem, and cannot be allowed to happen.

The DEIS has dismissed proposed "species neutral" fire mitigation strategies that would be cheaper, would use far fewer herbicides, and would be far more effective in lessening fire risk because the native plant restoration agenda wouldn't be advanced.

Not only is the Federal Government doing a genocidal clear cutting project that will lead to erosion and unstable hillsides, the FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written in that it does not adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

FEMA needs also to consider the uncontrollable flow of the herbicide through the environment into wells and groundwater, seriously affecting the health of the people living near or below this clear cutting site, and not only killing non-native plants - but killing ALL plants.

Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

Julie Jaycox  
PO Box 330362, SF CA 94133

Leah Kaizer and David Salk  
2746 Prince Street  
Berkeley, CA  
94705

FEMA  
P.O. Box 72379  
Oakland, CA 94612-8579

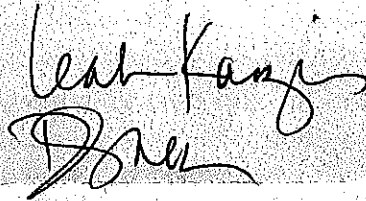
Re: Support of EIS for East Bay Hills

Dear FEMA,

I strongly support the wildfire hazard mitigation projects for the East Bay Hills and feel that they have been studied long enough. I believe the EIS findings of improved fire safety and likely long-term enhancement to the land should move forward without delay. We Claremont Canyon residents know only too well that, when ignited, the eucalyptus canopy will spread wildfire dramatically during our windy fire season. With removal of invasive trees and yearly follow-up to discourage re-growth and weeds, native vegetation will thrive.

Thank you for supporting this important work. Please approve the EIS as soon as possible.

Sincerely,

A handwritten signature in black ink, appearing to read "Leah Kaizer" with a stylized flourish below it.



**From:** [Karla Milosevich](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** plans to clear-cut 85,000 Berkeley and Oakland Trees  
**Date:** Monday, May 20, 2013 10:48:08 PM

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Hello,

I am writing for the trees who should not be clear-cut. Plans to cut them down and then put herbicide is a danger beyond what a threat of fire could be. Our environment is toxic enough, we don't need to destroy it further. Roundup is insidious and horrid, and gets in the water, kills off so many beneficial insects, that feed birds, etc... It is our food chain. It is not just fire that we are in danger of, it is the destruction of our entire eco-system. It is delicate, and you can't just scorch the earth for humans and not be mindful of the destruction it creates. The plan to clear-cut then put down herbicides is not sustainable and it is not healthy. Please abandon this project and leave the trees and animals in peace for future generations.

Please do not cut down those beautiful trees and poison the ground with herbicide.

Thank you,  
Karla Milosevich

**From:** [Kate Wilkin](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Native plant concerns for the Hazardous Fire Risk Reduction  
**Date:** Friday, May 17, 2013 4:54:42 PM

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As a fire scientist, I recognize that Eucalyptus increase fire risk which needs to be mitigated in the Wildland Urban Interface. Given the history and probability of fire in the Berkeley/Oakland Hills it is negligent to not reduce risk in the Wildland Urban Interface and beyond to protect people and homes. Please note that treating the entire landscape, even outside of the Wildland Urban Interface, reduces fire risk with and without direct fire suppression efforts whereas only treating the Wildland Urban Interface requires direct fire suppression efforts during severe fire events. I commend your landscape-wide reduction of fuel hazard which will protect both homes and lives in the most severe circumstance. I wish this mitigation, **for both non-native AND native fuel hazards**, was completed before the 1982 Tunnel firestorm in the Oakland Hills which killed 25 people and destroyed about 4,000 homes ([http://en.wikipedia.org/wiki/Oakland\\_firestorm\\_of\\_1991](http://en.wikipedia.org/wiki/Oakland_firestorm_of_1991)).

However, I am quite disconcerted about (1) mitigation for the fire hazard mitigation plan, (2) the short-term fire risk created by mulch, and (3) the focus on non-native fuel hazards. The current plan does not meet professional standards for ecological plans and is short cited.

(1) The ecological mitigation for the fire hazard mitigation is not sufficient. My concerns are (A) mulch will inhibit native plant recruitment and (B) native plants will most likely not come to dominate the area if the regions are colonized by non-native and/or invasive plants first, and (C) this novel community may provide ecosystem services which may not persist once the fire risk mitigation is complete. I urge you to reconsider the long-term ecosystem services of this region such as soil stabilization, aesthetic beauty, and places for recreation near an urban center. Please edit your plan to include a small-scale pilot study of plant succession with and without native, low fire risk plant seeding/planting OR incorporate native, low fire risk plant seeding/planting into your restoration plan to maintain ecosystem services.

(2) The eucalyptus mulch will be fuel hazard for five to ten years and this can be mitigated in manner which benefits the community. Some mulch could be removed and donated to beautify UCB campus, public gardens, or community gardens. I believe this donation may educate many community members about their current wildland fire hazards.

(3) Both native and non-native plants contribute heavily to fire risk. This plan should focus on creating low fire-risk plan communities rather than removing high risk species. The removal of non-native species alone may not be sufficient to reduce risk.

Please do not approve the plan in its current form, instead please require ameliorations addressing my concerns such as ones I suggested above.

Regards,

Kate Wilkin



PhD candidate  
Stephens Lab: Research and Education in Wildland Fire Sciences  
Division of Ecosystem Science  
Environmental Science, Policy, and Management Department  
University of California at Berkeley

[Kate.Wilkin@berkeley.edu](mailto:Kate.Wilkin@berkeley.edu)

276-492-9236 (c)

510-642-4934 (w)

**From:** [Kathy Ottesen](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** I oppose the deforestation of the Oakland/Berkeley Hills  
**Date:** Wednesday, May 22, 2013 2:00:22 PM

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To Whom it May Concern,

I disagree in the current FEMA plan to cut down more than 100,000 trees in the Oakland/Berkeley Hills and to then spray herbicides over that area. It is not an intelligent and well thought out plan. The impact on the environment of spraying the herbicides has not been thoroughly studied. The plan also does not follow the goals stated by your organization in reducing flame lengths- I propose that you withdraw the plan and submit another that actually meets the goals as stated. Also, your plan does not adequately address the Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. The plan also does not adequately analyze and consider other options to meet the fire risk management goals. It appears that this plan was getting rushed through in hopes that residents would not realize what was happening until it was too late.

A very angry Oakland Hills resident,  
Kathy Ottesen

**From:** [Revital.Katznelson](mailto:Revital.Katznelson)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Cc:** [revitalk@sbcglobal.net](mailto:revitalk@sbcglobal.net)  
**Subject:** Comments on East Bay Hills tree-cutting EIS  
**Date:** Monday, June 17, 2013 4:07:51 PM

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Dear FEMA,

Below please find my comments on your Draft  
“Hazardous Fire Risk Reduction Environmental Impact Statement  
East Bay Hills, California”  
Dated April 2013

### **Section 3.4.2.1.1 Strawberry Canyon-PDM**

Paragraph 1:

A. “Non-native trees, including all eucalyptus, Monterey pine, and acacia”:  
(1) Clear-cutting has caused tremendous impacts in the past, and will probably do it again. Proponents should consider selective harvest. I did not see such alternative considered seriously.  
(2) The EIS does not specify the species of eucalyptus and acacia targeted. The eradication strategy does not appear to be species-specific. Koa “infestations” are not mentioned in this section.

B. ...”to a native forest of California bay laurel, oak, big-leaf maple, California buckeye, California hazelnut, and other native tree and shrub species currently present beneath the eucalyptus and other non-native trees.”: The assumption is that young native trees already exist in **all** locations to be clear-cut, and there is no discussion of planting natives in this section.

Paragraph 5:

“wood chips ... to a maximum depth of 24 inches.”: That is a very thick layer. Will there be any effort to stabilize it? How will this thick, woody ground cover prevent the spread of fire?  
?

Paragraph 9:

“Twice a year, herbicides (Garlon 4, Garlon 3A, Stalker, or Roundup3 [glyphosate]) would be applied to any sprouts emerging from stumps.” “On some resprouts and seedlings, Roundup may be applied to foliage in combination with Stalker.”: Why “twice a year” and WHEN in the year? Glyphosate works on GROWING foliage; application should be timed to growing season only.

General comment: I believe that the aggressive clear cutting proposed in this EIS will be environmentally counterproductive in that it will certainly NOT help Nature do her good work. Beyond damage to habitat, soils, water, wildlife, our hiking trails, and so many other things we cherish, the proposed operations will not even satisfy the Native Plant folks. I think the option of gradual vegetation replacement, as is already done near many of the trails I walk, will be healthier for us all.

Respectfully,  
Revital Katznelson,  
Berkeley CA

always look forward with hope

**From:** [Kerstin Feist](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Date:** Monday, June 17, 2013 11:36:22 AM

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Dear Fema,

I was born and raised in Montclair and still live in the East Bay. I enjoy walking in the parks and many other activities that are offered in the Oakland/Berkeley hills.

I am opposed to the proposed plan to cut down thousands of non native trees in the Berkeley and Oakland hills. As someone who lived in the Hills after the firestorm in 1991, I know that the fire department's continual monitoring of the Hills and requirements for us to keep grasses cut, lower tree branches pruned and other fire safety measures have been effective in preventing another severe fire. The devastation that removal of all non native trees will cause to our Regional Parks, along with UC Berkeley and Oakland plans for tree removal, will leave our most beautiful Parks and greenbelt areas barren and unprotected from soil erosion as well as additional fire hazards from lack of shade and moisture given by the non native trees. In addition, as the environmental engineering company, URS, has written, "Monterey Pine and Acacia trees in the treatment area only pose a substantial fire danger when growing within a eucalyptus forest." They also write that the Eucalyptus wood chips up to 2 feet in depth that would be left also pose a fire danger. If Eucalyptus trees and dead, dying or dangerous trees of other species must be removed for fire safety then they should be removed. But this massive cutting down of healthy trees followed by a massive use of toxic herbicides is a danger to us, our children and pets.

I believe a less drastic plan would result in a safer and more aesthetic result. As someone who greatly enjoys the beauty of our greenbelt areas and Regional Parks, I hope this plan will not be approved in its present form.

Sincerely,

Kerstin Feist  
931 Madison Street  
Albany, CA 94706

**From:** [Kitty Jones](mailto:Kitty.Jones@hillsconservationnetwork.org)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX@hillsconservationnetwork.org)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** Please do not destroy Berk/Oak ecosystem  
**Date:** Thursday, May 23, 2013 6:52:06 AM

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As a student of the College of Natural Resources at UC Berkeley and someone who jogs through the Berkeley/Oakland hills on a daily basis, I am deeply concerned about FEMA's plan to clear-cut nearly 100,000 trees in the region.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills terribly flawed because it does not meet its own stated goal of reducing flame lengths to 2 feet. The proposed treatments will result in an environment with flame lengths of between 14 feet and 69 feet, based on the same data set that was used to construct the EIS. This flame length is worse than what could be expected with the trees that exist currently. We ask that you retract the EIS and rework it to develop a proposal that actually fixes the problem.

The plan also does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. We ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees.

Nor does the plan adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

This plan neglects to sufficiently analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

The effects to air quality resulting from the proposed plan have not been entirely addressed. We ask that you retract the EIS and rework it to fully consider all the implications of the proposed projects on air quality.

Lastly, the plan relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that will exist the day after 100,000+ trees are cut. This is a meaningless comparison, as the EIS does not specify any means by which the project proponents will maintain the environment in this condition. Because of this, shortly after the projects are completed the fire danger will begin to increase. We ask that you retract the EIS and rework it to include a fire model that analyses the expected end result vegetation rather than an essentially irrelevant state.

Again, please DO NOT waste taxpayer money to cut down ANY trees in the Berkeley/Oakland area.

Thank you for your time and consideration,

Kitty Jones

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*"The animals of the world exist for their own reasons. They were not made for humans any more than black people were made for whites or women for men."  
Please don't eat animals. :)*



**From:** [klebans@wellsfargo.com](mailto:klebans@wellsfargo.com)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public Comment DEIS: Hazardous Fire Risk Reduction - East Bay Hills  
**Date:** Monday, June 17, 2013 9:44:32 AM

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## Public Comment Draft Environmental Impact Statement Hazardous Fire Risk Reduction - East Bay Hills

It's an outrage that FEMA is even planning to waste public money to cut the hundreds of thousands East Bay trees. The project which would increase -not decrease - the likelihood of the fire.

It looks like FEMA does not work for the people of the US but instead for chemical companies peddling their poisons, and the tree cutting companies earning big profits from the government contracts.

Here is a short statement against this criminal project.

It is estimated that almost half a million trees in the East Bay would be killed if the project is implemented. It actually is a futile native plant restoration project not a hazardous fire risk reduction project.

The fire risk will be increased due to:

- Destruction of the wind-break;
- Conversion of the living trees into dead fuel on the ground;
- Reduction of landscape moisture from fog drip during the summer;
- Encouraging the growth of more-flammable plants.

In addition to the increased fire hazard the project will damage the environment in many other ways:

- The trees will no longer store carbon; instead, dead trees will be releasing thousands of tons of it into the atmosphere. The Draft EIS understates the effect on carbon sequestration by ignoring the carbon stored in the branches, leaves, and roots of the felled trees, and in the soil: 80% of the actual carbon emissions caused by the project may have been ignored.
- The air quality will suffer - the live trees eliminate air pollution – the dead trees do not. Prescribed burns will further affect air quality, and could get away and cause wildfires and serious damage.
- Thousands of gallons of toxic herbicides will be spread over the East Bay. They will be used on steep hillsides where they can easily get into the watershed. There are epidemiological links of these herbicides to cancer and other significant health problems.
- Erosion and landslides could occur on steep slopes when the tree roots no longer stabilize the ground.
- Increased wind speeds with the loss of wind-breaks will affect quality of life, and likely cause the wind-throw of non-targeted trees.
- Birds and animals residing in the forests will be killed by poisons and the loss of habitat.

**The NO PROJECT alternative is the only acceptable one.** It is bad enough that so much money has already been wasted on this EIS.

Sincerely,  
[Susanna Klebaner](#)

**From:** [Georgette Korsen](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** ["Alan Korsen"; gkorsen@cox.net](#)  
**Subject:** NO PROJECT ALTERNATIVE ON EAST BAY & OAKLAND HILLS PROJECTS  
**Date:** Sunday, June 16, 2013 2:58:25 PM

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TO WHOM IT MAY CONCERN:

Please pursue the NO project alternative on the East Bay Hills projects that threaten nearly 500,000 trees - about 77,000 in Berkeley and the Oakland Hills, and another 409,000 in the East Bay Regional Parks District.

It's unimaginable how there can be so little concern for the wildlife which currently resides in these forests that will be without habitat if this plan proceeds. There are so many issues associated with this project that will have devastating effects on the environment. It will:

**Destroy the wind-break;**

**Convert living trees into dead fuel on the ground;**

**Reduce landscape moisture from fog drip during the summer; and**

**Encourage the growth of more-flammable plants.**

**Employ the use of thousands of gallons of toxic pesticides on steep hillsides where they can get into the watershed.**

**Release carbon emissions on a huge scale from the mass felling of trees.**

This project is not only environmentally destructive, it is a waste of funds that should be used to actually reduce hazards, not increase them.

Our planet clearly needs **MORE trees, NOT LESS**. We should plant native plants, but not undertake a mass removal of thousands of trees that are not only worth their weight in gold because of the carbon they store, oxygen they release and the watershed and habitat they provide, but which we are actually fortunate to have. Trees are increasingly falling victim to diseases and pests, and just like our precious wildlife, are diminishing in numbers. This project employs flawed thinking... please pursue the **NO PROJECT ALTERNATIVE**.

Georgette and Alan Korsen  
245 Calle Familia  
San Clemente, Ca. 92672

**From:** [Helen Kozoriz](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [HCN](#)  
**Subject:** EBH FEMA EIS Public Comment  
**Date:** Monday, June 17, 2013 4:21:31 PM

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Dear Federal Emergency Management Agency (FEMA) Officials,

I am a resident of Montclair in the Oakland Hills who has been living in the East Bay for almost 30 years. My husband's family has been living in Berkeley since 1912. He was born and raised on the Oakland/Berkeley border of Panoramic Hill which is located behind the University of California (UC) between Strawberry Canyon, Frowning Ridge and Claremont Canyon, in the proposed UC fire risk mitigation project areas. Our residence in Montclair is near Redwood Regional Park, not far from Huckleberry and Sibley Regional Parks, which are all in the East Bay Regional Park District (EBRPD) proposed project areas.

During the 1991 Oakland/Berkeley Hills firestorm, I was forced to evacuate as the fire approached Montclair. Having survived the fire, I understand the risks of living in the East Bay Hills Wildland/Urban Interface. We all want fire risk mitigation. However, if we are to proceed with any plan that attempts to reduce fire risk, it must be balanced by the concerns of those who lost their homes and loved ones in the 1991 fire (predominantly the Claremont/North Oakland Hills neighborhoods) and those who are concerned about the environmental impacts of removing over 80,000 trees throughout the hills and the use of toxic herbicides in a long-term 10-year program (proposed action alternative).

#### Public Opposition and Inadequate Public Noticing

Any proposals to reduce fire risk in the East Bay Hills must be carried out in a manner that respects all stakeholders. The proposed action alternative which involves clear-cutting all eucalyptus, Monterey pine and acacia trees, which is essentially a non-native tree eradication and deforestation project, is an extreme measure that the vast majority of public stakeholders do not support.

The final FEMA listening session was well-attended by the public with the vast majority speaking out against the proposed action. Some members of the public threatened civil disobedience to stop the projects should they be approved. One such example is Jean Stewart from El Sobrante who is disabled and confined to a wheelchair from pesticide exposure. Ms. Stewart said, "If necessary I'll place my body and my wheelchair in the path of the bulldozers." See: *FEMA EIS Public Comments Session, May 18, 2013 (minute 25:00)*, <http://www.youtube.com/watch?v=iWXLfVtqKv8>.

The previous FEMA listening sessions were sparsely attended. FEMA failed to effectively notify the public about the proposed projects. At the last meeting, numerous members of the public said they were unaware of the projects, had only found out about the meeting the day before through an online petition and/or the news media, and had not been properly notified.

Growing public opposition to the proposed action alternative can be demonstrated by an online petition, *Stop the Deforestation of the Berkeley/Oakland Hills*, which has collected 5,608 signatures as of the writing of this letter. In contrast, a petition which supports the proposed projects, *Support East Bay Hills Environmental Impact Statement (EIS) to Promote Fire Safety and Science-based Conservation*, has gathered only 478 signatures to-date. See: <http://petitions.moveon.org/sign/stop-the-deforestation-3> and [http://petitions.moveon.org/sign/support-east-bay-hills.fb28?r\\_by=7930438](http://petitions.moveon.org/sign/support-east-bay-hills.fb28?r_by=7930438).

It is reasonable to expect a public backlash given the widespread opposition to the proposed action alternative should the projects move forward. Therefore it is imperative that FEMA retract the draft EIS and revise it to consider public opinion before releasing a Record of Decision on the final EIS. A compromise solution must be found which addresses all the concerns that have been raised at the public scoping sessions.

### Draft EIS is Insufficient

The draft EIS is insufficient in that, among other things, it presents a lack of reasonable alternatives to the proposed action; specifically "no action" or "proposed action."

The alternative proposal presented by the Hills Conservation Network (HCN) may be a viable compromise solution between the proposed action and no action alternatives, provided the number of trees targeted for selective thinning can be reduced enough to minimize adverse ecological impacts to the forest floor and eliminate the use of toxic pesticides, while effectively reducing the risk of fire. This would result in less work and expense in maintenance costs for limbing up trees for fire safety purposes and periodic clearing of underbrush to reduce fuel load.

### UC Berkeley's Proposal Poses Its Own Fire Risk

UC Berkeley's proposed plan to clear-cut all eucalyptus, Monterey pine and acacia trees in Strawberry Canyon, Frowning Ridge, and Claremont Canyon, and deposit two-feet of wood chips onsite, may in itself pose a fire risk.

According to a recent news story, *Is UC Berkeley's Plan to Cut Down 54,000 Trees Necessary?*, "A letter obtained by the [East Bay] Express that was written by a respected environmental engineering company challenges several aspects of UC Berkeley's plan. The letter from URS Corporation, which regularly contracts with numerous public agencies and was initially hired to be a consultant on the tree-cutting project, even questions whether UC Berkeley's proposal poses its own fire risk."

See: <http://www.eastbayexpress.com/oakland/is-uc-berkeley-s-plan-to-cut-down-54000-trees-necessary/Content?oid=3577198>.

Furthermore, the article states, "As the draft EIS notes, UC's 2020 Long Range Development Plan includes the possibility of building faculty housing and a campus retreat center at its Claremont Canyon Regional Preserve study area." FEMA taxpayer dollars which are intended for fire risk mitigation should not be used to fund clearing trees on public land for facilities expansion by UC Berkeley.

### EBRPD Wildfire Hazard Reduction and Resource Management Plan

With the approval of the Wildfire Hazard Reduction and Resource Management Plan by EBRPD, funded by Measure CC, a number of trees have been removed, primarily eucalyptus, Monterey pine and acacia, on land administered by EBRPD within the Montclair District. Increasing numbers of tree stumps are an eyesore along Skyline and Grizzly Peak bordering the East Bay regional parks in the Oakland Hills.

In Redwood Regional Park, a majority of tall, mature Monterey pines were removed on the East Ridge Trail, exposing park visitors to hot sun in the afternoon on a trail that was formerly shady where many local residents walk their dogs. The removal of these pine trees irreparably transformed a much-beloved trail in the Oakland Hills neighborhood to an eyesore with dead tree stumps.

Moreover, EBRPD workers have in the past applied pesticides to cut eucalyptus stumps, and broom, thistle, hemlock and poison oak that have replaced these trees after the shade canopy was removed on Skyline near Grizzly Peak. Pesticide drift has impacted neighboring residential areas posing a public health hazard. Pesticide application signs were not properly posted and park workers did not wear protective clothing.

According to HCN, EBRPD has been changing their methodologies and moving towards selective thinning and clearing underbrush to manage fire risk, which is less environmentally damaging than clear-cutting tall trees and removing the shade canopy. We encourage EBRPD to use less destructive methods in its vegetation management practices. Montclair is predominantly forested with eucalyptus, Monterey pine, and acacia trees so the permanent loss of these trees is of great concern to local residents.

Fire mitigation practices should include preserving tall trees (which are favored by raptors) to retain the shade canopy and reduce highly flammable weeds. We ask that EBRPD eliminate pesticide use on all public park lands.

### Environmental Impacts of Pesticides: Triclopyr and Glyphosate

Triclopyr, the active ingredient in Garlon 4 Ultra, and glyphosate, the active ingredient in Roundup, have been linked to cancer. Both of these products have been proposed for use in a ten-year vegetation management program in the draft EIS.

Caroline Cox, now research director at the Center for Environmental Health in Oakland, reported extensively on triclopyr and glyphosate when she was editor of the *Journal of Pesticide Reform*. She said, "Triclopyr's carcinogenicity has been studied in rats and mice. In both species, feeding of triclopyr significantly increased the frequency of breast cancer (mammary adenocarcinomas)." See: *Herbicide Factsheet Triclopyr*, <http://www.pesticide.org/triclopyr.pdf>.

Cox described three separate studies which show "a link between glyphosate exposure and non-Hodgkin's lymphoma, a type of cancer." In a fourth study "the incidence of another cancer, multiple myeloma, showed a 'suggestive association' with glyphosate exposure." See: *Herbicide Factsheet Glyphosate*, <http://www.pesticide.org/get-the-facts/pesticide-factsheets/factsheets/glyphosate>.

Pesticides leach into soil, contaminate ground water, and poison the watershed. Pesticides drift into neighboring residential areas, adversely impacting public health. Pesticides are hazardous to wildlife, especially for threatened and endangered species such as the Alameda whipsnake and the California red-legged frog. Garlon 4 is highly toxic to fish. Triclopyr has been found in streams and drinking water.

### Additional Concerns

Additional concerns of the proposed action alternative include, but are not limited to, the following issues: loss of wildlife habitat from large-scale tree removal and pesticide use; visual aesthetics; psychological impacts; erosion; loss of recreation; noise from tree-felling operations; loss of carbon sequestration from tree-felling; decreased property values; economic impacts from decreased tourism; pesticide treadmill to control eucalyptus resprouts and weeds; high failure rate of species eradication; removal of 100+ year-old trees in mature forests; destabilizing soils on steep slopes leading to erosion from reentry to apply pesticides; impacts of heavy machinery in sensitive areas; and wasting 5.9-million dollars of taxpayer money for a project that may not achieve its purported goal of fire risk reduction.

### Public Forum on FEMA EIS

A panel discussion on the FEMA EIS in Berkeley revealed that a grand jury investigation of the 1970 Oakland/Berkeley Hills fire had three recommendations for the Oakland Fire Department (OFD): convert hydrant hookups to a standard size so mutual aid could use them; improve radio communications; and improve underground power lines for the pumps at the reservoirs. After 21-years, these things hadn't been done and they all became major problems in the 1991 Oakland/Berkeley Hills fire. OFD, the City of Oakland and public officials need to take responsibility.

A new grand jury investigation was instigated after the 1991 Oakland/Berkeley Hills fire. The Hills Emergency Forum was formed. There were lessons learned, and the subsequent Charing Cross and Broadway Terrace fires several years later were managed well and aggressively fought. See: *Fire Risk Reduction and Tree Removal Plans for the East Bay Hills' Public Lands Forum, June 12, 2013, Dan Grassetti (minute 8:45) and Peter Gray Scott (minute 24:30)*, [http://www.youtube.com/watch?v=R3\\_WdR7OGb4](http://www.youtube.com/watch?v=R3_WdR7OGb4).

### Conclusion

The EIS as currently written is seriously flawed and needs to be retracted. Further study is necessary as this issue remains highly controversial. The process to determine this decision has been wholly inadequate. It must be more inclusive of the general public and should not be lead by a vocal minority of stakeholders. There needs to be a plan to reduce fire risk that strikes a balance between fire mitigation and forest preservation which affects the quality of life for all residents in the Bay Area. A "species neutral" fire risk reduction approach proposed by HCN may be a compromise solution and should be reconsidered in the revised EIS.< /span>

Respectfully submitted,

Helen Kozoriz Shoemaker  
1 Rydal Court  
Oakland, California 94611

**From:** [Yonti Kristan Willits](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** PLEASE DON'T  
**Date:** Friday, May 17, 2013 9:50:42 AM

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I am writing to STRONGLY oppose the plan to cut large areas of trees in the Berkeley hills, fill with wood chips and spray with herbicide to prevent re-growth.

I oppose this for many reasons.

1. Trees are vital for keeping hillsides stable. Cutting increases the **danger of slides**, putting many homes/lives at risk. Those areas also support wildlife that is part of keeping our ecosystem functional.
2. The herbicides will endanger wildlife AND HUMANS by ending up in our water supplies and air, posing serious **health risks**.
3. Those areas are used regularly and well by citizens for recreation/fitness/enjoyment of nature.
4. There are certainly other ways to deal with the fire dangers we face.
5. This is being done with little media coverage and public input, which suggests that you already know that the public would oppose it if they knew about it. We do.

PLEASE DISCONTINUE THIS PLAN IMMEDIATELY.

Kristan Willits, M.A.  
Berkeley Resident

Visual Art Offerings at  
THE ART OF ENERGY - [www.kristanwillits.com](http://www.kristanwillits.com)

Musical Offerings (free download) at  
[www.yontikristan.bandcamp.com](http://www.yontikristan.bandcamp.com)

"May the beauty that we love be what we do. There are hundreds of ways to kneel and kiss the ground." -Rumi

**From:** [FRANK L. KUCERA Esq.](mailto:FRANK.L.KUCERA.Esq.)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Cc:** [frankkucera@thomassenlaw.com](mailto:frankkucera@thomassenlaw.com)  
**Subject:** East bay hills EIS  
**Date:** Friday, June 14, 2013 2:56:27 PM

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My name is Frank L. Kucera. I live in Berkeley, CA and am a weekly user of the East Bay Parks district Tilden Park

I am submitting the following to object to the EIS prepared on Hazardous Fire Risk Reduction, East Bay Hills, California. The report as it exists is flawed.

1. The EIS only offers two alternatives for consideration and comparison. Either do nothing, or do what is proposed in the EIS. This is flawed as there are any number of alternatives that will reduce the fire hazard for the East Bay Hills, but will not destroy the parks and UC owned canyons. There is no adequate analysis of reasonable alternatives for fire risk reduction. The only proposal in the EIS would result in drastic measures that would strip the parks of trees and vegetation; the result of fire mitigation could be obtained with fewer trees being removed and regular maintenance and cleaning of the understory reducing the risk of fire. EBMUD (the East Bay Municipalities Utilities District) maintains properties in the same areas under its control without completely destroying the vegetation, trees and open lands. No such plans/alternatives were even considered. There are alternatives to the single proposal presented in the EIS.
2. There is no consideration at all of the consequences of the proposed use of herbicides included in the plan. Nor is any given to the either the environmental or longterm health effects of the proposed use of herbicides. EBMUD maintains its properties without the use of herbicides, and clearly there was no consideration of the kind of plan it has in place to address these issues.
3. There is no analysis at all of the effects of the EIS proposal on animals or birds that currently inhabit the areas to be covered. That too should be a consideration.
4. There is no analysis of the consequences with respect to the air quality in the region.
5. No consideration is given to the uses of the park. The proposed removal of the trees would eliminate many uses of the park. It is full on weekends, and used during the week by a diverse population. Picnicers, runners, bicyclists, religious and civic organizations all use the park. The elimination of the proposed number of trees would eliminate most of the areas of the parks where these people gather.
6. There is no consideration given to other effects on the neighborhoods surrounding the parks, e.g., landslides and water run off. These could be as destructive as fire for those living near the parks.
7. As for the properties controlled buy the University of California: UC's support for the single proposal considered in the EIS, has nothing to do with hazardous fire risk reduction and everything to do with its construction plans in, e.g., Strawberry canyon.



8. And finally, the EIS plan would destroy the park as a park. Empty fields will eliminate most of the activities for which people come to the park. People are not going to gather in empty fields devoid of trees and full of herbicides. The park is visited and utilized by all the communities of the east bay, and its elimination would have a profound effect on the quality of life in the east bay. And again, it is worth noting the park is used by all the diverse racial and ethnic groups residing in the east bay. Additionally, the parks are used for health reasons by many people. The herbicides and aesthetic destruction of the park will result in a loss of the park which fulfills this function for many, many people. While I have referred to the parks throughout this comment, UC's Strawberry Canyon is also used by residents of the East Bay.

Frank L. Kucera  
2606 Fulton St.  
Berkeley, CA 94704  
510-735-1120

**From:** [la creates](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** FEMA Draft EIS for UC, Oakland, and EBRPD  
**Date:** Friday, June 14, 2013 10:00:57 AM

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I'm writing to voice my objection to the FEMA draft EIS for UC, Oakland and EBRPD.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

The current Draft EIS will inflict enormous environmental damage, expose the public to thousands of gallons of toxic herbicide, destroy raptor habitats, destabilize steep slopes, and actually increase the risk of hazardous wildfires.

The EIS should support a far less destructive methodology that would focus on a "species-neutral" approach, focusing on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires. Killing more than 50,000 trees and poisoning them for up to 10 years will have disastrous effects on this ecosystem, and cannot be allowed to happen.

The foundations of the draft EIS have been challenged by a local well respected engineering company which regularly contracts with numerous public agencies and was initially hired to be a consultant on the tree-cutting project. They found that the EIS may potentially create a fire hazard situation of it's own because UC wants to spread chips of the cut trees up to two feet in depth, which is in itself a potential fire hazard, because of the chips themselves, and also that because UC has no plans for re-planting the area. So they would actually be creating a new fire hazard as all different types of vegetation may sprout up after the project is completed.

Finally, the fact that UC's 2020 Long Range Development Plan includes the possibility of building faculty housing and a campus retreat center at its Claremont Canyon Regional Preserve study area must be taken into account with respect to the drastic decision to clear cut vs. much less invasive and yet very effective methods of achieving the same result.

Please retract the draft EIS and support less drastic measures that would achieve the same result with much less damaging consequences.

Laura Anderson

Oakland, CA.  
415.845.4386

**From:** [Jacki La Pointe](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** NO Clear Cutting in East Bay Parks!  
**Date:** Monday, June 17, 2013 4:40:04 PM

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Re: East Bay Hills Hazardous Fire Risk Reduction EIS comment

To: Federal Emergency Management Agency

Cc: East Bay Regional Park District Board, EBRPD Park Advisory Committee, UC Regents, UCB Chancellor Nicholas Dirks, Barbara Boxer, Barbara Lee, George Miller, Dianne Feinstein, Loni Hancock, Nancy Skinner, Jerry Brown, Gavin Newsom, Mayors and City Council Members of Oakland, Berkeley, Albany, El Cerrito, San Pablo, and Richmond

Having lived in the East Bay for almost 50 years, with a deep connection to its beautiful canyons, creeks, forests, and majestic ridge lines, I am incredulous and horrified at the prospect of losing tens of thousands of life-giving trees in the East Bay.

Responsible and balanced fire-risk mitigation is necessary in any park, but FRAUDULENT CLEAR CUTTING of FORESTS for their non-native status and fire prevention is a non-solution that would tragically alter our environment forever.

I am shocked that the "East Bay Hills Hazardous Fire Risk Reduction" plan proposes annihilating non-native forests, and thus their inhabitants for 540 acres across 11 parks from Alvarado/Wildcat Canyon and Miller-Knox Shoreline, all the way down to Chabot!

Most people in the Bay Area still have never heard about this proposal and the critical threat it poses to present and future generations because the EBRPD and UCB are quietly going through the motions, salivating at the prospect of procuring massive FEMA funding. Many extensive informational and public discussion meetings with expert scientists should have been held for many months and been widely announced in every Bay Area news source (there were apparently three public comment meetings total, and I happened to learn about them after the fact).

Here are just six of the reasons why this demonizing of non-native trees is a transparent moneygrubbing scheme for FEMA funds that are desperately needed elsewhere in the nation for actual emergencies:

- 1) Butchering every single exotic Monterey pine, Eucalyptus and Acacia in 11 parks would not reduce fire risk. Scrub brush, dry ground fuel and unprotected wood-framed structures are in fact the risk.
- 2) These tall oxygen-producing trees also precipitate inches of water from the fog during the dry season, preventing fires, and providing moisture for native animals and plants.
- 3) Enormous stands of Eucalyptus in parks such as Alvarado/Wildcat Canyon Regional Park have never burned in 80 years.

4) In addition to the fact that non-natives are now an integral part of our cultural and environmental history, diversity of species is critical because sudden oak death is sadly running rampant without a fully effective cure. Destroy the non-natives, and what would remain after SOD takes its toll on the native trees and plants? A barren, treeless landscape.

5) The proposed two-foot layer of wood chips from the killed tree branches would not encourage growth of the native species that the EBRPD claims to want.

6) With all the information readily available to the public, FEMA, UCB, EBRPD, and the City of Oakland on climate change, I am flabbergasted that there is any discussion at all of clear cutting. Wake up. It's 2013.

I am outraged because the FEMA proposal would:

- \* expose humans to thousands of gallons of cancer-causing herbicides for a decade that would also kill incalculable numbers of native animals, including protected species, and contaminate the earth, reservoirs, groundwater, and streams
- \* create greater fire risk with discarded trunk sections which FEMA proposes leaving on the clear-cut forest floor in addition to the stumps
- \* destroy critical high canopy habitat for raptors and other wildlife
- \* increase the rodent population dramatically with a decreased raptor population
- \* release huge amounts of sequestered CO2 from the stumps which FEMA proposes leaving
- \* destabilize hillsides and damage watersheds with erosion and toxic runoff
- \* leave an ugly wasteland of stumps, toxic chemicals and a proposed two-foot layer of wood chips which would not be conducive to the growth of native species
- \* leave devastation from heavy equipment use
- \* waste approximately \$6 million of taxpayer funds that could be used for real fire-risk mitigation; not to mention the waste of FEMA funds desperately needed elsewhere

FEMA's EIS should instead support a far less destructive species-neutral approach, focusing on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires.

I urge you to please do everything in your power to STOP this fraudulent attempt to destroy our beautiful and fragile East Bay ecosystem!

Thank you in advance,  
Jacki La Pointe  
El Cerrito, CA

**From:** [Lauri La Pointe](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Do not approve funding for deforestation in the East Bay  
**Date:** Monday, June 17, 2013 11:32:33 PM

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I grew up across the street from Alvarado Park and now live a block away from Wildcat Canyon in Richmond. I've lived here for 43 years and cannot fathom the hills without the trees that have grown there for many more years than I have been alive.

Do not approve emergency funds for clear-cutting and poisoning of our cherished trees and everything else that lives surrounding the area.

Put together teen volunteer programs teaching them fire management, put together training programs for the unemployed. Teach them about open space stewardship. Teach them to appreciate our open space.

Do not allow the destruction of habitat.  
Do not approve funds that will permanently negatively alter the face of hundreds and hundreds of acres and poison our ground water.

Do the right thing. No money for destruction.

Thank you,  
Lauri La Pointe  
6317 Kensington Ave  
Richmond

**From:** [Nancy Lane](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comment about UCB and Oakland proposed and connected actions  
**Date:** Monday, June 10, 2013 5:26:52 PM

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In sections 3.4.2.1 and 3.4.2.2 of the proposed alternatives for action, there is a statement that trees with a diameter > 24" will be essentially lopped and dropped in place.

Leaving the lopped branches scattered on site as well as the existing leaf debris is a very, very frightening idea. That makes a density ladder of highly burnable material - leaves, branches and the large trunks. Many of those branches are 12-18" in diameter on a tree with a 36" trunk.

Removing the lopped branches should help. Collect the lopped branches and skid them out with the smaller trees. This is feasible though it implies a different work pattern for the crews, where they are clearing smaller trees, then lopping larger trees and bundling lopped branches with their smaller brethren.

Are there really no plans to deal with the debris on the 80% of UCB and Oakland land that will not be covered with chips? This sounds like a really, really bad idea.

Thank you for collecting our feedback.

--

- Nancy Lane  
Oakland CA

**From:** [Carol LaPlant](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** Opposition to Proposed East Bay Deforestation  
**Date:** Wednesday, June 05, 2013 4:07:48 PM

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I am a longtime Berkeley resident and a frequent visitor to the parks of the East Bay hills. These parks would be decimated if FEMA awards funds for the present proposal to clear cut vast areas of forest and saturate these areas with a toxic herbicide. The areas slated for destruction are filled with magnificent towering trees, generally a mixture of eucalyptus, bay, oak and pine. Some of these trees are native and some were introduced over a hundred years ago, but together they constitute the iconic forests of the East Bay hills, they line hundreds of miles of trails that are beloved by runners, bicyclists and hikers, including myself, and they provide a habitat for raptors and other wildlife that is both precious and irreplaceable.

The Environmental Impact Statement that seeks to justify the destruction of our forests is based on unsubstantiated premises concerning the necessity and the consequences of the proposed deforestation. The purported necessity is that eucalyptus trees present an insurmountable fire hazard that can only be eliminated by the wholesale destruction of entire forests. However, the EIS fails to consider the less drastic and far more reasonable alternative of clearing underbrush, even though underbrush is the principal source of fuel in a forest fire. The EIS also fails to consider the alternative of providing additional funding, equipment and support to the firefighters who guard these areas. The existing firefighting teams have successfully protected us and preserved our property and parks for the past 22 years since the Oakland Hills fire.

The EIS fails to address the consequences of the proposed deforestation and application of herbicide. Instead, the EIS assumes that native trees, such as oak and redwood, will just naturally spring up to replace the destroyed forests. How or when this fortuitous outcome may happen is not explained. Instead, the proponents of this project point to Claremont Canyon, where non-native trees were removed in a relatively small area and replaced by redwoods. The replanting of this area of Claremont Canyon, however, was the result of years of work by local residents and student volunteers to plant and cultivate those redwoods. There is no provision whatsoever in the EIS for the development of new forests after the proposed clear cutting and saturation with herbicide. Instead, the EIA is ludicrously optimistic that nature will eventually provide redwood and oak forests.

When the desired reforestation may happen, or if it will ever happen, is mere speculation. What is not speculation are the immediate consequences of the proposed plan. The destruction of trees, mainly eucalyptus, on University property has already destabilized embankments and caused trails such as the Jordan Trail in Strawberry Canyon to be more muddy in wet weather. The EIS makes no provision for stabilization of land following clear cutting, or any other type of amelioration or restoration. Instead of dealing with the irreparable damage that will be caused by the loss of trees that are essential to the enjoyment of the East Bay trails, as well as to the health of the environment and the wildlife that depend on these trees, the EIS blithely concludes that the eventual result will be positive. Further, the EIS proposes to saturate the deforested areas with a herbicide, Roundup, which will render the deforested areas toxic to humans, animals and plants,



but here too the EIS minimizes or disregards the long and short term consequences of poisoning the land, air and environment.

The requested funding should be denied because the proposed clear cutting and poisoning would turn our majestic forests into vast wastelands. The proposed destruction is an excessive and unnecessary response to the theoretical danger of a major fire, while the harm that this proposal would cause to people, wildlife and the environment is tremendous and certain. The risks greatly outweigh the benefits.

Respectfully,

Carol P. LaPlant

**From:** [Larry](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills Fire Risk Reduction  
**Date:** Monday, June 17, 2013 11:55:51 PM

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I believe I can lay claim to being the first to have moved into the area affected by the 1991 firestorm, since I was closing on my house when the fire occurred. Houses within a couple hundred yards were burned to slag and I was unsure whether my house survived. That being said, I moved into a green, forested area for a reason. I treasure a natural environment. The smell of eucalyptus and Monterey Pine in the fog and rain, the shade provided on sunny days, the wildlife that make these trees their home, are valuable. If the question is whether folks would prefer living in a mature redwood forest as opposed to a eucalyptus forest, I think there would be no debate. However that is not the choice being posed: It is a many-decade old eucalyptus forest vs. a moonscape sporting poisoned stumps. Clearcutting will destroy the current ecosystem. It may recover in many decades if replanting of trees and irrigation / care is budgeted, but this is not the case. Erosion, slides, fires from the cuttings, stump-poisoning runoff, etc. are great concerns. Grassland and shrubs are likely more prone to fast fire movement, if not carrying the same fuel load. I argue for less drastic and a focused, smaller scale means to reduce fire risk with more input from local residents. This monumental change in the environment of the Hills does not seem to have received nearly the amount of publicizing and attention that is appropriate to the proposed outcome. I don't believe I have received any notice via mail or public media. Once the clearcutting of these targeted trees occurs, there is no way to reverse the resulting damage.

Thank you,

-Larry Halme  
6460 Farallon Way

**From:** [Laurie Gardner](#)  
**To:** [EBH-EIS-FEMA-RIX](#); [wdotson@ebparks.org](mailto:wdotson@ebparks.org); [jsutter@ebparks.org](mailto:jsutter@ebparks.org); [bdoyle@ebparks.org](mailto:bdoyle@ebparks.org)  
**Subject:** Please don't fumigate our neighborhood with Mansanto poison!!  
**Date:** Saturday, May 25, 2013 6:13:49 PM

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Dear Sirs and Madams who are making the decision about the FEMA/U Berkeley clear-cutting plan,

I am writing to urge you to oppose the current FEMA plan to clear cut our trees using Mansanto's highly toxic product, Roundup. I get you, on behalf of all of us who live nearby, to use the non-toxic cut and tarp method instead, which is non-toxic and won't pollute our health during the clear-cutting. I also urge high caution in burning Eucalyptus trees, which go up like oil-filled explosive poles.

Thank you for your attention to these requests.

Laurie Gardner, Berkely resident (within 0.25 miles of Claremont Canyon)

Laurie Gardner  
[www.lauriegardner.com](http://www.lauriegardner.com)

**From:** [Connie Lane](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** FEMA Draft EIS  
**Date:** Wednesday, May 22, 2013 3:05:46 PM

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As a native to the East Bay. I fear that this proposal is an overreaction to the Eucalyptus trees that have been part of the Bay Area landscape for over 150 years. I understand that a non native species is not ideal for our area but I can't believe a clear cut / pesticide option is the best solution that FEMA can come up with.

In a 2012 report by Patrick R. Hennessy *The History of Social Perceptions of Eucalyptus Globulus in the East San Francisco Bay Area*. He states that one effective method of eradicating Eucalyptus is via goat grazing, which he considered extremely expensive. Has FEMA considered this option? Have they done any studies?

in a Pavel Svihra's 1992 report . *The Oakland-Berkeley hills fire: lessons for the arborist*.

He clearly states "It should be stressed, however, that native plants also build up flammable fuel over time. For example, native perennial grasses die back to the ground in the late summer or fall, producing a fine, dry material. When weather is dry and windy, and this fuel is ignited, fire spreads very rapidly. It is misleading to claim that dwellings would be safer surrounded by native, less combustible vegetation than among introduced species, if no additional fire prevention measures have been taken." It is well known that keeping a defensible area around structures is probably the most effective method of reducing fire hazards. Has FEMA considered using their funds to create defensible spaces around structures only?

Hennessy concludes "So, while the East Bay is not alone in the struggle to manage E. globulus, East Bay residents and land managers must continue to be aware of the trees' presence in the region, and must adopt land management policies that are conscious of the trees' continued existence."

So I wonder what the real issue here is. Why does FEMA and UC want to pollute our landscape with chain saws and pesticides to remove a few trees when other options are available? Easy and quick?

We have been living with these trees for 150 years. I think we have time.

Connie Laventurier

**From:** [Elizabeth Leite](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Hazardous Fire Risk Reduction Projects, East Bay Hills  
**Date:** Wednesday, June 12, 2013 9:33:01 PM

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Dear FEMA people,

No herbicides should be used in any proposed cutting or re-vegetation within the planned project area. The only sound management practice is one which allows natural re-seeding and re-sprouting of native species while mechanically removing those species which are invasive exotics. Introducing nursery-grown natives is unwise, as natural selection processes are far more reliable and avoid the unintentional introduction of non-adaptive genes. Plants which grow well in nursery containers, with nursery soil and horticultural conditions are not the ones which will ensure long-term survival of species. Natural revegetation may be slower, more labor-intensive, and less tidy, but it will be the best in the long run for the environment. Similarly, allowing only non-Roundup (or similar herbicide)-sensitive species to survive reduces the likelihood of a natural succession process beginning which will result in a healthy, self-sustaining, balanced flora.

I am a lifetime resident of the Bay Area and have been a licensed landscape contractor specializing in the use of native CA plants.

George Leite  
77 Willow Avenue  
Walnut Creek CA 94595

**From:** [makeroftoys@gmail.com](mailto:makeroftoys@gmail.com) on behalf of [David Levy](#)  
**To:** [EBH-EIS-FEMA-RIX](#); [Simms, Mary](#)  
**Cc:** [gilless@berkeley.edu](mailto:gilless@berkeley.edu); [nwcapfc@gmail.com](mailto:nwcapfc@gmail.com)  
**Subject:** East Bay Firebreak  
**Date:** Saturday, May 18, 2013 5:18:24 PM

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Hello,

I am writing with thoughts and concerns about this project. I am a Berkeley Hills homeowner have great concerns about fire. However, I also have concerns about livability. I believe my views are balanced and hope they help find a solution that is balanced, cost-effective AND does the job. *If my letter demonstrates ignorance of the actual intent, know that I am not alone* and that more education would be appropriate.

### 1) Communication of Design Effort

I think "you" (all those trying to do the right thing) are having trouble winning support of the community because not enough effort has been made to **explain the logic behind the design of the chosen firebreak locations**. Seeking to prevent the damage that could be done by fire.... by creating the damage that would be done by a fire (over large areas), is a tough sell. Leaving tons of wood chips (also known as: kindling) on the ground leaves the community perplexed. If you are cutting the trees.... remove the fuel.

My understanding is that a **300 foot wide fuel gap** is enough to provide a strong firebreak, *even in a wind and on a slope*. I think the proposal would have a significantly greater chance of success if the plan was directed to achieving this specific goal. By way of explanation, "Cutting down acres of trees." Sounds amorphous and undirected (and hard to support). The maps include areas that seem quite large, much wider than 300 feet.

Whereas "Creating a 300 foot wide firebreak" sounds of both effective, focused and gives the community a sense that there is an effort being made to minimize the impact. My understanding is that a firebreak can be significantly less than 300 feet and still be effective, largely depending on slope.

Therefore I strongly suggest either: a) Creating a detailed map that explains how the existing plan seeks to minimize the impact as described above; or b) creating a new plan that truly minimizes the impact, as described above. The first objective of such a plan would be to look at the terrain and to design a detailed solution that minimizes the impact. *While increasing the design time, I believe this approach will significantly reduce the overall cost by reducing a number of acres that will fall under the plan.*

### 2) Herbicide

While the economic advantage of using Roundup is clear, there are independent studies that indicate reproductive and carcinogenic issues exist. (Of course, tests sponsored by Monsanto say otherwise.)

The broader issue is I think we have progressed enough as a society to understand

that releasing hundreds of gallons of poison is a bad idea. I think most people would agree that the preferred strategy is to designate areas as "firebreak" and to maintain them with ongoing maintenance until such time as a truly safe chemical solution is available. It simply makes sense and would be received far better by the community.

### **3) Native vs Non-native**

If this issue is indeed a thrust of the project, it has been drowned out and it appears inconsistent with using hundreds of gallons of Roundup.

If the goal is to remove Eucalyptus, the plan needs to be explained more clearly to the public. Removing one type of highly flammable tree and replacing it with others (to reduce fire risk in an area that cannot have a firebreak for aesthetic reasons) is a sensitive and thoughtful approach. If true, you could win many points with the community by expressing it that way.

Furthermore, a plan to reseed with natives, would be great.

Preventing another East Bay fire disaster is extremely important. **Thank you for your work!**

Sincerely,

Dr. David Levy  
Berkeley Hills Resident

**From:** [Lillian Gonzales Brown](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** The destruction of 80,000 trees in Berkeley/Oakland area.  
**Date:** Thursday, May 16, 2013 3:30:56 PM

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While I am not currently living in the Berkeley/Oakland area, it has been my home in the past, and will be in the future. The plan to burn 80,000 trees in these areas and then pour herbicides to prevent future growth is incredibly short sighted and destructive. I understand that Eucalyptus trees burn fast and furious, but the approach of just chopping them down follows the sentiment of "If you've seen one tree, you've seen them all". There is no need to decimate entire areas.

To add a plan of herbicide spraying is courting disaster. The long term disastrous effects of using products like Roundup is well documented. While I understand the need to be cost effective, the proposed plan is overkill to say the least. The fires that devastated the Oakland/Berkeley Hills came within a mile of my home, so I am well aware of what an out of control fire can do, but the proposed solution is short of saying nothing that will burn can be put in those areas at all. There are other solutions that may take more time and cost more, but will serve the community better. Please take this letter into consideration, and know that it represents the feelings of many. Thank you for your time and consideration.

Lillian Gonzales Brown.

Sent from my iPad



**From:** [Stern, Lise S.](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public Comment re: FEMA tree cutting/Berkeley/Oakland  
**Date:** Friday, May 17, 2013 1:00:56 PM

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To Whom It May Concern:

I am writing as a public citizen of the East Bay that I am strongly opposed to the clear cutting of thousands of trees in the Berkeley and Oakland Hills, including Stawberry and Clarmont Canyons; as well as the use of pesticides to control the spread of non-native plants. These canyons provide much needed green space for the urban areas around them and are much loved by the community. They are no more a fire hazard than all of the rest of our beloved park land. Given the trend towards climate change we should be planting more trees, not cutting thousands down. And we do not need to add to the environmental toxins already surrounding us with thousands of gallons of herbicide (Round up). This is a public health risk.

I oppose this project in the strongest terms. Do not do this.

Lise Stern, MFT  
Mental Health Clinician  
Solano County Mental Health

Home) 1502 Laurel Avenue  
Richmond, CA 94805

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**From:** [LJ Speakup](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public comment on the destruction of east bay trees  
**Date:** Monday, June 17, 2013 4:59:15 PM

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I second these comments so articulately submitted by anger writer

The EIS posits a choice between only two alternatives: do nothing, or remove all the eucalyptus and Monterey pine. And so the community appears to have divided: those advocating wholesale acceptance of the FEMA proposed project, and those advocating no action. This circumstance, which flows from legal error so gross as to invite FEMA to withdraw the DEIS and proceed properly lest one of the interested advocates prosecute a worthy legal challenge, represents a regrettable disservice to the community. As I frequently advise my clients and my students, in the face of extremes your challenge is to find the third way. FEMA must develop and implement the third way of selective tree removal.

This writer accepts the reality that eucalyptus and other exotics pose a fire threat in the Claremont and Strawberry Canyon areas. This hazard must be moderated to the greatest degree balanced with other considerations. At the same time, this writer believes that stands of eucalyptus and Monterey pines within the two canyons form an important element of the historic and evolving landscape. One need only consult paintings from the California plein air school to comprehend that these trees have for a century formed a recognizable part of our region's environment and ecology. Just as the law recognizes that few absolutely natural watercourses remain in the state, such that we treat the changed water resource as "natural" for regulatory purposes, so should these trees be understood as earning recognition as part of the landscape that we view and in which we recreate.

Totalitarian elimination of this heritage landscape should be no more pursued than would we pursue elimination of other exotics, for example the striped bass from the Delta, or the post-McClaren vegetation in Golden Gate Park. And yet, action must be taken to improve both the fire security and visual access in these two canyons. Not all environmental conflicts lend themselves to beneficial resolution of competing values, but this one does. On rewrite the authors of the EIS will have the opportunity to honor the philosophy of Immanuel Kant and Isaiah Berlin, that all values are relative.

A thinning of the exotics to preserve the most prominent trees, while removing concentrations that pose environmental risk and actually detract from the views of both hikers and observers, should be developed as a third alternative. For example, the prominent row of Monterey pines atop the north ridge of Claremont Canyon provide a visual landmark to users of the canyon and to those from afar; these should be maintained. Similarly, the landmark eucalyptus inside the elbow of the second switchback on the Claremont Canyon trail -- that is, the switchback that overlooks the Golden Bear soccer field -- would be unthinkable to destroy. Selective thinning will leave these untouched, while promoting the health of the remaining forest and improving visual access from points along the trails. Shade and habitat will be preserved. This worthy example is the one followed by UC Berkeley a few years ago in Strawberry Canyon, and which now forms the preferred method of fuel reduction within the Tahoe National Forest.

The EIS is fatally flawed by deliberately avoiding the development of this alternative, instead including a partial clearance as a variant and part of the proposed project.

This fallacy enables the decision-makers to avoid independent consideration of a partial-clearance alternative on its own, and more regrettably, from conducting the legally-required comparison of that alternative to both project and no action. The present EIS enables the decision-maker to avoid the legal necessity of identifying the alternative, other than no action, that is environmentally favorable; that strikes at the heart of NEPA.

Finally, the EIS fails to stand as a joint EIS/EIR, and thus cannot serve the state-law actors (UC Berkeley and EBRPD) whose approvals to carry out the project also require environmental documentation. This error is also more than academic, in that not only must those local agencies make use of an EIR, but they must formulate and adopt enforceable mitigation measures more potent than those required by NEPA; and prior to that, consider alternatives that are capable of attaining most, if not all, of the project objectives, which a thoughtfully-designed thinning project can accomplish.

Sent from Joel Schipper's iPad  
415-215-9644  
Joel Schipper  
146 Swiss Ave  
San Francisco CA 94131

**From:** [Logan A](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Reconsider plans for East Bay Hazardous Fire Risk Reduction  
**Date:** Saturday, May 18, 2013 11:22:03 AM

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Hello--I am a citizen of Oakland who has recently heard about the FEMA plans to implement Fire Risk Reduction in the East Bay hills through cutting thousands of trees in Berkeley and Oakland and using pesticides and wood chips to prevent further vegetation growth. I am very alarmed to hear this. Pesticides pose a threat to the environment via finding its way into our water systems. Cutting that many trees will threaten or extinguish animal species including the California Red-legged frog and the Alameda whipsnake. The risk of soil erosion and landslides without the vegetation growing there is considerable. There are many environmental factors that affect the health of the land and the surrounding communities (including human) which do not appear to be taken into consideration by your proposal. These public lands belong to the citizenry and your plans will be implemented using our tax dollars. I do not at all support the current plan that FEMA has in mind for Hazardous Fire Risk Reduction in the East Bay. Please contact your local conservation groups who are most familiar with the local terrain to get their recommendations on how to address this issue using the most sustainable methods to the environment and the surrounding communities.

Thank you.

Logan Frederick  
451 Wayne Ave. #2  
Oakland, CA 94606



LOZEAU DRURY LLP

T 510.836.4200  
F 510.836.4205

410 12th Street, Suite 250  
Oakland, Ca 94607

www.lozeaudrury.com  
michael@lozeaudrury.com

June 17, 2013

Via Hand Delivery and E-mail

Alessandro Amaglio, Regional Environmental Officer  
FEMA Region IX Headquarters  
P.O. Box 72379  
Oakland, CA 94612-8579  
alessandro.amaglio@dhs.gov  
EBH-EIS-FEMA-RIX@fema.dhs.gov

Re: Hills Conservation Network Comments Re: East Bay Hills Hazardous Fire Risk Reduction EIS

Dear Mr. Amaglio and FEMA Region IX:

The following comments are submitted on behalf of the Hills Conservation Network (“HCN”) regarding the East Bay Hills Hazardous Fire Risk Reduction Environmental Impact Statement (“East Bay Hills EIS”). As you are aware, HCN is a dedicated group of volunteer citizens and residents seeking to ensure the implementation of effective and cost-efficient vegetation fire management in the East Bay Hills. HCN’s members include homeowners who lost their homes in the 1991 Oakland Hills Fire and who must live every day with the environmental impacts and threats resulting from the fire management decisions of FEMA and the three applicant agencies on a daily basis.

## I. INTRODUCTION.

HCN believes that, in their effort to expand their fire risk management goals to encompass habitat transformation goals, the three applicants, and particularly U.C. Berkeley and the City of Oakland, have lost sight of the truly profound impacts that cutting down well in excess of 100,000 trees – about 50,000 in a large swath looming over the U.C. Berkeley campus and adjacent popular parklands and open space – will have on the East Bay Hills for years to come. Neither U.C. Berkeley nor Oakland have any revegetation plan or maintenance proposal that would assure that clear-cutting hundreds of acres of eucalyptus and other trees will magically transform into a pristine grasslands, coast shrub habitat, or oak woodlands. See Letter from URS Corporation to Alessandro Amaglio, FEMA, p. 1 (May 27, 2009) (attached as Exhibit A). The modeling effort underlying the DEIS models fire behavior as of the day the trees are cut down. Little wonder that there is a substantial improvement. HCN, however, is profoundly concerned that the DEIS and the proposed Project do not explain what happens after the trees are cut beyond painting the stumps with herbicides twice a year. Expert review of the proposed Project indicates that, as described in the DEIS, it would not achieve FEMA’s

long-term goals of reducing fire hazards, will be very costly, and comes with a host of environmental impacts:

the vegetation that the DEIS states will result from the proposed actions would result in median flame lengths that are significantly greater than 8 feet, and maximum flame lengths many times the stated DEIS objective of eight feet. Clearly, if the objective is to reduce the average flame length to less than 8 feet, the proposed actions fail to accomplish this goal and in fact have the net effect of increasing the long-term wildfire hazard in treated areas.

Comment Letter of Chief Kelly Close, M.S., p. 11 (attached as Exhibit B).

As the DEIS acknowledges, and any resident of the East Bay Hills can attest, disturbed lands are the incubators of infestations of exotic weeds, such as thistle, French broom, and pampas grass. Controlling these exotic invasives is a continuous challenge for each of the agencies. Yet, for the proposed Project, the DEIS largely ignores this aspect of the projects. No mention is made of the staffing, frequency, and fire hazards associated with maintaining clear cut areas once the loggers have departed. The model relied upon by the DEIS makes no effort to model the fire hazard from regrowth of vegetation on the cleared sites with whatever level of maintenance the applicants have in mind.

The available cost figures for removing trees in the East Bay Hills are very high. That up front cost is drastically reduced if selective thinning of trees is employed combined with removal of surface and ladder fuels. Although reentries into treated areas is then required in order to remove additional surface and ladder fuels that will accumulate over time and to spray fewer stumps, these maintenance reentries may not be any costlier than the reentries necessary to maintain a clear cut area and prod it toward a mature native habitat. HCN's expert consultant has reviewed the available information and estimates that applying selective thinning to eucalyptus forests and Monterey pines throughout the Project area would be substantially less expensive over the five to ten year term that FEMA must evaluate to apply its long term funding goals. HCN's consultant also demonstrates that a selective thinning alternative would achieve the purpose and need of significant fire risk reduction comparable or better than will be achieved by the proposed Project. As a result, it was entirely arbitrary of FEMA to eliminate that alternative from consideration in the DEIS.

In addition to that overriding concern, HCN is very disappointed at FEMA's inability to provide access to data, studies, analyses and other documents referenced in the DEIS for review during the public comment period. As a result, the scientific integrity of the NEPA process has been seriously compromised. In addition, the DEIS ignores a critical study of eucalyptus forests and fire management that contradicts the basic theories underlying U.C. Berkeley's and Oakland's tree eradication proposals.

HCN believes the DEIS has understated numerous impacts of the Project by applying random thresholds of significance for both air quality impacts and cumulative global warming impacts. By underestimating these impacts, FEMA fails to recognize the mitigation measures necessary to address the Project's harm to air quality and the climate. The DEIS fails to accurately describe or reasonably address the obvious threat posed by piling wood chips up to two feet deep over hundreds of acres. Even U.C. Berkeley's own 2020 Hill Area Fire Fuel Management Program limits mulch depths to between 2" and 5" in order to prevent ground fires. 2020 Hill Area Fire Fuel Management Program, p. 63 ("This is a compromise to allow for weed invasion control while controlling the increased hazard from ground fires") (excerpt attached as Exhibit C).

All in all, the DEIS comes across as an exercise in justifying the applicants' proposed projects rather than the hard look and serious comparison of alternatives required by NEPA. Many of the areas to be treated by the East Bay Regional Park District will employ the selective thinning alternative championed by HCN. FEMA is proposing to fund those efforts. Hence, the simplistic notion that a selective thinning alternative is either ineffective or too costly is refuted by FEMA's proposed funding of numerous areas that will be using that very alternative.

Since FEMA released the DEIS, an outpouring of public concern has flooded FEMA at the public meetings on the DEIS and reflected in the more than 5,000 signatories who have signed HCN's petition demanding that FEMA not fund the clear-cutting of trees in the East Bay Hills. HCN is not surprised by the passion of many Bay area residents who do not wish to be confronted with weed-infested clearcuts for years to come and the knowledge that almost every stump in the East Bay Hills has been dosed with herbicides. Out of respect for these real concerns, and in order for the DEIS to comply with NEPA, FEMA must consider a Selective Thinning Alternative encompassing the entire Project area.

We have prepared these comments with the assistance of an expert Fire Behavior Analyst, Kelly Close, who also currently serves as a Battalion Chief with the Poudre Fire Authority in Fort Collins, Colorado. Chief Close's areas of expertise include fire behavior analysis, wildland fire program management, hazardous fuel response and mitigation planning, and wildland fire operations. Chief Close's behavior knowledge and expertise includes broad experience in wildland fire investigations, including origin and spread analysis, fire behavior and movement in complex terrain, firefighter turnover investigations, and fire loss litigation cases. Chief Close has helped teach a national-level course, Advanced Fire Behavior Interpretation (S-590), for 12 years. Chief Close also has extensive expertise in the use of geographic information systems, analysis of spatial information, and geospatial fire analysis and interpretation. In particular, he has performed numerous complex analyses of fire behavior, potential fire growth, forensic fire behavior analysis, and hazard fuel treatment effectiveness. He has had extensive experience in the use of tools that include FARSITE (Fire Area Simulator), FlamMap, FireFamily Plus, BEHAVE, FSPRO (Fire Spread Probability) and RERAP (Rare Event Risk Analysis Process). Chief Close's comments and curriculum vitae are attached hereto as Exhibit B, respectively and are incorporated herein by reference in their entirety.

HCN also submits the comments of expert hydrogeologist and air quality expert Matthew F. Hagemann, P.G., C.Hg., QSD, QSP. Mr. Hagemann is the former Senior Science Policy Advisor, U.S. EPA Region 9 and Hydrogeologist, Superfund, RCRA and Clean Water programs. Mr. Hagemann's comments and curriculum vitae are attached hereto as Exhibit D and also incorporated by reference.

Each of these expert comment letters require separate responses by BIA.

## II. The DEIS Fails To Comply With NEPA.

"NEPA ... makes environmental protection a part of the mandate of every federal agency and department," *Calvert Cliffs' Coord. Comm. v. United States*, 440 F.2d 1109, 1112 (D.C. Cir. 1971) and is the "basic national charter for protection of the environment." 40 C.F.R. §1500.1(a); *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1185 (9th Cir. 2008). NEPA "is a procedural statute intended to ensure environmentally informed decision-making by federal agencies." *Cal. ex rel. Lockyer v. Dep't of Agriculture*, 575 F.3d 999, 1012 (9th Cir. 2009). NEPA "does not 'mandate particular results, but simply provides the necessary process to ensure that federal agencies take a hard look at the environmental consequences of their actions.'" *Id.* "The 'hard look' 'must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.'" *W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 491 (9th Cir. 2011). Nor can an EIS's discussion of adverse impacts "improperly minimize negative side effects." *Id.* at 491. NEPA's purpose is "to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment." 40 C.F.R. §1500.1(c).

NEPA requires that an agency pay attention to the quality of the science used in an EIS. The agency must "insure the ... scientific integrity of the discussions and analyses in environmental impact statements." 40 C.F.R. §1502.24. The Court's role is not to decide whether the FEIS is based on the best scientific methodology available or otherwise resolve disagreements among experts. *Friends of the Endangered Species, Inc. v. Jantzen*, 760 F.2d 976, 986 (9th Cir. 1985); *Seattle Audubon Society v. Moseley* ("SAS I"), 798 F. Supp. 1473, 1479 (W.D. Wash. 1992). "Rather, the court's task is to ensure that the procedure followed [by the agency] resulted in a reasoned analysis of the evidence before it, and that [the agency] made the evidence available to all concerned." 760 F.2d at 986. A key NEPA procedure is to "insure that environmental information is available to public officials and citizens before decisions are made," 40 C.F.R. §1500.1. This includes scientific data relied upon by an EIS. 40 C.F.R. §1502.24 "requires agencies to provide the public with the underlying environmental data from which an agency expert derives his or her opinion." *Siskiyou Regional Education Project v. Rose*, 87 F. Supp. 2d 1074, 1096 (D. Or. 1999) citing *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998); *Earth Island Inst. v. United States Forest Serv.*, 351 F.3d 1291, 1300-01 (9th Cir. 2003).



**A. FEMA Failed To Make Data And Studies, Reports, And Treatises Referenced In The EIS/EIR, And Relied Upon By Staff Reasonably Available To The Public During The Comment Period On The DEIS In Violation Of NEPA.**

The DEIS relies in large part on a fire modeling effort conducted by FEMA's consultant, Anchor Point. The input data for that model included specific data about vegetation-type and fuel conditions unique to each of the polygons included in the Project. See DEIS, p. 4.3-5 ("Fuel conditions and prevailing weather conditions were input into a quantitative spatial model (FlamMap version 5.0.1.2 64 bit) to predict fire behavior. This allowed comparison among the project areas and an assessment of how the proposed and connected actions as a whole would perform within the larger regional landscape"). See also DEIS, pp. 4.3-10 – 11 (further describing the modeling effort).

"The purpose of NEPA is to 'ensure that agencies carefully consider information about significant environmental impacts' and 'guarantee that relevant information is available to the public.'" *Save the Peaks Coalition v. U.S. Forest Serv.*, 669 F.3d 1025, 1035 (9th Cir. 2012) (emphasis added) (citing *Lands Council v. McNair*, 629 F.3d 1070, 1075 (9th Cir. 2010)). "The very purpose of public issuance of an environmental impact statement is to 'provid[e] a springboard for public comment.'" *N.C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 603 (4th Cir. 2012), citing *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004). "NEPA requires that 'the public receive the underlying environmental data from which [an agency] expert derived her opinion.'" *Earth Island Inst. v. U.S. Forest Service*, 351 F.3d 1291, 1300-01 (9th Cir. 2003), quoting *Idaho Sporting Cong. v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998); 40 C.F.R. §1500.1(b). "An agency must also 'identify any methodologies used' and 'make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the [EIS].'" 351 F.3d at 1301; 40 C.F.R. §1502.24.

"NEPA does not permit an agency to rely on the conclusions and opinions [of experts] without providing both supporting analysis and data." *Idaho Sporting Cong.*, 137 F.3d at 1150; *Sierra Nev. Forest Prot. Campaign v. Tippin*, 2006 U.S. Dist. LEXIS 99458, at \*29-37 (E.D. Cal. Sept. 6, 2006). The CEQ regulations emphasize that "No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference." 40 C.F.R. § 1502.21 (emphasis added). Although supporting studies need not be physically attached to an EIS, the studies must be referenced in the EIS or its appendices and, most importantly, the studies must "be available and accessible" to the public. *Coalition for Canyon Preservation v. Bowers*, 632 F.2d 774, 782 (9th Cir. 1980) (emphasis added). See also *Trout Unlimited v. Morton*, 509 F.2d 1276, 1284 (9th Cir. 1974). "When relevant information 'is not available during the [impact statement] process and is not available to the public for comment[,] . . . the [impact statement] process cannot serve its larger informational role, and the public is deprived of [its] opportunity to play a role in the decision-making process.'" *N.C. Wildlife Fed'n*, 677

F.3d at 604-05, quoting *N. Plains Resource v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). “Failure to provide this information ‘either vitiates a plaintiff’s ability to challenge an agency action or results in the courts second guessing an agency’s scientific conclusions.’” *Earth Island Inst.*, 351 F.3d at 1301, quoting *Idaho Sporting Cong.*, 137 F.3d at 1150. See *Sierra Nev. Forest Prot. Campaign*, 2006 U.S. Dist. LEXIS 99458, at \*29-37.

Where an agency references studies in support of a material conclusion in its EIS, but fails to gather in the studies and independently review that referenced evidence, the agency cannot claim to have reviewed the evidence. “[C]ourts must independently review the record in order to satisfy themselves that the agency has made a reasoned decision based on its evaluation of the evidence.” *League of Wilderness Defenders-Blue Mts. Biodiversity Project v. U.S. Forest Serv.*, 689 F.3d 1060, 1073 (9th Cir. 2012) (emphasis added), citing *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1160 (9th Cir. 2006), overruled on other grounds, *Winter v. NRDC*, 55 U.S. 7 (2008). “If an agency has failed to make a reasoned decision based on an evaluation of the evidence, the Court may properly conclude that an agency had acted arbitrarily and capriciously.” *Earth Island Inst. v. Morse*, 2009 U.S. Dist. LEXIS 68311, at \*15-23 (E.D. Cal. Aug. 5, 2009) (emphasis added), citing *Earth Island Inst.*, 351 F.3d at 1301.

Unfortunately, that is exactly what FEMA is doing with this DEIS, expecting HCN and the public to blindly rely on its consultants’ undisclosed data and modeling runs. Likewise, numerous documents incorporated by reference into the DEIS were not available to HCN or any other members of the public during the comment period. For these reasons, the DEIS must be recirculated while the references and data are gathered in by FEMA and made available to the public for the entire comment period.

On May 8, 2013, HCN requested FEMA to allow HCN access to all of the studies and documents referenced in the DEIS that were not otherwise posted on the Project’s web-site or available by a functional web-link in the DEIS. Letter from Michael R. Lozeau to Alessandro Amaglio, Regional Env’tl Officer, FEMA (May 8, 2013) (attached as Exhibit E). FEMA staff responded promptly that day, indicating that it was passed on to FEMA Region IX’s regional counsel. E-mail from Alessandro Amaglio to Michael R. Lozeau (May 8, 2013) (attached as Exhibit F). On May 9, 2013, I received an e-mail from the Region X counsel indicating that HCN’s document request would have to be submitted as a formal request under the Freedom of Information Act and were not available at that time for an in-person inspection despite the 53-day comment period. E-mail from John-Paul Henderson, Regional Counsel, to Michael R. Lozeau (May 9, 2013) (attached as Exhibit G). On May 10, 2013, HCN objected to the delay in providing HCN access to referenced documents for the entire comment period and resubmitted its request as a FOIA request. Letter from Michael R. Lozeau to Alessandro Amaglio, et al. (May 10, 2013) (attached as Exhibit H). In its request, HCN also requested access to all of the data that was utilized in the fire models relied upon by the DEIS’ analysis as well as data and cost analyses relied upon to reject alternatives to the proposed Project. *Id.*

On May 21, 2013, FEMA responded, stating that it did not believe any of the many documents listed in the DEIS as “References” were incorporated by reference into the DEIS and, hence, the agency would not provide them, apparently even pursuant to HCN’s FOIA requests, except by updating web links once a final EIS is issued. Letter from Alessandro Amaglio, Regional Env’tl Officer, FEMA, to Michael R. Lozeau (May 21, 2013) (attached as Exhibit I). FEMA’s analysis is incorrect. Where a DEIS specifically identifies a document as a reference, that document is incorporated by reference in the DEIS. See *Kern v. United States BLM*, 284 F.3d 1062, 1068, 1074 (9th Cir. 2002) (shorthand references to BLM guidelines deemed incorporated by reference). Whether or not the citation form and the accompanying text in the DEIS complies with 40 C.F.R. § 1502.21 is a separate question. Moreover, whether formally incorporated by reference or not, many of the references listed in Chapter 9 and the various Appendices involve expert studies, analyses, data, and reports underlying various statements and conclusions in the DEIS. The law is clear that “NEPA does not permit an agency to rely on the conclusions and opinions [of experts] without providing both supporting analysis and data.” *Idaho Sporting Cong.*, 137 F.3d at 1150; *Sierra Nev. Forest Prot. Campaign v. Tippin*, 2006 U.S. Dist. LEXIS 99458, at \*29-37 (E.D. Cal. Sept. 6, 2006).

FEMA claims that the data requested by HCN already is set forth in Appendix M of the DEIS. *Id.*, p.2. However, Appendix M does not set forth the specific data for each of the polygons (*i.e.*, treatment areas) addressed in the DEIS. DEIS, App. M. Appendix M does set forth some entries which are the same for all of the Project areas. However, without the data that varies from polygon to polygon, one cannot critique or understand how the model was utilized and whether it was done correctly for the Project. Close Comment, pp. 17-18. In its response, FEMA indicates that it will make available various documents requested by HCN “through the FOIA process. Exhibit I. As of the date of this comment, HCN has not received any of the documents referenced in the DEIS and sought by its FOIA request.

As a result of FEMA’s unwillingness or inability to provide HCN access to numerous documents referenced in the DEIS as well as the data underlying key conclusions in the DEIS, HCN’s and its consultants’ review of the DEIS and its supporting materials has been substantially compromised. Indeed, HCN retained Kelly R. Close, an expert fire behavior analyst who has experience with the BEHAVE and Flammap fire models. Chief Close was prepared to review the data and re-run the models with the data utilized for the DEIS’s proposed Project to evaluate that application as well as for the Selective Thinning Alternative in order to evaluate further both alternatives’ effectiveness at significantly reducing the fire risk and loads in the East Bay Hills. However, FEMA’s refusal to provide the data has frustrated this aspect of HCN’s and Chief Close’s review:

The methodologies for three different fire modeling reports were described in some detail in the DEIS. However, the time and effort it would take to re-create these data would be prohibitively excessive, given the short period for comment. Thus, it was not possible to examine the chain of facts and logic FEMA used to construct the DEIS, and difficult to validate that FEMA’s conclusions were warranted based on the inputs used. That FEMA did not

provide the requested data files for fire behavior modeling made independent assessment of alternative strategies, and comparison of those to the “no-Treatment” option and the chosen option, impossible.

Close Comment, pp. 17-18.

The DEIS also draws conclusions that appear to rely on some data that is not referenced or identified. For example, the Selective Thinning Alternative is rejected out-of-hand because it “does not adequately address the special characteristics of eucalyptus and Monterey pine trees that can make wildfires difficult or even impossible to control” and “its reliance on continuous removal of ladder fuels under tall trees on steep slopes would likely be prohibitively expensive and increase erosion by disturbing soils.” DEIS, p. 3-4. No disclosure is made of, for example, a modeling run that substantiates removing leaf and bark litter and limbing up a eucalyptus grove – a common and effective management practice on many of EBRPD’s high fire risk lands – is any less effective at controlling fire risks than clearcutting such trees and replacing them with highly flammable bushes, exotic weeds, and grass. Likewise, no cost figures have been disclosed or provided from which the public or FEMA could reasonably evaluate the assertion of high costs. Nor is any data or studies disclosed that one could test the notion that hand removal of forest litter and limbing of trees would involve activities or occur on such a frequency as would result in some meaningful risk of erosion. If clearcutting an entire area can manage erosion risk, removing leaf and bark litter every few years from a thinned forest surely does not pose any more significant risk. Close Comment, p. 18. But, because FEMA did not provide any means for the public to access data underlying these assertions, the public’s review of the agency’s conclusions is undermined, rendering this NEPA process an exercise in self-fulfilling prophecy rather than serious comparison of alternatives designed to reduce environmental impacts as much as possible.

**B. Although The DEIS Indicates That Substantial Vegetation Maintenance Will Have To Occur After The Funded Activities Are Complete, The DEIS Does Not Attempt To Describe or Analyze The Environmental Effects From Those Maintenance Actions Or Model The Fire Risks That May Be Present At The End Of Ten Years Of Vaguely Defined Maintenance.**

The DEIS fails to address impacts associated with vegetation maintenance activities that will occur once the Project’s proposal to cut down entire groves and parcels of trees has occurred. Although the DEIS acknowledges the Project’s need to treat resulting tree trunks with herbicides twice a year for several years after they are cut, the DEIS’s project description does not mention the other treatment actions that also must occur to prevent, for example, the areas disturbed by large-scale tree removals from being occupied by exotic weeds, such as thistle, French broom, and pampas grass. See DEIS, pp. 3-21 – 3-27.

The DEIS's project description does mention some effort by EBRPD to reenter sites to control seedlings:

Seedlings of eucalyptus, Monterey pine, and acacia would be hand-pulled or chemically treated depending on size. Seedlings 3 to 6 feet tall that are too difficult to pull out would be treated by hand-spraying their leaves with herbicide. Seedlings over 6 feet in height would be cut no more than 18 inches above the ground and herbicide would be hand-sprayed on the cut stubble. Noxious weeds, such as poison oak, would be treated by spraying their leaves if this could be done without affecting nontargeted plants. If the sprayed herbicide would drift onto nontargeted plants, the weeds would be cut and herbicide would be sprayed on the cut stubble.

DEIS, p. 3-27 – 3-28. No insurmountable concern regarding erosion is identified. DEIS, p. 3-28 (“Best management practices for erosion control would be implemented during and after vegetation removal”). No such similar efforts are mentioned in the descriptions of the U.C. Berkeley and Oakland PDM proposed areas. DEIS Chapter 3 only discusses treatment of eucalyptus and acacia stumps with herbicides as identified maintenance actions. See DEIS, p. 3-22 (discussing U.C. Berkeley’s Strawberry Canyon-PDM, “[t]wice a year, herbicides (Garlon 4, Garlon 3A, Stalker, or Roundup3 [glyphosate]) would be applied to any sprouts emerging from stumps”); *Id.*, p. 3-23 (same for Claremont-PDM); *Id.*, p. 3-24 (discussing Oakland’s North Hills-Skyline-PDM, only follow-up mentioned is “[t]o suppress resprouting of eucalyptus, the cambium ring of stumps would be chemically treated with a combination of Garlon4 and Stalker”); *Id.*, pp. 3-24 – 3-25 (same for Caldecott Tunnel-PDM and Frowning Ridge-PDM).

Only in discussing mitigations to impacts to vegetation does the DEIS provide some vague references to the maintenance and weeding activities that will follow the proposed initial vegetation removal for a period of ten years and the apparent existence of draft mitigation and monitoring plans (though the drafts plans are not included in appendices or otherwise made available). DEIS, pp. 5.1-4 – 5.1-5. There, the DEIS acknowledges that more aggressive removal of invasive exotic species would occur if certain performance standards are not met. *Id.* In Oakland, at least, “[t]he adaptive management process would use the same suite of management methods as used during the initial treatment to control non-native invasive plants[,]” *i.e.* lots of plant removal, potential soil disturbance, and spraying of herbicides. *Id.*, p. 5.1-4. Where exotics control criteria are not met on U.C. Berkeley lands, “maintenance measures may be implemented more frequently or by use of different maintenance approaches, substituting new methods for those that do not demonstrate adequate efficacy.” *Id.*, p. 5.1-5. Likewise, EBRPD plans on yearly reviews of each treated area to reevaluate the vegetation treatment and adapt it as necessary to attain the vegetation management goal. *Id.*, p. 5.1-5. What precisely all of this may add up to is not adequately described by these vague references. However, it is clear there will be substantial on-the-ground activities and hand crews even in areas where clear-cutting has occurred. See DEIS, p. 5.2-2 (“For the effects of the proposed and connected actions to be long-lasting, maintenance and follow-up treatments would be required, as described in Section 3.4.2”).

The potential impacts of these follow-on efforts are never quantified or described. For example, although considerable herbicide application may result, the DEIS does not discuss those applications beyond the stump applications following tree cutting. And although in rejecting a Selective Thinning Alternative the DEIS claims that it may have serious soil erosion impacts, no such concern is mentioned for the comparable entries over ten years to remove invading exotics from the Project's disturbed areas.

Although perhaps not funded by the proposed FEMA grants, these subsequent maintenance activities are part and parcel of the proposed Project:

FEMA has concluded that a need exists to reduce hazardous fire risk to people and structures in these areas. FEMA proposes to address this need by providing financial assistance to the subapplicants through the PDM program and the HMGP for **long-term, cost-effective fuel reduction measures** to reduce risk of loss of life and damage to vulnerable structures from wildfire.

DEIS, p. 2-2 (emphasis added). A major goal of the grant program FEMA is administering is to provide "grants to states and local governments to implement **long-term hazard mitigation measures** after a major disaster declaration." DEIS, p. 2-1 (emphasis added). By long term, FEMA's funding criteria specify that a worthy Project must "[p]rovide for long-term effectiveness and benefits (between 5 and 10 years, depending on the type of action)...." DEIS, pp. 2-2 – 2-3.

The applicants' maintenance efforts will have to be robust to achieve whatever results accrue upon the completion of the initial vegetation removal efforts. "The immediate effect of the proposed fuel treatments will be to greatly reduce the fire hazard, including the potential for torching, crown fire, and spotting. However, this is only a temporary reduction in fire hazard." Close Comment, p. 9. As the DEIS itself mentions "[d]isturbed areas are often susceptible to invasion by non-native species, including weeds, such as French broom, fennel, poison hemlock, and Italian thistle." DEIS, p. 4.2-19 (emphasis added). See also Close Comment, p. 9 ("Removing all eucalyptus, Monterey pine, and acacia trees will be a severe site disturbance. Such catastrophic site disturbances do not differentially favor less invasive native species, but rather favor more invasive species...."). As the University's 2020 Hill Area Fire Fuel Management Program explains:

If the fire behavior goal is removal of exotic species, the entire watershed will need to be treated to be effective. If the entire population of exotics is not removed, it will rapidly re-establish itself – and perhaps expand from its original extent due to the soil disturbance caused by the treatment. Most of the exotic species in the program area – such as thistle, French broom, and pampas grass – invade sites that have been disturbed.

2020 Hill Area Fire Fuel Management Program, p. 25. To remove all the trees from an area but then failing to prevent the regrowth of new ignitable fuel that poses significant

fire risks over a ten year period would be a significant impact of the project. See, e.g. *id.*, p. 33 (“French broom can be a serious wildfire problem once ignited and may increase losses of native brushland and woodlands in proximity”). As FEMA’s consultant has previously explained:

[W]e question the assumption that the types of vegetation recolonizing the area would be native. Based on conditions observed during site visits in April 2009, current understory species such as English ivy, acacia, *vinca* sp., French broom, and Himalayan blackberry would likely be the first to recover and recolonize newly disturbed areas once the eucalyptus removal is complete. These understory species are aggressive exotics, and in the absence of proactive removal there is no evidence to suggest that they would cease to thrive in the area, especially the French broom which would be the only understory plant capable of surviving inundation by a 2-foot-deep layer of eucalyptus chips.

Letter from URS Corporation to Alessandro Amaglio, FEMA, p. 1 (May 27, 2009) attached as Exhibit A). Chief Close emphasizes the fire hazard concern raised by the Project’s lack of focus on maintenance after the initial aggressive treatments described for the Project:

It is my opinion that, in the absence of any continued long-term maintenance beyond what is specified in the EIS, the stated reduction in fire hazard is temporary and only valid for a short period of time post-treatment. The proposed actions will cause severe site disturbance that will not differentially favor native species as claimed, but will favor aggressive, invasive non-native species. Without further long-term maintenance that includes fuel reduction and extensive planting, the proposed actions will result in development of brush fields with characteristics much like native chaparral, leading to dangerous, intense, and destructive wildfires. The net effect is essentially trading one fire hazard for another – at a significant economic cost, detriment to the local ecosystems, and endangerment to the public.

Close Comment, pp. 9-10. Despite the need for active and aggressive ongoing maintenance of clear-cut areas, the DEIS simply treats this entire period as one long mitigation measure rather than an ongoing series of intrusive actions with environmental risks and impacts of their own.

NEPA requires that “[p]roposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement.” 40 C.F.R. § 1502.4(a). As the DEIS admits in the case of follow-up herbicide treatments of eucalyptus and Monterey pine trunks, post-tree removal maintenance is part of the proposed Project. 40 C.F.R. § 1508.23 (“Proposal” exists at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated”). “The purpose of

an [EIS] is to evaluate the possibilities in light of current and contemplated plans and to produce an informed estimate of the environmental consequences. ...Drafting an EIS necessarily involves some degree of forecasting.” *Kern v. United States BLM*, 284 F.3d 1062, 1072 (9th Cir. Or. 2002) (emphasis in original), citing *City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir. 1975). “Once an agency has an obligation to prepare an EIS, the scope of its analysis of environmental consequences in that EIS must be appropriate to the action in question. NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment. Rather, it is designed to require such analysis as soon as it can reasonably be done.” *Kern*, 284 F.3d at 1072.

Whether post-tree removal maintenance activities are the same action as the proposed Projects, “connected actions,” “similar actions,” or cumulative actions, they all must be disclosed and considered in the same DEIS. 40 C.F.R. § 1508.25(a). Post-tree removal maintenance is part of the proposed Project or, at a minimum, is a connected or similar action that must be considered in the DEIS. See *Save the Yaak Committee v. Block*, 840 F.2d 714, 720 (9th Cir. 1988) (an EIS must cover subsequent phases of a project when “the dependency is such that it would be irrational, or at least unwise, to undertake the first phase if subsequent phases were not also undertaken”).

The DEIS’ failure to analyze the full scope of the Project is underscored by the fire modeling effort underlying the DEIS. The modeling effort described in the DEIS and Appendix M only models the initial vegetation removal efforts. See Close Comment, pp. 2, 15. The DEIS only reports the project fire risks and projected flame heights as they would exist the day vegetation is cleared or removed. *Id.*, p. 15 The modeling effort does not attempt to evaluate flame heights and fire risks that will be present at the end of the 10-year maintenance periods:

The modeling of post-treatment conditions presented in the DEIS is invalid because it modeled a state of vegetation and fuels that is irrelevant in the long term. Modeling done for post-treatment conditions shows in many cases that the proposed actions do in fact reduce the fire hazard to acceptable levels as specified in the DEIS. However, these conditions exist only immediately post-treatment. Wildland fuel complexes are inherently dynamic. Several critical factors will change over time that in turn will change the fire hazard, both in nature and degree of severity. The modeling as presented in the DEIS did not assess any potential conditions of the proposed treatment sites 5-10 years in the future, and thus fails to show that one of the key FEMA criteria for funding – long-term effectiveness – will be met. The DEIS clearly states that the intended vegetation mix that will exist upon completion of these projects is an oak, bay, chaparral, and grasses environment, this is the environment that should have been modeled rather than one immediately post-treatment that was only very transitory, and would not exist for more than a few months after the current trees are removed.



Close Comment, p. 15. The DEIS' failure to evaluate the impacts of ongoing, aggressive maintenance activities of the proposed Project or model the fire risks during the Project's ten year maintenance and monitoring period are serious deficiencies that preclude the public and FEMA from evaluating the Project's true impacts and for FEMA to evaluate the Project's ability to meet the agency's long-term goals.

**C. The Failure To Address Most Post-Vegetation Management Activities Of The Preferred Alternative Is Inconsistent With The DEIS's Rejection Of An In-Depth Analysis Of The Combined Alternative Program, i.e., Selective Thinning Alternative.**

FEMA also acknowledges that post-vegetation management maintenance is part of the Project to be reviewed in the DEIS in opting to reject consideration in the DEIS of the so-called "Combined Alternative Program." DEIS, p. 3-4. The "Combined Alternative" or what HCN will refer to in these comments as the "Selective Thinning Alternative," relies on selective thinning of trees, leaving large trees, even eucalyptus trees, in place, removing lower limbs from larger tree, and removing surface fuels, and ladder fuels. Close Comment, p. 6. As is discussed below, the DEIS violates NEPA by failing to analyze that feasible alternative for meeting the Project's purpose and needs. However, FEMA's rejection of that alternative from consideration is fundamentally flawed initially because FEMA claims that undisclosed costs to maintain that Alternative over a five to ten year period would be prohibitively expensive while at the same time ignoring the vegetation maintenance costs that will accrue to the Applicants to maintain their clear-cut areas as they attempt to goad those landscapes toward more natural vegetation-types rather than weed infested fire hazards. DEIS, pp. 3-3, 3-4 (selective thinning alternative's "reliance on continuous removal of ladder fuels under tall trees on steep slopes would likely be prohibitively expensive and increase erosion by disturbing soils").

FEMA cannot have it both ways. If the DEIS is going to reject a Selective Thinning Alternative based on undisclosed costs of reentering thinned areas every couple of years to remove accumulated leaf litter and branches, it must disclose not only those allegedly prohibitive costs but also the full maintenance efforts and costs required to maintain its alternative to clear-cut large swaths of eucalyptus and pines and prevent those areas from degenerating into new fire hazards. HCN believes that the follow-up efforts for either the proposed Project or a Selective Thinning Alternative would likely be comparable and would not pose any different risks of erosion. However, because the DEIS improperly cuts off any detailed description or impact analysis of the maintenance portion of the proposed Project, the DEIS also has cut-off the ability of FEMA or the public to evaluate the relative post-treatment maintenance costs of the two alternatives.

**D. The DEIS Fails To Disclose Or Discuss Responsible Opposing Scientific Views And Contrary Expert Agency Comments.**

In the EIS, the agency "shall discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised." *Ctr. for*

*Biological Diversity v. United States Forest Serv.*, 349 F.3d 1157, 1167 (9th Cir. 2003), quoting 40 C.F.R. § 1502.9(b). “This disclosure requirement obligates the agency to make available to the public high quality information, including accurate scientific analysis, expert agency comments and public scrutiny, before decisions are made and actions are taken.” *Id.*, citing 40 C.F.R. § 1500.1(b).

The DEIS fails to live up to these standards, ignoring the highly relevant eucalyptus studies and modeling that have been produced in Australia and failing to disclose comments of cooperating agencies, including in particular comments provided by the Forest Service.

The DEIS entirely ignores the Vesta model, the fire prediction management that was expressly developed to address eucalyptus forests. That model is based on factors applicable to eucalyptus trees that contradict the factors underlying the general Flammap model. As Chief Close states:

[Vesta] was developed specifically for assessing fire behavior in eucalyptus fuel types (Gould et al., 2009). Vesta determines a separate hazard rating for surface and near-surface fuels and bark fuels. It then determines the rate of spread based on surface and near-surface fuel characteristics, and fuel moisture. Finally, Vesta combines the surface fuel hazard rating with the bark hazard rating and wind speed to determine the spotting potential. Vesta’s real strength is that it is the only fire behavior prediction system that is specific to eucalyptus fuel types.

Close Comment, p. 7. Chief Close explains the fundamental differences between the Vesta model and the models applied for the Project:

There is a definite difference in how Vesta handles spotting and how the U.S. fire modeling system does so. In both cases, there is a rising column of hot air that initially comes from an intense surface fire. Once the base of the tree crown ignites, it adds to the intensity and vertical lift of the firebrand, which eventually is lofted above the tree tops and carried some distance by wind.

In the U.S. system (which FlamMap, BEHAVE and other programs use), the firebrand is generated in the tree canopy low in the crown fuels, then lofted vertically. Surface fuels initiate the process, but most of the fire dynamics happen in the burning tree crown.

In Vesta, the firebrand is generated mostly from surface and near-surface bark fuels, and to a lesser extent by near-surface and elevated fuels (see attached diagram). Spotting is strongly tied to a factoring of surface fire spread rate and wind, which generates the surface fire intensity necessary for vertical rise. However, unlike the U.S. model, the tree canopy does not significantly contribute to firebrand production. Its primary role is in adding to

the intensity of the rising column of hot air and keeping the piece(s) of bark burning.

Close Comment, p. 16.

If the Project applies the Vesta modeling effort, it would more accurately point out the effectiveness of the Selective Thinning Alternative, rejected out of hand as ineffective by the DEIS. The intent of the study underlying the Vesta model was to develop a fire behavior prediction system based on real, in-the-field testing. 104 fires were intentionally set in Australian eucalyptus forests to document fire behavior and variables. No such effort can be claimed for Flammap or any other model in regard to its application to eucalyptus forests.

What was learned in the development of Vesta is that the rate of fire spread is related to wind speed if it's over 3 mph, but the prime determinant of spread is the fine fuel on or near the ground. "Rate of spread is directly related to characteristics of the surface fuel bed and understory layers, but only weakly related to fuel load alone." J.S. Gould, et al., "Project Vesta: Fire in Dry Eucalypt Forest: Fuel Structure, Fuel Dynamics And Fire Behavior" (Commonwealth Industrial and Scientific Research Organisation, 2007) (available at GoogleBooks - <http://books.google.com/books>). "Surface fuel layer – leaf, twig and bark of the overstory and understory plants – this layer usually makes up the bulk of the fuel consumed and provides the most energy released by the fire." *Id.* The Vesta report, in general concludes that "the best variables to build a model to predict fire spread were fine fuel moisture, wind speed, surface fuel hazard score and a combined variable of near-surface fuel hazard and height." *Id.*, p. 27.

Other conclusions drawn by the Vesta study also contradict key basic assumptions relied upon by the DEIS and its selection of a single, remove all eucalyptus alternative. Thus, the study underlying Vesta concludes that "[Eucalyptus] bark tends to burn in-situ on the stem rather than flaking off to form firebrands." Vesta Report, p. 46. Similarly, the report explains that firebrands from eucalyptus trees generally burn out before they land: "[m]ost flakes of bark appeared to be only 1 or 2 mm thick and, because they would burn out quickly, would probably be effective firebrands to a few tens of meters." Vesta Report. "All spot fires that did occur . . . were overrun by the main fire while they were small and did not have any effect in increasing the rate of spread of the fire." *Id.* These results of the Vesta study directly contradict fundamental premises of the DEIS, including that ember cast from eucalyptus would pose a fire threat up to 2,000 feet away and that such embers are the main cause of propagating new fires and structure losses. See DEIS, p. 4.3-11 (assuming structures are exposed to fire-inducing ember cast as far away as 2,000 feet); DEIS, p. 5.2-1 (describing basic assumption that "[t]rees that burn intensely and generate greater numbers of flaming embers that can start new fires and ignite structures, such as eucalyptus and Monterey pine, would be thinned or removed entirely"); p. 5.2-2 ("Reduction of torching is a significant benefit because the burning embers cast off as a result of torching are a major cause of structure loss"); DEIS, p. 5.2-3 (As trees torch and their tops burn they generate embers that move ahead of the main

fire front and propagate new fires. Embers are the main cause of structure losses”); *Id.* (“Under hot, dry, windy conditions, 50% of the embers could grow into new fires”).

These presumptions underscore one of the two reasons that the Selective Thinning Alternative was rejected by FEMA. DEIS, p. 3-2. The Vesta report directly contradicts that rationale.

In addition to ignoring the Vesta study and model, FEMA also has refused to disclose what HCN understands to be contrary expert opinion from various cooperating agencies on the Project. In July 2011, HCN sent a FOIA request to FEMA specifically asking for documents relating to expert opinions of the proposed Project by the U.S. Forest Service and the U.S. Fish & Wildlife Service. On October 22, 2012, FEMA responded by providing totally redacted versions of documents submitted by those and other agencies. Exhibit J. FEMA claimed for the most part a deliberative process privilege. HCN followed up more recently with additional FOIA requests for the same memorandums, among other documents. See Exhibits E & H. No documents have as yet been provided.

FEMA cannot now rely upon a deliberative process privilege in this NEPA proceeding. Such a privilege is inappropriate now that the DEIS is released. As the Ninth Circuit states, FEMA is obligated “to make available to the public high quality information, including accurate scientific analysis [and] expert agency comments ... before decisions are made and actions are taken.” *Ctr. for Biological Diversity v. United States Forest Serv.*, 349 F.3d at 1167, citing 40 C.F.R. § 1500.1(b). 40 C.F.R. § 1506.6(f) expressly waives the deliberative process privilege in regard to interagency memorandum in the context of a NEPA process, requiring FEMA to make any documents underlying a DEIS “available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. § 552), ***without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action.***” 40 C.F.R. § 1506.6(f) (emphasis added). “When relevant information ‘is not available during the [impact statement] process and is not available to the public for comment[,] . . . the [impact statement] process cannot serve its larger informational role, and the public is deprived of [its] opportunity to play a role in the decision-making process.’” *N.C. Wildlife Fed’n*, 677 F.3d at 604-05. Hence, because FEMA failed to disclose the coordinating agencies’ comments and reviews, especially those views that critiqued the approach described in the proposed Project, FEMA is in violation of NEPA.

#### **E. The DEIS Arbitrarily Eliminates Review Of A Selective-Thinning Alternative Despite That Alternative’s Ability To Feasibly Achieve The Project’s Purpose And Goals.**

FEMA’s elimination of a Selective Thinning Alternative from detailed analysis in the DEIS is arbitrary and capricious. Many of the polygons to be treated by EBRPD apply thinning and removal of surface and ladder fuels. For example, EBRPD includes the 13.7 acre Claremont Canyon Regional Preserve-PDM in its funding proposal. DEIS, pp. 3-26,

3-15 (Figure 3-1(e) (site CC001-PDM)), 3-29. That site abuts neighborhoods and structures immediately south and west of the Strawberry Canyon-PDM, the Frowning Ridge-PDM, and the Claremont-PDM, all of which are proposed by UC and include clear-cutting of eucalyptus and Monterey pine. DEIS, pp. 3-1(e), 3-21 (Strawberry Canyon PDM) (“Non-native trees, including all eucalyptus, Monterey pine, and acacia, would be cut down”); p. 3-23 (Claremont-PDM) (“About 10,000 trees would be cut down—mainly eucalyptus with some pine and acacia. As with Strawberry Canyon-PDM, the goal is complete eradication of eucalyptus, Monterey pine, and acacia”); pp. 3-24 – 3-25 (Frowning Ridge-PDM) (“Approximately 25,000 eucalyptus and pine trees up to 48 inches DBH would be cut down”). However, Claremont Canyon Regional Preserve-PDM proposes selective thinning instead:

The dominant type of vegetation is eucalyptus forest. ***EBRPD would thin existing dense eucalyptus stands, favoring retention of the larger trees,*** to create an open eucalyptus stand with minimal understory. Elsewhere, oak-bay woodland and California annual grassland on the site would be preserved.

DEIS, p. 3-26 (emphasis added). How EBRPD’s use of such an option is fundable, while an alternative that focuses on expanding that feasible option to all the treatment areas, or at least the areas proposed by UC and Oakland (especially Strawberry Canyon PDM, the Frowning Ridge-PDM and the Claremont-PDM, as well as Oakland’s North Hills-Skyline-PDM [DEIS, p. 3-23]), cannot be reasonably explained. Chief Close also identifies this inconsistency, reviewing the fire modeling done for EBRPD:

the fire modeling Rice conducted for the DEIS (2011) showed that a number of EBRPD treatments, which are similar to the Combined Alternative Program, are very effective in reducing fire intensity to acceptable levels (flame lengths below 4 feet) and in minimizing or eliminating the potential for torching or crown fire (DEIS, Appendix M-2, pp. 17-39). The DEIS failed to acknowledge this in eliminating the Combined Alternative Program from consideration. This is puzzling in that the DEIS incorporated the EBRPD hazard reduction plan as a viable part of the overall strategy of reducing wildfire hazard in the East Bay Hills, yet the Combined Alternative Program, similar to the proposed actions in many polygons of the EBRPD’s plan, was not considered in DEIS.

Close Comment, p. 14.

It is clear from DEIS, Appendix M, that the modeling of Claremont Canyon Regional Preserve-PDM (CC001-PDM) shows a fire risk reduction essentially equivalent to the fire risk reductions that will result immediately after the completion of clear-cutting within the Strawberry Canyon PDM, the Frowning Ridge-PDM and the Claremont-PDM. Thus, after treatment, modeling indicates that CC001 will only have a risk of surface fire with no flame lengths exceeding 4 feet. DEIS, Appendix M, Rice, Carol, Fire/Fuels Analysis For FEMA Grants In The East Bay Hills, p. 19. There is no risk of torching or

crown fire. *Id.* This result from selective thinning and surface and ladder fuel removal in CC001 is essentially identical to the result reported for the clear-cut treatments in the Strawberry Canyon PDM, the Frowning Ridge-PDM and the Claremont-PDM. See *id.*, p. 34.

An EIS's review of a reasonable range of project alternatives "is the heart of the environmental impact statement." 40 CFR § 1502.14. The DEIS "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public." *Id.* The CEQ regulations require an EIS to state the purpose and need of the project and to consider a reasonable range of alternatives. *Western Watersheds Project v. Abbey*, 2013 U.S.App. LEXIS 11533\*25 (9th Cir. June 7, 2013); 40 C.F.R. §§ 1502.13, 1502.14. "[A] project's scope and purpose define the reasonable range of alternatives that must be analyzed." *Id.* "[A] federal agency's EIS must '[r]igorously explore and objectively evaluate all reasonable alternatives [to a proposed action], and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.'" *Southeast Alaska Conservation Council v. FHA*, 649 F.3d 1050, 1056 (9th Cir. 2011), citing 40 C.F.R. § 1502.14(a). The Ninth Circuit has "repeatedly recognized that if the agency fails to consider a viable or reasonable alternative, the EIS is inadequate." *Southeast Alaska*, 649 F.3d at 1056. Where the administrative record discloses that reducing a proposed project's size would help bring it into compliance with applicable standards, evaluating a smaller alternative is necessary to a reasonable analysis. See, e.g. *W. Watersheds Project v. Salazar*, 2011 U.S. Dist. LEXIS 111728 at \*36-37 (D. Idaho 2011).

As noted above, the purpose of the Project is to substantially reduce fire risk to people and structures in the East Bay Hills. DEIS, p. 2-1. The Project need tracks the purpose, the DEIS stating that "FEMA has concluded that a need exists to reduce hazardous fire risk to people and structures in these areas." DEIS, p. 2-2. "FEMA proposes to address this need by providing financial assistance to the subapplicants through the PDM program and the HMGP for long-term, cost-effective fuel reduction measures to reduce risk of loss of life and damage to vulnerable structures from wildfire." *Id.* The DEIS also identifies seven criteria, culled from FEMA's grant criteria, that a feasible alternative should meet in order to be considered. DEIS, p. 2-3. The relevant criteria include:

- 1) Be technically feasible and implementable, 2) Solve a problem independently, consistent with 44 CFR § 206.434(c)(4), 3) Be cost effective

<sup>1</sup> The DEIS text itself in Chapter 5 does not provide any kind of useful explanation to the public, Table 5.2-2 suggesting that many of the proposed treatments actually make the clear-cut areas worse fire hazards. See DEIS, pp. 5.2-7 – 5.2-9 (Table 5.2-2). Although HCN believes Table 5.2-2's conclusions may unfortunately come true were FEMA to have run the fire models to determine flame lengths at the end of the 10-year maintenance period, currently the Table is of no value to the reviewing public and likely has misled a number of reviewers.

and able to substantially reduce the risk of future damage, hardship, loss, or suffering resulting from a major disaster, consistent with 44 CFR § 206.434(c)(5) and related guidance...., 5) Provide for long-term effectiveness and benefits (between 5 and 10 years, depending on the type of action), 6) Be consistent with the goals and objectives identified in the current FEMA-approved state mitigation plan and local mitigation plan for the jurisdiction in which the action would occur, 7) Conform to 44 CFR parts 9 and 10 and with all applicable environmental and historic preservation laws, implementing regulations, and executive orders, including the National Environmental Policy Act (42 U.S.C. §§ 4321-4347), National Historic Preservation Act of 1966 (16 U.S.C. §§ 470 et seq. ), Endangered Species Act (16 U.S.C. §§ 1531-1544), Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), and Executive Order 12898 (Environmental Justice) .... [and] 10) Meet the requirements of applicable local, tribal, state, and federal laws; implementing regulations; and executive orders.

DEIS, pp. 2-2 – 2-3.

Initially, FEMA’s effort to avoid considering an expanded alternative relying on selective thinning, similar to the selective thinning that EBRPD is planning on carrying out on many of its parcels, overlooks one of the “minimum project criteria” set forth in FEMA’s Hazard Mitigation Grant Program: “To be eligible for the Hazard Mitigation Grant Program, a project must: ... (iii) Has been determined to be the most practical, effective, and environmentally sound alternative **after consideration of a range of options....**” 44 C.F.R. § 206.434(c)(v)(iii) (emphasis added). Notably, the criteria listed in the DEIS make no mention of this mandatory, minimum criterion. The one clear option for FEMA to consider here is a Selective Thinning Alternative for all parcels covered by the requested grants. As discussed further below, given EBRPD’s reliance on selective thinning and surface and ladder fuel removal for many of its parcels and an expert analysis confirming that management works as well and at less cost than the proposed clear-cutting projects, a Selective Thinning Alternative must be considered to meet Section 206.434(c)(v)(iii)’s criterion.

FEMA relies on the first two criteria listed in the DEIS to claim that a Selective Thinning Alternative does not achieve the Project’s purpose and need. The Selective Thinning Alternative identified by FEMA (the agency names it the “Combined Alternative Program”) includes the following components:

- Removal of brush and surface fuels
- Removal of lower tree limbs
- In areas where trees are thick, species-neutral removal of small trees and in some cases understory trees to remove ladder fuels and to create space between trees while maintaining shade to suppress growth of shrubs and grass
- Removal of eucalyptus debris that falls off the trees after a freeze
- Keeping grass short by mowing or grazing, especially along roads

DEIS, p. 3-2. FEMA rejects this alternative from consideration based on the assertion that “[r]epeated removal of ladder fuels is expensive and can be difficult on the steep slopes so common in the proposed and connected project areas. In addition, continuous regular maintenance on steep slopes can destabilize soils and lead to erosion.” *Id.*, pp. 3-3, 3-4 (alternative’s “reliance on continuous removal of ladder fuels under tall trees on steep slopes would likely be prohibitively expensive and increase erosion by disturbing soils”). FEMA also asserts that this alternative’s “species-neutral approach does not adequately address the special characteristics of eucalyptus and Monterey pine trees that can make wildfires difficult or even impossible to control.” *Id.*, p. 3-4.

FEMA’s rationales for deleting the Selective Thinning Alternative are unsupported by any references or evidence. In the case of the special characteristics rationale, on its face, it is inconsistent with the DEIS’s acknowledgment that “[t]orching can be greatly reduced by removing surface fuels and “ladder fuels,” which include lower limbs, smaller trees, hanging strips of eucalyptus bark, and shrubs that can carry a fire up into the treetops (the crown or canopy).” DEIS, p. 3-3. See also DEIS, p. 5.2-1 (“The proposed and connected actions would remove the lower limbs of trees, which would reduce the likelihood that surface fires would move up the trees to become crown fires”); DEIS, pp. 5.2-3 – 5.2-4 (“Where the tree canopy would be eliminated, the chance of torching and crowning would be eliminated. Where the tree canopy would be thinned, the potential for crown fires would be reduced. Many remaining trees would be pruned up to 8 feet from the ground, reducing the chance of fire moving up into the tops of the trees and causing torching. As a result, the potential for producing embers would also be greatly reduced”). Thus, on its face, the DEIS does not identify why this fact would not “address the special characteristic” of eucalyptus and Monterey pine trees sufficiently to achieve the Project’s purpose of reducing fire risks. See UC 2020 Hill Area Fire Fuel Management Program, p. 72 (hand labor effective to remove litter from mature eucalyptus forests).

As Chief Close explains, the typical fire reduction strategy in eucalyptus forests is reducing surface fuels. Close Comment, p. 11. “In eucalyptus forests, the greatest hazards are intense surface fires and long-range spotting from bark. Reducing surface fuels has been found to be greatly successful in reducing these hazards, as well as minimizing the potential for crown fire.” *Id.* Likewise, the DEIS ignores established science on eucalyptus forests that finds eucalyptus trees actually help *reduce* fire hazard by breaking up turbulent flow dynamics of strong winds and reduce the hazard from flying embers. Close Comment, p. 11 (“Clear cutting gum barks reduces safety from firestorms, both along the Urban Wildland Interface as well as internal defensible space areas where they assist with high-risk ground fuel mitigation.” Lofft, 2010). Because the DEIS does not even consider this science, there is no explanation as to why eucalyptus forests in the Bay area would have a different affect from those reviewed in the referenced study.

The assertion that the subsequent maintenance of Selective Thinning would be “prohibitively expensive” is not supported by any citation to evidence. The grant applications indicate that the cost/acre of EBRPD including a significant number of



polygons applying a selective thinning approach are significantly less costly than the per acre costs proposed by U.C. Berkeley (U.C.'s proposal is twice as expensive per acre) and Oakland (Oakland's proposal is three times as expensive). See Close Comment, p. 19. And, as discussed above, even if all eucalyptus and Monterey pines are removed from an area, hand labor will be required to keep exotic weeds from establishing themselves in addition to the hand labor necessary to coat stumps with herbicides. If there is no cost analysis underlying FEMA's assertion, then its conclusion is entirely arbitrary. If there is a cost analysis and it was not disclosed during the comment period, as requested by HCN, then the agency cannot rely upon it. Either way, an uncorroborated, vague assertion that a Selective Thinning Alternative is expensive is an arbitrary rationale for not considering that alternative.

FEMA cites to no evidence for the notion that hand removal of surface and ladder fuels would somehow create a greater risk of erosion than large-scale removal of tens of thousands of trees, manual application of pesticides, or the necessary vegetation maintenance that will be necessary under the proposed Project to prevent invasion of disturbed areas by invasive weeds. See Close Comment, p. 18.

Chief Close concludes that, "it is my opinion that the Combined Alternative Program approach is clearly a preferable alternative. It meets all of FEMA's mandatory criteria, follows sound forestry practices, is consistent with current accepted hazard fuel reduction practices for eucalyptus, does not result in an increase in invasive brush species post-treatment, deposits far less flammable woody material on the treatment sites, and is more economically sound." Close Comment, p. 20.

FEMA's consultant also advised the agency that the Selective Thinning Alternative is feasible and should be considered in detail in the DEIS:

*Thinning targeted species rather than removing all and regularly clearing the understory.* The UC accurately cites increased costs and a longer time period to implement as reasons that this alternative is not preferred, but the UC does not provide information that demonstrates that the increased costs or longer implementation period make this alternative infeasible. This alternative would not be as effective as the proposed project at reducing the fire hazard. However, this alternative would reduce the fire hazard and would thus meet the purpose and need. This alternative should be evaluated in future NEPA documents.

URS Report, p. 6. Apparently, the only overarching advocate for not reviewing the Selective Thinning Alternative was U.C. – an applicant with an apparent bias toward its preferred vegetation management scheme. Every neutral evaluation has determined Selective Thinning Alternative is reasonable and should be reviewed in detail. FEMA should add that alternative to the DEIS' detailed review.

## F. The DEIS Fails To Mention Fire Risk Posed By Disposing Of Wood Chips In Large Areas Up To Two Feet Deep.

The proposed project includes U.C. Berkeley's and Oakland's plans to spread chipped eucalyptus and pine trees at depths of up to two feet over vast areas covering up to 20 percent of those applicants' portions of the Project site. See DEIS, p. 5.1-25 ("The proposed and connected actions would generate wood chips that would be spread over approximately 20% of many project areas to a maximum depth of 2 feet"); DEIS, p. 3-22 – 3-24. Contrary to the U.C. Berkeley and Oakland proposals, EPRPD proposes to chip fewer trees and "[w]ood chips left on site would be spread over up to 20% of each site to an average depth of 4 to 6 inches." DEIS, p. 3-27. Likewise, U.C. Berkeley's current 2020 Hill Area Fire Fuel Management Program calls for mulch depths of between 2 and 5 inches. 2020 Hill Area Fire Fuel Management Program, p. 63 (Exhibit C). "This is a compromise to allow for weed invasion control while controlling the increased hazard from ground fires." *Id.*

Chief Close walks through the clear science documenting the fire hazard posed by depositing wood chips at depths greater than five inches and their propensity to spontaneously combust. Close Comment, pp. 12-13. He also applies the site-specific factors that would increase the risk of mulch fires as a result of the Project, including the oil content of eucalyptus chips, the high winds in the area, and the drier conditions that will be present after implementation of the Project's initial treatments. *Id.* "Given the warmer, drier conditions on the treated sites after canopy removal, the high oil and volatile chemical content of eucalyptus fuels, and the frequent occurrence of strong winds in the proposed treatment areas, it is my opinion the deposition of eucalyptus mulch outlined in the DEIS will pose a very significant fire hazard for a number of years post-treatment." *Id.* Chief Close also warns of the stealth character of chip fires, "[f]ires that ignite through spontaneous combustion or by other means of ignition may smolder and spread beneath the surface for days before being detected, making suppression of those fires extremely difficult and time-consuming." *Id.*, p. 13. And mulch fire impacts are long-lasting because of the resulting harm to underlying soils. *Id.*, p. 13. Lastly, the fire modeling done for the Project fails to account for the fire risk posed by spreading fuel over vast portions of the Project area, again improperly discounting this risk. *Id.*, p. 15. As Chief Close states:

the proposed treatments would convert non-fuels (standing trees) into available surface and ground fuels through a combination of mulching woody material and lop-and-scatter treatment of branches. This introduces a very significant amount of fuel onto the ground surface that was not there pre-treatment and creates a new fire hazard posed by the heavy accumulation of wood chips and other woody debris.

Close Comment, p. 9.

The URS Corporation again agrees with all of Chief Close's concerns. URS notes that "[s]tudies have shown that mulch layers actually can pose a fire risk depending upon

the type of material, the depth of the mulch, and the climate at the mulch site.” URS Report, p. 3. URS then lists off all of the local factors that create a higher fire risk of creating 2-foot thick layers of eucalyptus wood chips in the east Bay Hills. *Id.* Rather than acknowledge these risks forthrightly, the DEIS goes about attempting to understate the concern. The DEIS’s analysis of this potential impact is inadequate and does not reasonably address this impact.

### **G. Thick Layers of Wood Chips Will Promote Non-Native Species And Prevent Establishment of Native Vegetation.**

The DEIS avoids discussing the impacts piling two-feet of wood chips over extensive areas will have on vegetation. As Chief Close explains, “[the DEIS] fails to acknowledge the detrimental effect a 24-inch depth of mulch will have on the remaining vegetation.” Close Comment, p. 12. Chief Close cites to studies recommending no more than 2-3” depth of mulch in landscaping to minimize detrimental effects on the remaining trees. *Id.* He also underscores the DEIS’s internal inconsistency when discussing depositing two-feet of mulch, claiming on the one hand that it will disfavor non-natives while on the other hand favoring native plants. No science supports this facially absurd proposition. See *id.* Again, FEMA’s consultant highlights this untenable proposition:

Despite thorough research, we were unable to find documentation of the ability of exotic chip mulch to suppress undesirable species while encouraging favorable species. Chip mulch can be a successful deterrent to invasive plants, but would have to be coupled with selective native plantings if the intended long-term outcome was revegetation in native cover. In the absence of native plantings/seeding, it is likely that as the chips decompose (refer to Issue 6, below, for a discussion of decomposition rates) dormant seeds in the seed bed from the exotics that dominated the site pre-treatment will germinate and regain dominance. As written, the proposed project would likely delay but not prevent the reestablishment of non-native vegetation communities. Native cover could develop in small areas around existing, patchy, coyote bushes, but it is highly unlikely that the site would naturally restore itself to native conditions given the aggressive nature of the weedy exotic species that are already established in the treatment areas and dominate the seed bed.

URS Report, p. 2. The research publications cited in the DEIS describe depths of no more than 12.5 cm (5 inches). Close Comment, p. 12. There is no valid rationale for allowing U.C. Berkeley and Oakland to pile 2-feet of woodchips over 20 percent of the Project area.

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**H. The DEIS's Analysis Of Air Quality Impacts Applies Arbitrary Significance Thresholds, An Exaggerated Time Frame That Emissions Will Occur Evenly Over a Ten Year Period, and Fails to Describe Feasible Mitigations.**

The fundamental assumptions underlying the DEIS's air quality impacts analysis bear no resemblance to the Project's proposed timeline and ignore expert significance thresholds established by the Bay Area Air Quality Management District ("BAAQMD") designed in part to implement federal air quality standards. As a result, the DEIS largely ignores numerous, relevant and necessary mitigation measures to assure the project's air emissions do not result in significant impacts.

**1. The DEIS arbitrarily applies thresholds of significance for air pollutants that have nothing to do with the region where the project is located and entirely ignore thresholds developed by the Bay Area Air Quality Management District implementing federal air standards in the project area.**

In purporting to evaluate the Project's air quality impacts, the DEIS randomly selects the exact same significance thresholds of 100 tons per year for six distinct air pollutants despite the fact that the Bay Area regional air standards for those pollutants are all different and without any explanation of how applying an arbitrary 100 ton per year standard to all six pollutants is related to assuring achievement of standards or no degradation of air quality in the Project area or region.

The 100 ton per year thresholds applied by the DEIS are borrowed from EPA General Conformity levels used to determine whether nonattainment and maintenance emissions are exempt from a formal General Conformity determination by federal agencies with EPA. Applying these levels as stand-ins for air quality significance thresholds under NEPA is entirely arbitrary. The trigger numbers were designed based largely on the resources of federal agencies to perform the EPA conformity review rather than a conclusive finding of whether a project's air emissions might result in significant impacts. As Mr. Hagemann explains, "[a]lthough the levels set forth in the EPA Conformity Review Rule may be reasonable emission levels at which a particular project may not violate by itself ambient air quality standards, the levels do not identify and do not preclude significant air pollution impacts or possible cumulative impacts under NEPA, including for example degradation from ambient pollution levels that currently are consistent with standards." Hagemann Comment, p. 3. Nor do the numbers reflect conditions in the Project area or the Bay area and its applicable air quality standards. Mr. Hagemann notes that:

Most importantly, EPA's General Conformity rules are general rules applicable to the entire country. They were not developed for Contra Costa or Alameda County or any area associated with the Project. Hence, such general numbers cannot reasonably be linked to rational significance thresholds designed to assist FEMA

or any agency in determining whether a Project's air pollution emissions will have significant environmental impacts.

Hagemann Comment, p. 3.

Contrary to the imprecise and irrelevant numbers selected by FEMA for the DEIS, very precise significance thresholds exist for the Project area developed by the Bay Area Air Quality Management District ("BAAQMD") to determine the very question at hand – the significance of a project's air emissions. Hagemann Comment, p. 3. And, many of the air pollutants addressed by BAAQMD are part of its mandate to enforce federal standards in the Bay area approved by EPA. As BAAQMD explains:

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

BAAQMD CEQA Guidelines, June 2010 (Hagemann Comment, p. 3). In light of the San Francisco Bay Area Air Basin's status as being in non-attainment for national particulate matter ambient air quality standards, selecting generic national levels designed to protect federal agencies budgets rather than local air pollution levels is entirely arbitrary. See Hagemann Comment, p. 4; BAAQMD CEQA Guidelines, June 2010, p. 2-1. For the DEIS and FEMA to ignore BAAQMD's highly relevant thresholds designed to consider the significance of a project's air quality impacts, is unreasonable and arbitrary and capricious.

**2. The DEIS unreasonably assumes the Project that will be implemented over one to three years will nevertheless emit air pollutants for ten years.**

The DEIS provides scant information about the schedule for implementing the Projects proposed to be funded by FEMA. Review of the applicants' original grant applications indicates that the funded actions will largely occur within one-year of receipt of FEMA funding and then include two years of follow-up herbicide spraying or, in the case of some of the EPRPD areas, hand-removal of fuels and weeds. For example, EBRPD's original FEMA application states unequivocally that "[t]he project will take three years to complete" with almost all of the heavy equipment work occurring within one year. EBRPD FEMA Application, p. 20 (attached as Exhibit K). Oakland's proposal is similar. Oakland FEMA Application, p. 11 ("The total project duration is anticipated to be 36 months, with 12 to 24 months of actual vegetation removal work...") (Exhibit L). U.C. Berkeley's proposal, however, is even shorter, all the work being completed within two years, and almost all of the tree removal involving heavy equipment being completed within six months. U.C. Berkeley FEMA Application, p. 10 ("The total project duration is anticipated to be 18-24 months, with 12 to 24 weeks of actual vegetation removal

work....”) (Exhibit M). Thus, it is during the first six months to one year of FEMA funding when most of the heavy equipment needs of the proposed Project would occur by all three applicants. Hence, any air quality analysis and impacts must reflect that scheduling reality. There is no basis for the DEIS to extrapolate air emissions over a ten year period.

The few times the DEIS actually mentions the duration of activities to be funded, they are consistent with the project durations described in the applications. Thus, U.C. Berkeley’s vegetation removal within the Strawberry Canyon-PDM is expected to require 20 to 40 weeks spread over 2 to 3 years.” DEIS, p. 3-22. Vegetation removal in the Claremont-PDM “would take 24 to 36 months, with 20 to 35 weeks of actual vegetation removal work.” DEIS, p. 3-23. Similarly, “vegetation removal at Frowning Ridge-PDM is expected to require 40 to 60 weeks spread over 2 to 3 years.” DEIS, p. 3-25. No other effort to describe the duration of the proposed Project is provided in the DEIS. None of these durations come close to justifying a 10-year period for averaging out air pollution emissions. As a result, the DEIS’ air quality impact discussion is arbitrary and capricious.

By artificially treating the Project as a ten-year project, the DEIS drastically understates the resulting air pollution impacts. Mr. Hagemann compares the actual emissions of the Project based on the expected duration of vegetation removal to the relevant regional air pollution significance thresholds:

For example, the BAAQMD maximum annual emissions threshold for NO<sub>x</sub> is 10 tons per year. The total NO<sub>x</sub> project emissions is 50.54 (Table 5.5-7). If the bulk of Project activity occurred over a two-year period, the annual NO<sub>x</sub> emissions would be on the order of 25 tons per year, greatly exceeding the BAAQMD maximum annual emissions threshold for NO<sub>x</sub> of 10 tons per year. This estimate of 25 tons per year of NO<sub>x</sub> greatly exceeds the DEIR estimate of 5.05 tons per year (Table 5.5-9), inappropriately based on a ten-year average emissions rate.

Hagemann Comment, p. 5. The same is true of most of the other pollutants generated by the project, including PM<sub>2.5</sub>, PM<sub>10</sub>, and ROG<sub>s</sub>. The Project will result in significant air quality impacts that are not discussed or acknowledged in the DEIS.

### **3. The DEIS ignores necessary air pollution mitigation measures.**

Applying available and relevant significance thresholds and the actual duration of the Project, it is clear that the Project results in significant air quality impacts for which mitigation must be identified and discussed in the DEIS. NEPA’s regulations require that “[e]ach agency shall: ... (b) Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses. Environmental documents and appropriate analyses shall be circulated and reviewed at the same time as other planning documents. 40 C.F.R. § 1501.2(b). See *Sierra Club v. Babbitt*, 69 F.Supp.2d 1202, 1218 (E.D. Cal. 1999). Under NEPA, “mitigation measures must be discussed in sufficient detail to ensure that there has been a fair evaluation of environmental

consequences.” Mandelker, NEPA Law and Litigation,” §10:44. The DEIS’s discussion of possible mitigation measures must be reasonably complete. *League of Wilderness Defenders/Blue Mts. Biodiversity Project v. Forsgren*, 309 F.3d 1181, 1192 (9th Cir. 2002), citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). A mere listing of mitigation measures without supporting analytical data does not suffice. *League of Wilderness Defenders*, 309 F.3d at 1192; *Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 473 (9th Cir. 2000).

Mr. Hagemann describes the mitigation measures that must be discussed in the DEIS in order to address the Project’s emission of NOx, PM-10, and PM-2.5. Noting that “[m]itigation measures in a revised DEIS should be much more prescriptive to reduce, in particular, NOx, PM-10, and PM-2.5 emissions”, Mr. Hagemann recommends the following measures be included in the DEIS’ analysis:

- Water application rates and the timing of water is critical in ensuring the effectiveness of reducing PM-10 and PM-2.5 emissions. The DEIR should include specifications for the application of water by each grantee specific to each of the areas given awards, including requirements to apply water twice daily or apply soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;
- All trucks hauling wood chips, woody debris, and other loose materials should be tarped or be required to maintain at least two feet of freeboard;
- Sweep streets at least twice daily (with regenerative sweepers) where haul trucks travelling on unpaved roads intersect paved roads
- Implementing work stoppages if winds exceed 15 miles per hour
- Condition Project on using newer technology Tier 4 standards for off-road engines with advanced emissions control technologies. Use of Tier 4 technology can reduce NOx and PM10 emissions by 90% as compared to using Tier 3 technology.

Hagemann Comment, pp. 5-6. Mr. Hagemann suggests some additional mitigations to protect children and other sensitive receptors from the ill-effects of PM-10 and NOx in those areas of the Project that border neighborhoods and any U.C. Berkeley facilities. Mr. Hagemann recommends that “all sensitive receptors (including residences, day care facilities, schools, and museums) within 1000 feet of the Project should be identified.” Hagemann Comment, p. 6. Given the public health risks of PM-10 and NOx exposures of sensitive receptors within 1000 feet of the Project’s areas, the DEIS should discuss the following mitigation measures recommended by Mr. Hagemann:

Timing Project activities to coincide with periods when facilities are vacant (after hours, weekends, summer vacations);  
 Fenceline monitoring of PM-10 and PM-2.5 and plans for work stoppage if levels exceed triggers; and

Additional dust control measures, such as watering at least three times daily and street sweeping three times daily where trucks intersect nearby paved roadways.

Hagemann Comment, p. 6. All of these mitigation measures should be discussed in the DEIS and, to the extent FEMA approves the proposed Project or a modified version of the project, FEMA should make each of these measures conditions of the Project.

#### **4. The DEIS fails to discuss impacts of diesel particulate matter and relevant mitigation measures.**

The DEIS does not address the Project's likely impacts from diesel particulate matter ("DPM") on residents and construction workers. DPM exposure can cause cancer, especially for truck drivers and equipment operators. Hagemann Comment, p. 7. The DEIS makes no effort to quantify the health risks that will result to workers and residents from the Project's DPM emissions. *Id.* "A human health risk assessment (HRA) to determine the cancer risks to workers and nearby residents from Project construction should be prepared. HRA results should be compared to cancer risk significance thresholds set by the OEHHA and significant impacts should be disclosed and appropriately mitigated prior to DEIS certification...." *Id.* The DEIS also does not identify or discuss mitigation measures to address DPM emission impacts. These should include regular preventive engine maintenance, requiring use of low sulfur and low aromatic fuel and 2007 or later model engines, and precluding diesel equipment from standing idle for more than five minutes with the exception of the rotating drum concrete trucks. *Id.*

##### **I. The DEIS's Discussion Of The Project's Global Warming and Greenhouse Gas Emission Impacts Is Arbitrary For Numerous Reasons.**

The DEIS's analysis of GHG emissions from the Project is rife with errors, watering down the CO<sub>2</sub>e emissions from decomposing chips by exaggerating their decomposition rate, applying a so-called threshold that CEQ says is not a significance threshold for GHG emissions, ignoring the Project's elimination of significant yearly carbon sequestration that would occur if trees were left standing, and making unsupportable assumptions in its discussion. Contrary to the DEIS' assertion that the Project's GHG emission will not be significant, an accurate analysis of this Project impact demonstrates that the Project's GHG emissions and sequestration removal will have a significant environmental impact. That impact necessitates further the need for FEMA to analyze in detail the Selective Thinning Alternative and to describe other mitigation measures that could reduce the Project's cumulative global warming impact.

##### **1. The DEIS Arbitrarily assumes the project's GHG emissions will be spread out over ten years.**

As discussed above in the comments on the DEIS' air quality impacts discussion, the DEIS once again arbitrarily attempts to extend the duration of the proposed Project



from a few years to ten years. DEIS, p. 5.6-1 (“it was assumed that the implementation of the proposed and connected actions would occur over a 10-year period”). This mischaracterization of the Project infects the estimated yearly emission of CO<sub>2</sub>e from heavy equipment, vehicles, and broadcast burning within the Project area. It also understates the emission rate of CO<sub>2</sub>e from decomposing chips throughout the project area.

According to the DEIS, direct emissions of CO<sub>2</sub>e from Project activities which include burning and equipment use equal 5,562 metric tons of CO<sub>2</sub>e. DEIS, p. 5.6-6. The DEIS assumes all of the initial heavy equipment work and burning will occur evenly over ten years. Hagemann Comment, p. 7; DEIS, p. 5.6-7. However, as EBRPD’s application makes clear, heavy equipment for removing trees and vegetation, broadcast burning, and most of the GHG emitting activities from the Project will occur during the first year of the Project. EBRPD FEMA Application, p. 11. None of the GHG emissions associated with these activities will occur over a ten-year period. The DEIS must assume all of those GHG emissions will occur in one-year in order to provide a reasonable scenario consistent with the funding applications. Even assuming a two-year period for the initial tree removal and broadcast burning, the number applied in the DEIS to GHG emissions from vehicles and burning would be dramatically increased. Hagemann Comment, p. 8 (“if instead a two year Project duration is used, 2781 metric tons of CO<sub>2</sub>e per year will be emitted”).

The ten-year averaging also unreasonably attenuates carbon emissions from the decomposition of wood chips generated by the project. According to the DEIS, wood chips decay over 5 years. Assuming the resulting GHG emissions would extend for ten years also is arbitrary. As the DEIS states “UCB expects the chips to decompose in approximately 5 years, restoring the original contours of the portion of the site in which they would be spread and reducing the evidence of skid road creation.” DEIS, p. 3-22. Likewise, the DEIS refers to several studies, interpreting them to conclude that, for a New Zealand study, “[a]t the rate of loss in the second year (16% of the original volume), the wood chips would be substantially decomposed in a total of between 5 and 6 years.” DEIS, p. 5.3-6. Another Rhode Island study “suggests that decomposition might be substantially complete after 5 years.” *Id.*

The one study that the DEIS claims supports a 10-year decomposition rate is the Duryea study conducted in Florida which assessed decomposition of garden mulches, including a eucalyptus mulch. Duryea actually observed that 21% of a eucalyptus mulch decomposed in a single year. This rate of decomposition appears to be consistent with other studies which conclude that eucalyptus will decompose completely in about 5 years. The DEIS, however, attempts to formulate a rationale for reducing Duryea’s result to only 10 percent:

Respiration was measured at different temperatures. The respiration rate was significantly lower at temperatures typical of the East Bay Hills than at temperatures representative of the warm months in Gainesville. This indicates that the rate of decomposition would be lower in the East Bay Hills.

DEIS, p. 5.3-6. Based on that assumption, the DEIS predicts a decomposition rate of about 10% per year, *i.e.* about 10 years to decompose entirely, rather than the 21% rate actually measured in the study. DEIS, p. 5.3-6. The DEIS's selection of an 11 percent reduction in the study results in order to extrapolate the result to Oakland is arbitrary. It fails to address the various other factors discussed in the study. In particular, it fails to heed the study's warning that "[i]n our study, the mulches were exposed to full sunlight, in contrast to the moist forest floor, possibly resulting in a lower moisture content throughout the year. This would result in lower decomposition rates compared to usual forest litter rates." *Journal of Arboriculture* 25(2): March 1999, p. 93. *See also id.* ("Eucalyptus and GRU mulches had the highest respiration rates in November and January, showing active year-round decomposition"). In short, all of the studies referenced in the DEIS indicate that eucalyptus likely will completely decay.

Inconsistently, the greenhouse gas emission discussion states that eucalyptus decomposition has a half-life of approximately five years. DEIS, p. 5.6-7. Reviewing the studies referenced for this proposition, Duryea does not provide that figure, instead in that study of eucalyptus mulch, about 21% of the mulch decomposed in one year. That figure would be more consistent with eucalyptus chips decomposing in five years rather than a half life of five years. The Hernandez study referenced by the DEIS also suggests a much lower half-life for eucalyptus. Only the bark component of eucalyptus trees had a half-life of about 5 years. All other parts of the tree – leaves, branches, non-commercial logs, litter – had much lower half-lives ranging from 0.86 years (leaves) to 3.87 years (logs). Chipped eucalyptus trees would be considerably smaller than branches and would include leaves and litter. Hence, their decomposition half-life likely would be considerably less than 3.87.

Thus, the GHG emissions associated with eucalyptus chips laid out in the first year of the Project would only extend five years, not ten years as assumed by the DEIS' GHG analysis.

In addition, the DEIS' estimate of GHG emissions from chip decomposition also underestimates the percentage of eucalyptus trees that will end up as wood chips at the project site, leaves Monterey pine chips out of its calculation, and fails to provide an emission figure for decomposition from the connected actions. The DEIS estimates that 62,997 tonnes of CO<sub>2</sub>e is sequestered in eucalyptus trees within the Project area. DEIS, Table 4.7-5. To estimate chip decomposition GHG emissions, the DEIS assumes only 25 percent of the eucalyptus within the project area will be chipped. DEIS, p. 5.6-7. Hence, the EIS divides 62,997 CO<sub>2</sub>e by four, resulting in 15,749.25 tonnes of CO<sub>2</sub>e in the decomposing wood chips. The DEIS then assumes those chips will decay evenly over a 10 year period, arriving at an estimate of 1,500 metric tons of CO<sub>2</sub>e per year from decomposing wood chips. *Id.*

The CO<sub>2</sub>e calculation omits any emissions from decomposing chips of pine trees. According to the DEIS, 6,807 tons of CO<sub>2</sub>e are sequestered in exotic pine trees in the

Project areas. DEIS, Table 4.7-5. Hence, the initial sequestration for pine and eucalyptics to be removed by the Project should be at least 69,804 tons of CO<sub>2</sub>e. *See id.*

The CO<sub>2</sub>e calculation also does not include the decomposition of chips associated with the connected actions. This figure must be provided in order to identify the complete GHG emissions from the entire Project, including the connected actions.

The DEIS's CO<sub>2</sub>e calculation does not provide a rationale for assuming that only a quarter of the eucalyptic trees will end up as wood chips. The U.C. Berkeley and Oakland areas indeed intend to completely eradicate all of the eucalyptic and Monterey pine trees in their Project areas. And neither U.C. Berkeley nor Oakland are proposing to do any broadcast burning. Thus, one hundred percent of those trees will end up as decomposing wood chips, not 25 percent. Although EBRPD does not intend to eradicate every eucalyptus and Monterey pine tree in their Project areas, there is nothing in the DEIS, including Appendix D, that suggests only 25 percent of those trees will be chipped. Indeed, for those trees that are removed, Appendix D and its site specific summaries suggests that, in almost every instance, 50 percent of the eucalyptus and Monterey pine trees removed by the Project will be chipped. Based on what little information the DEIS elucidates on this point, rather than a quarter ending up as chips, Appendix D appears to support an estimate of no less than 50% ending up as chips. Applying that figure, rather than 25 percent, to the 69,804 tons of CO<sub>2</sub>e in eucalyptus and Monterey pine results in a total emission of CO<sub>2</sub>e from chip decomposition of 34,902 tons. And because those chips will completely decompose in five years (DEIS, p. 3-22), averaging that emission over five years results in an annual emission of 6,980 tons per year. *See Hagemann Comment, p. 8.*

As a result, the annual GHG emission predicted by the DEIS of 2,050 metric tons is entirely inaccurate. During the first two years, the GHG emissions from vehicles, equipment, burning, and decomposing chips is likely to exceed from 9,761 tons up to 12,542 tons per year for the first year or two of the Project, depending on how quickly trees are removed and broadcast burns completed. *See Hagemann Comment, p. 8.* Because that range omits GHG emissions from chip decomposition in connected projects, those estimates are surely underestimates of the actual GHG emissions that might occur from these activities. Likewise, as is discussed below, this estimate range also does not factor in the annual sequestration by the approximately 100,000 trees that the project will eliminate by those trees' removal.

## **2. The DEIS's GHG Analysis Fails To Account For The Project's Elimination of Carbon Sequestration Per Year That Will Result From Cutting Down Upwards Of 100,000 Trees.**

As the DEIS notes, "[g]iven the relatively high biomass of blue gum eucalyptus combined with the relatively high acreage of proposed cutting of the eucalyptus vegetation type, this vegetation type constitutes approximately 80% of the carbon currently stored by vegetation in the project area. DEIS, p. 4.7-6. As mentioned above,

the DEIS estimates that carbon sequestered in eucalyptus and pine trees just within the proposed Project area totals 69,804 tons of CO<sub>2</sub>e. DEIS, p. 4.7-5. However, this is an ongoing process. As those trees grow, they sequester a large amount of carbon every year. In 2008, EBRPD prepared a report estimating that the 98,600 acre East Bay park District sequestered on an annual basis 91,157 metric tons of carbon. East Bay Regional Park District Carbon Sequestration Evaluation, p. 1 (Dec. 2008) (attached as Exhibit N).

The DEIS fails to account for the amount of carbon sequestration that will be lost by removal of trees by the Project. Hagemann Comment, p. 9. “The eucalyptus and the Monterey pines trees felled by the project represent the loss of a carbon sink that is not factored into the GHG emissions estimates.” *Id.* In assessing the Project’s cumulative global warming impacting, the DEIS only looks at GHG emissions but ignores the loss of many tons per year of carbon sequestration that would result from the retention of the eucalyptus trees and Monterey pines proposed to be cut down. In its 2008 report, EBRPD provides an estimate of annual carbon sequestration by various vegetation types within the District. For eucalyptus trees, EBRPD estimates that the District’s 1,633 acres of eucalyptus have a “current mean flux density, *i.e.*, “the per-acre quantity of carbon sequestered per year,” of 2,304 metric tons of carbon dioxide (“Mt CO<sub>2</sub>”). EBRPD Carbon Sequestration Evaluation. That breaks out to 1.41 metric tons per acre. According to the DEIS, the Project includes 824.3 acres of eucalyptus. The DEIS does not provide a refined enough description to know how many of those acres will be cut down but, for the purpose of illustration and the importance of including a sequestration component in the DEIS’s greenhouse gas analysis, assuming all of the eucalyptus are cut, the Project would eliminate the sequestration of about 1,162 MT CO<sub>2</sub> every year from the project area. If half of those trees are cut down, a sequestration of 581 metric tons per year of CO<sub>2</sub>e will be lost. Hagemann Comment, p. 9. An accurate estimate of that foregone sequestration must be included in the total net GHG emissions associated with the Project in order to reasonably assess the Project GHG impacts.

### **3. The DEIS Arbitrarily Applies An Emission Rate That CEQ States Is Not A Significance Threshold.**

FEMA avoids taking the requisite hard look at the Project’s GHG emissions by inflating and mischaracterizing the scope and content of a draft guidance document released by the Council on Environmental Quality (“CEQ”) in 2010. The DEIS applies a “threshold of quantification” of 25,000 metric tons per year which appears in CEQ’s “Draft NEPA Guidance On Consideration Of The Effects Of Climate Change And Greenhouse Gas Emissions.” DEIS, pp. 5.6-4, 5.6-7. Contrary to the DEIS’ suggestion, CEQ’s draft guidance does not establish any “threshold” nor does it suggest that agencies should not address indirect emissions or state-enacted thresholds.

The draft guidance expressly states that it is not establishing any thresholds of significance and leaving that duty to the respective agencies:

CEQ does not propose this reference point as an indicator of a level of GHG emissions that may significantly affect the quality of the human

environment, as that term is used by NEPA, but notes that it serves as a minimum standard for reporting emissions under the Clean Air Act. Evaluation of significance under NEPA is done by the action agency based on the categorization of actions in agency NEPA procedures and action-specific analysis of the context and intensity of the environmental impacts.

CEQ Draft Guidance (citing 40 C.F.R. §§ 1501.4, 1508.27) (emphasis added). An agency's environmental analysis is arbitrary where it attempts to fashion a significance threshold from a guidance or regulations that disavow such an intent. *Sierra Club v. United States DOT*, 1990 U.S. Dist. LEXIS 7811, 13-14 (N.D. Cal. Apr. 2, 1990) (misrepresentation of a federal "design noise level" as a "Federal standard" where noise level disavowed any such intention rendered EIS meaningless and misleading). The DEIS is similarly misleading and arbitrary.

Rather than an arbitrary number which CEQ disavows is a threshold, FEMA should apply an actual significance threshold derived by an expert air quality agency or organization. BAAQMD has published a threshold of significance for greenhouse gas emissions of 10,000 metric tons per year. The threshold is a technically sound value designed specifically to avoid significant cumulative impacts on global warming by individual projects. Unlike CEQ's threshold of quantification, the BAAQMD threshold is specifically designed to apply to reviewing the significance of a project's GHG emissions. See also South Coast Air Quality Management District, Draft GHG Significance Threshold (3,000 MT/year CO<sub>2</sub>e for commercial/residential projects) (attached as Exhibit O). Another relevant threshold designed specifically to evaluate GHG emission cumulative impacts associated with an individual project is that published by the California Air Pollution Control Officers ("CAPCOA"). Hagemann Comment, p. 9. Those agency officials established a GHG significance threshold of 900 metric tons of CO<sub>2</sub>e per year. *Id.* Applying either of those relevant thresholds, it is clear that the Project's total GHG emissions, correcting the GHG calculation errors and including the termination of annual sequestering currently occurring within the Proposed and Connected Project's eucalyptus and Monterey pine forests, easily exceed these thresholds. Accordingly, the DEIS must reasonably consider this a significant impact of the Project.

#### **4. The DEIS Fails to Describe Feasible Mitigation Measures To Address The Project's GHG Emissions and Elimination of Current Annual Carbon Sequestration.**

Because of the DEIS' failure to properly assess the Project's cumulative global warming impacts, it also fails to reasonably describe feasible mitigation measures. As Mr. Hagemann explains, one obvious way to mitigate the Project's GHG emissions is to evaluate and ultimately adopt the Selective Thinning Alternative discussed above:

[A]n alternative that applies selective thinning to the entire project area would substantially reduce GHG emissions by reducing decomposition of chips, maintaining a significant amount of the currently sequestered carbon, and reducing the GHG emissions from equipment. The reduced levels from

this alternative likely would be sufficient to achieve the BAAQMD's or CAPCOA's recommended threshold level, or any reasonable threshold selected by FEMA.

Hagemann Comment, p. 9.

In addition, Mr. Hagemann identifies other feasible measures to control emissions from construction and off-road equipment, including using alternative fuels for construction equipment, using electric and hybrid construction equipment, limiting construction equipment idling, instituting a heavy-duty off-road vehicle plan, implementing a vehicle inventory tracking system, and only using the latest diesel technology as discussed above. *Id.* Any remaining impacts should be addressed by purchasing carbon offsets. *Id.*

#### **J. By Eliminating Summer Fog Drip In Fire Prone Areas, The Project Will Increase Fire Risk.**

Chief Close points out the DEIS' omission of any discussion of the increase in fire risk that will result from loss of summertime fog drip in Project areas slated for complete eradication of eucalyptus and Monterey pines. Close Comment, p. 10. Fog drip in the East Bay Hills can produce up to 10 inches of precipitation per year. *Id.* The combination of lost fog drip with increased temperatures in clear cut areas increases fire risk:

The EIS fails to mention that the combination of reduced precipitation and increased temperatures in the summer months will increase fire danger on treated areas. Thus, the fire danger will actually increase after the proposed actions are implemented. This is a serious and critical omission from the EIS.

Close Comment, p. 10. This is one of the many reasons, discussed by Chief Close and in the above comments, that the Project fails to provide the public with an accurate assessment of the Project's environmental impacts and fails to meet FEMA's funding criteria.

### **III. CONCLUSION.**

As set forth in the DEIS, the proposed Project will not meet many of the criteria set forth by FEMA to guide its grant funding decisions. HCN believes the DEIS is wholly inadequate and requires significant revision, recirculation and review. Moreover, HCN believes that the Project as proposed would result in too many unmitigated adverse impacts on the environment to be justified. HCN agrees with FEMA and the applicants that fire management is critically important in the East Bay Hills to protect both our homes and the environment. However, the necessary fire management cannot be obtained at the expense of other important resources or by turning a blind eye to a Selective Thinning Alternative – an equally effective and more cost effective fire management option. All of these considerations weigh against approval of the Project as proposed, and necessitate

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revision to the DEIS to consider the Selective Thinning Alternative and to properly analyze all impacts of the Project.

Thank you for your attention to these comments. Please include this letter and all attachments and accompanying exhibits hereto in the record of proceedings for this project. We look forward to FEMA curing the above flaws in the DEIS and an opportunity to review a revised DEIS for the Project.

Sincerely,



Michael R. Lozeau  
Lozeau Drury LLP

cc: Dan Grasseti, Hills Conservation Network

# EXHIBIT A



27 May 2009

Mr. Alessandro Amaglio  
Environmental Officer  
FEMA Region IX  
1111 Broadway Street, Suite 1200  
Oakland, California 94607

**Re: Strawberry Canyon Vegetation Mitigation, Regents of the University of California, PDMC-PJ-09-CA-2005-011, Task Order HSFEHQ-06-J-0048, Contract HSFEHQ-06-D-0162**

Dear Mr. Amaglio:

At your request, we have reviewed the responses provided by the University of California at Berkeley (UC) in a letter from Mr. Stephen Stoll and [REDACTED] dated 25 March 2009 and addressed to Mr. Ken Worman of the California Emergency Management Agency (CalEMA). The UC provided these responses to a request from Ms. Sally Ziolkowski of the Federal Emergency Management Agency (FEMA) to CalEMA dated 17 February 2009. This letter contains our comments regarding the sufficiency and accuracy of the UC's responses to assist FEMA determine appropriate steps in the Environmental and Historic Preservation review process. Issue numbers correspond to the numbers used in the FEMA and UC letters referenced above.

**Issue 1. Evidence that the supposed habitat restoration benefit will occur, since no plan for revegetation is included in the grant.**

The UC responds accurately that, post-treatment, the project area will provide better growing conditions for plants in the understory because the plants will have increased access to resources (e.g., sunlight and soil nutrients) that will allow them to grow faster. In the absence of eucalyptus trees, which drop large quantities of leaf and branch litter containing toxic oils, it is likely that a new community of plants would rapidly colonize the site. However, we question the assumption that the types of vegetation recolonizing the area would be native. Based on conditions observed during site visits in April 2009, current understory species such as English ivy, acacia, *vinca* sp., French broom, and Himalayan blackberry would likely be the first to recover and recolonize newly disturbed areas once the eucalyptus removal is complete. These understory species are aggressive exotics, and in the absence of proactive removal there is no evidence to suggest that they would cease to thrive in the area, especially the French broom which would be the only understory plant capable of surviving inundation by a 2-foot-deep layer of eucalyptus chips.

In its letter, the UC provides photographs of pre- and post-treatment conditions from similar fuel removal projects in the East Bay Hills to document its assertion that native vegetation would naturally re-establish in treated areas. However, the photographs do not show young

native vegetation in the treated areas; instead they document (1) areas on the edge of treatment sites that are vegetated in native coyote brush both before and after treatment, (2) areas where mature coyote brush have survived a treatment, and (3) pre- and post-treatment conditions of a project that appears to be successful but lack dates or a description of how much time elapsed between the photographs. The photographs do provide evidence to support coyote brush survival at the edges of treatment sites. Coyote brush would be expected to survive treatment and inundation in chipped eucalyptus due to its shrubby, robust, woody form. However, the proposed treatment area does not contain an understory of coyote brush, nor would it be expected to as the species thrives on open dry sites, not under a closed eucalyptus canopy. The species is found in small openings of eucalyptus canopy within the proposed treatment area but these openings represent a small proportion of the entire treatment area.

As written, the current plan assumes native vegetation will reclaim the treatment areas but does not include any plans for native revegetation. Instead, in order to “reduce undesirable weed invasions” and thus encourage the development of native grasslands, chaparral, and bay/redwood communities, UC plans to apply chip mulch to the ground. This mulch would be derived from the cut, non-native eucalyptus trees. It is not clear how the mulch would prevent the proliferation of invasive species while simultaneously encouraging the growth of existing native species. Despite thorough research, we were unable to find documentation of the ability of exotic chip mulch to suppress undesirable species while encouraging favorable species. Chip mulch can be a successful deterrent to invasive plants, but would have to be coupled with selective native plantings if the intended long-term outcome was revegetation in native cover. In the absence of native plantings/seeding, it is likely that as the chips decompose (refer to Issue 6, below, for a discussion of decomposition rates) dormant seeds in the seed bed from the exotics that dominated the site pre-treatment will germinate and regain dominance. As written, the proposed project would likely delay but not prevent the re-establishment of non-native vegetation communities. Native cover could develop in small areas around existing, patchy, coyote bushes, but it is highly unlikely that the site would naturally restore itself to native conditions given the aggressive nature of the weedy exotic species that are already established in the treatment areas and dominate the seed bed. Additionally, in the 3 to 5 years that the UC claims the chips will decompose, it is anticipated that the proportion of aggressive non-native vegetation surrounding the treatment areas will have increased compared to native vegetation, unless a proactive eradication effort is implemented. Thus, the likelihood that seeding from surrounding vegetation will be aggressive exotic species will also have increased, thereby decreasing the likelihood of native species colonizing the treatment area. In the absence of a revegetation plan in the treatment area targeting native species plantings during the chip decomposition period, the risk of non-natives colonizing the site once the chips have decomposed would have increased. Although in its letter the UC claims that it is “a regional standard to not re-vegetate as part of fuel management projects” because native species in the understory are responsive to improved growing conditions, it is also not a regional standard to recover the treated area in 2 feet of chips derived from an exotic fuel source.

**Issue 2. Relative fire risk of current vegetation versus chip dominated landscape: there is no scientific evidence to support the project as proposed.**

The UC accurately claims that standing eucalyptus is a greater fire hazard, all things considered, than chipped eucalyptus. We concur that eucalyptus forests pose a high fire risk to surrounding communities due to high fuel loads in the canopy and on the ground. It is well documented that the unique arrangement of fuels, content of oils and other volatile chemicals in the foliage, size and shape of the fuels, location of fuels, and height of ember production all contribute to this risk and can be mitigated through removal and of eucalyptus trees.

However, the comparative risk between eucalyptus in the form of a dense standing forest versus the form of a 2-foot-deep mulch layer on the ground is not well documented. Studies have shown that mulch layers actually can pose a fire risk depending upon the type of material, the depth of the mulch, and the climate at the mulch site. Studies at the Ohio State University Agricultural Technical Institute demonstrated that sparks from cigarettes or matches can lead to a subsurface smoldering fire in a variety of mulch materials 4 inches deep (Steward 2002). The recommended depth for landscape mulch is less than 4 inches (Appleton and French 1995) to avoid stifling growth of remaining trees and to avoid spontaneous combustion that can occur when decomposition of organic materials creates enough energy in a pile to ignite a fire. Fire Engineering Magazine (2008) reported that spontaneous combustion resulting in a catastrophic fire occurred in 10- to 20-foot piles. Although eucalyptus chips were not tested in these studies, Fire Engineering Magazine recommends that, to reduce the potential for fire in mulch, one should recognize that mulches high in oils ignite more easily and that mulch fires start more readily in hot climates where rain is scarce (and fuel moisture is low). Eucalyptus material is high in oils, and the East Bay Hills are subject to long annual periods that are hot and dry. The UC cites a study by Duryea et al. (1999) where a high moisture level in mulch is assumed to assist the observed rapid decomposition rate in mulches; however, this study occurred in inland Florida where the climate is hot and humid and the study looked at a mulch layer that was less than 4 inches deep. It is likely that moisture retention would be significantly less in a thicker layer of mulch within a more moderate and arid climate such as the East Bay Hills.

In its letter, the UC proposes leaving up to 2 feet of chipped eucalyptus spread across treatment areas as both a weed barrier and as a fire prevention measure. However, the UC's claim that "since a canopy is absent during the time when the landscape is covered in chips, the concern over embers being generated from this location is almost eliminated" is contradicted by the proposed treatment plan, which explicitly leaves native canopy cover in treatment areas (i.e., California bay and coast live oak trees). Although the fire risk of bay and coast live oak is lower than eucalyptus, the misleading statement about an absent canopy undermines the argument that the risk of embers is eliminated.

**Issue 3. Potential for introduction of chaparral-dominated landscape and issues associated with fuel-driven fires versus climate-driven fires.**

As claimed by the UC, the removal of eucalyptus trees in the treatment area would reduce the risk of catastrophic fires driven (but not necessarily initiated) by climate conditions, such as

during periods with Diablo winds. One relevant metric for determining the level of risk a particular vegetation type poses as a wildland fuel in a wind-driven fire event is “spotting distance” (the distance an ember will carry beyond its source). As stated by the UC, eucalyptus can spot up to 9 miles, which far exceeds the cited distances for other vegetation communities with potential to occupy the project area. Although chaparral is a high-risk vegetation type in fire-prone landscapes, its spotting distance is only 100 to 200 feet, and fires in this vegetation type are assumed to be driven by fuels.

The behavior of fuel-driven fires, understood as fires whose behavior is determined primarily by the type of fuels found on the landscape, could vary greatly on the post-treatment landscape depending upon the vegetation communities that develop. In the absence of a revegetation plan for the site, all possible future vegetation types in the treatment area must be analyzed; these vegetation types include native and non-native grasslands, chaparral, non-native shrub/scrub communities, and oak-bay forests. Fire conditions in each of these landscapes are unique, for instance grasslands fuels burn cooler and faster than eucalyptus material, yet they are easier to ignite and carry fire quickly across a landscape. Chaparral is one of the most hazardous wildland fuel types in California due to the woody, persistent nature of the plants. A chaparral-dominated landscape in the post-treatment project area would create a fire hazard profile with its own suite of risks and concerns for fire protection, including flame lengths that far exceed those of the other possible vegetation types (Carle 2008). Although spotting distance is not as great for the fuels that make up chaparral communities when compared to a eucalyptus forest, chaparral fires burn with great intensity and are difficult to fight based upon the spatial arrangement of fuels on the landscape. Coast live oak forests are one of the most fire-resistant, tree-dominated fuel types due to characteristic thick bark and small persistent leaves (Sugihara et al. eds. 2006). To address the relative risk of fuel-driven fires in the various landscapes that could develop post-treatment, UC provides an incomplete list of different vegetation-based “fuel model” scenarios in Appendix A, which was attached to the UC’s letter.

The proposed project assumes that regardless of the type and kind of vegetation community that forms in the newly cleared areas, the eucalyptus chip layer will retain adequate moisture to remove it as a concern in the fuel profile. As explained in the response to Issue 2, it may be inaccurate to assume that the chip layer, given its depth, can be ignored as a potential fuel source. However, such a deep chip layer may have the potential to not only sustain a localized burn but to connect fuels in vegetation types located adjacent to the treatment areas.

**Issue 4. Justification of two species (Monterey pine and acacia) targeted for removal are a risk.**

The UC accurately asserts that Monterey pine and acacia are regionally exotic species and, due to their success in the East Bay Hills, could undermine the establishment of native vegetation types in the post-treatment landscape by competing with oak and bay for dominance in the forest canopy. The UC inaccurately characterizes the fire hazard risk posed by the two species however. Monterey pine and acacia trees in the treatment areas occupy primarily the middle layers of the forest canopy. In limited areas individual Monterey pine

trees approach the eucalyptus canopy in height but this is not the case throughout the project area. Both the Monterey pine and acacia trees more likely serve as ladder fuels: during a forest fire they provide fuel continuity between flammable material on the ground and the lower branches of the dominant tree canopy in the overstory. However, they only serve this function in the presence of a taller overstory species such as blue gum eucalyptus. When found in forests in the absence of eucalyptus, Monterey pine trees are considered to be a fire hazard due to the accumulation of needles and branches below individual trees, but this would not pose a threat if the accumulated material was covered by 2 feet of eucalyptus chips. In the treatment area Monterey pine is found primarily in small patches of fewer than 5 trees, a spatial distribution that constitutes a low fire risk on the landscape. Acacia in the treatment area is concentrated around structures. These trees tend to accumulate quantities of seed pods and branches, but they would only be considered a risk based on their proximity to existing structures, not because of their vegetative contribution (i.e., fuel load) alone. Monterey pine and acacia trees in the treatment area only pose a substantial fire danger when growing within an eucalyptus forest. In the absence of the eucalyptus overstory, they do not pose a substantial fire hazard.

**Issue 5. Complete analysis of other practical alternatives—(a) regularly clearing ground litter, (b) thinning targeted species rather than removing all and regularly clearing the understory, and (c) creating strategic fuelbreaks.**

The UC states that alternatives to the proposed project should be analyzed for feasibility, effectiveness, and compliance with the Endangered Species Act. Feasibility is then described by the UC to include erosion, worker safety, costs, and endangered species. According to NEPA's implementing regulations, FEMA must "rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR Parts 1500 et seq.). FEMA would not, however, be required to evaluate alternatives that would not satisfy the goals of the proposed project or alternatives that are "infeasible, ineffective, or inconsistent" with basic policy objective (Headwaters, Inc. v. Bureau of Land Management, 914 F.2d 1174, 20 Env'tl. L. Rep. 21,378). Thus, feasibility (including cost) and effectiveness to meet the purpose and need can be valid reasons to screen alternatives from further consideration. However, potential environmental impacts such as increased erosion and take of endangered species should not be used to omit alternatives from further analysis. Therefore, the UC's justifications for eliminating alternatives because they are environmentally more harmful than the proposed project are not discussed in further detail. Following is an analysis of UC's claims that the alternatives suggested would be infeasible or would not meet the purpose and need of the project.

*(a) Regularly clearing ground litter.* The UC makes a valid argument that this alternative would not meet the purpose and need. Removing ground litter would not address eucalyptus' primary fire-hazard characteristics (e.g., fuel density in canopies, spotting distance, aerial fuel loads) and the presence of shrubby surface fuels that could carry fires independent of cleared ground litter. Thus, the fire risk would essentially be the same pre- and post-treatment. Cost associated with annual work crews and disposal of material could also be prohibitive compared to the proposed project. Elimination of this alternative from further consideration is acceptable.

*(b) Thinning targeted species rather than removing all and regularly clearing the understory.* The UC accurately cites increased costs and a longer time period to implement as reasons that this alternative is not preferred, but the UC does not provide information that demonstrates that the increased costs or longer implementation period make this alternative infeasible. This alternative would not be as effective as the proposed project at reducing the fire hazard. However, this alternative would reduce the fire hazard and would thus meet the purpose and need. This alternative should be evaluated in future NEPA documents.

*(c) Creating strategic fuelbreaks.* The UC makes a valid argument that this alternative would not meet the purpose and need as the fire risk would essentially be the same pre- and post-treatment. Because of the height of the eucalyptus trees, the distance and topography between the project site and the ridgetop, and the fuel behavior in eucalyptus stands, a linear fuelbreak would not provide fire containment or fire control. Thus, the fire risk would essentially be the same pre- and post-treatment. Elimination of this alternative from further consideration is acceptable.

#### **Issue 6. Document chips will decompose in 3 to 5 years.**

The UC cites two published studies on eucalyptus chip decomposition to support its claim that the anticipated 2 feet of eucalyptus chips from the proposed project will decompose in 3 to 5 years. Many factors (e.g., soil type, climate, chip size, chip depth, species of eucalyptus) likely contribute to decomposition rates of eucalyptus chips. A study by Grove et al. (2008) confirms a strong correlation between eucalyptus mass and decomposition rates. The highest decomposition rate of eucalyptus was shown, in a controlled experiment, to be 78 percent in the first year and 68 percent in the second year (Faber and Spiers 2004). Chip size was not provided in this study, though the eucalyptus mulch was referred to being “shredded/chipped” with a significant portion of the mulch consisting of leaf matter. Further, the starting depth of the shredded/chipped eucalyptus in this experiment was just under 4 inches (i.e., 100 millimeters, not 100 centimeters as claimed in the UC summary of this study). Another study, based upon experimental conditions, demonstrated a 21-percent decomposition rate of eucalyptus mulch over 1 year (Duryea et al. 1999). Similar to the Faber and Spiers (2004) study, the starting depth of the chip mulch in the Duryea et al. (1999) study was 3.5 inches. A thorough literature search did not identify any studies documenting decomposition rates in eucalyptus mulch deeper than 4 inches, which notably is the maximum recommended depth for landscaping (Steward 2002).

In lieu of more relevant data, we generated a simple model using an average of the decomposition rates of the two studies, modified for negative exponential decay, as shown by Faber and Spiers (2004), Goya et al. (2008), and Grove et al. (2008). This model predicts that 24 inches of eucalyptus mulch would take 10 years to decompose to a depth of less than 1 inch. For reasons described above, the model is rough and should only be used in comparison with the time for eucalyptus mulch to decompose to depths of less than 1 inch calculated by extrapolating the decomposition rates provided by the two eucalyptus mulch studies from starting depths of less than 4 inches to the proposed 24 inches: 3 years (per Faber and Spiers

2004 data) and 14 years (per Duryea et al. 1999 data). Best scientific judgment suggests that a deeper chip layer would decompose more slowly than a shallow chip layer because it would be more insulated from moisture and less of its surface area would be in contact with decomposing bacteria and fungi found in the soil. Finally, the photographic documentation from similar treatment areas in the East Bay Hills, provided by UC to support its decomposition rate claim, does not appear to document a consistent viewpoint. In summary, the UC does not provide convincing evidence that the mulch at the depth proposed would decompose in 3 to 5 years.


The issue of chip decomposition also affects the evaluation of the UC's response to Issue 1 because the UC's argument for native revegetation is based upon its assumptions of the decay rate and behavior of the eucalyptus chips. By the time the chips fully decompose, the treatment area will likely be vegetated only sparsely with the shrubs and trees that remained post-treatment. After full decomposition, the exposed soil layer would be an ideal germination site for (1) seeds that have remained dormant in the seed bed and (2) seeds from plants in adjacent areas. Alexander and D'Antonio (2003) report that exotic invasive leguminous shrubs like French broom (which is present in and adjacent to the proposed treatment area) build up a larger seed bank in their introduced ranges compared with their native ones and in grassland systems they build a larger seed bed than native grasses. Seeds of successful, exotic species are opportunistic; given the abundance of established non-native species in the proposed treatment areas as well as adjacent to them, the post-decomposition exposed understory in the treatment areas could be quickly colonized by a non-native mix of Mediterranean grasses, Italian thistle, English ivy, various broom species, and *vinca* sp.

If you have any questions about these comments or this assignment, please contact either of us at 510.893.3600. URS appreciates the opportunity to support you on this task order.

Sincerely,

**URS Corporation**

  
Forest Ecologist

  
Senior Project Manager

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**Issue 1. Evidence that the supposed habitat restoration benefit will occur, since no plan for revegetation is included in the grant.**

- The UC responds accurately that, post-treatment, the project area will provide better growing conditions for plants in the understory because the plants will have increased access to resources (e.g., sunlight and soil nutrients) that will allow them to grow faster.
- However, we question the assumption that the types of vegetation recolonizing the area would be native. Based on conditions observed during site visits in April 2009, current understory species such as English ivy, acacia, *vinca* sp., French broom, and Himalayan blackberry would likely be the first to recover and recolonize newly disturbed areas once the eucalyptus removal is complete. These understory species are aggressive exotics, and in the absence of proactive removal there is no evidence to suggest that they would cease to thrive in the area, especially the French broom which would be the only understory plant capable of surviving inundation by a 2-foot-deep layer of eucalyptus chips.
- It is not clear how the mulch would prevent the proliferation of invasive species while simultaneously encouraging the growth of existing native species. Despite thorough research, we were unable to find documentation of the ability of exotic chip mulch to suppress undesirable species while encouraging favorable species.

**Issue 2. Relative fire risk of current vegetation versus chip dominated landscape: there is no scientific evidence to support the project as proposed.**

- The comparative risk between eucalyptus in the form of a dense standing forest versus the form of a 2-foot-deep mulch layer on the ground is not well documented.
- Fire Engineering Magazine recommends that, to reduce the potential for fire in mulch, one should recognize that mulches high in oils ignite more easily and that mulch fires start more readily in hot climates where rain is scarce (and fuel moisture is low). Eucalyptus material is high in oils, and the East Bay Hills are subject to long annual periods that are hot and dry.
- UC proposes leaving up to 2 feet of chipped eucalyptus spread across treatment areas as both a weed barrier and as a fire prevention measure. Although the fire risk of bay and coast live oak is lower than eucalyptus, the misleading statement about an absent canopy undermines the argument that the risk of embers is eliminated.

**Issue 3. Potential for introduction of chaparral-dominated landscape and issues associated with fuel-driven fires versus climate-driven fires.**

- As explained in the response to Issue 2, it may be inaccurate to assume that the chip layer, given its depth, can be ignored as a potential fuel source. Also, such a deep chip layer may have the potential to not only sustain a localized burn but to connect fuels in vegetation types located adjacent to the treatment areas.

**Issue 4. Justification of two species (Monterey pine and acacia) targeted for removal are a risk.**

- UC inaccurately characterizes the fire hazard risk posed by the two species however. Monterey pine and acacia trees in the treatment areas occupy primarily the middle layers of the forest canopy.

**Issue 5. Complete analysis of other practical alternatives—(a) regularly clearing ground litter, (b) thinning targeted species rather than removing all and regularly clearing the understory, and (c) creating strategic fuelbreaks.**

- UC's justifications for eliminating alternatives because they are environmentally more harmful than the proposed project are not discussed in further detail.
- *Thinning targeted species rather than removing all and regularly clearing the understory.* The UC accurately cites increased costs and a longer time period to implement as reasons that this alternative is not preferred, but the UC does not provide information that demonstrates that the increased costs or longer implementation period make this alternative infeasible. This alternative would reduce the fire hazard and would thus meet the purpose and need. This alternative should be evaluated in future NEPA documents.

**Issue 6. Document chips will decompose in 3 to 5 years.**

- In lieu of more relevant data, we generated a simple model using an average of the decomposition rates of the two studies, modified for negative exponential decay, as shown by Faber and Spiers (2004), Goya et al. (2008), and Grove et al. (2008). This model predicts that 24 inches of eucalyptus mulch would take 10 years to decompose to a depth of less than 1 inch.
- The issue of chip decomposition also affects the evaluation of the UC's response to Issue 1 because the UC's argument for native revegetation is based upon its assumptions of the decay rate and behavior of the eucalyptus chips.

# EXHIBIT B

**Hazardous Tree Reduction Draft Environmental  
Impact Statement (DEIS)  
*East Bay Hills, CA***

Fire Behavior Commentary; June 17, 2013

*Kelly Close, Fire Behavior Analyst  
Fire Progression, LLC*

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## I. SUMMARY

I was asked to evaluate the Hazardous Tree Reduction Draft Environmental Impact Statement (herein referred to as “the DEIS”) and provide feedback regarding fire behavior and fuel treatment options. This feedback includes assessment of the fire behavior modeling in the FEMA proposal, the alternatives considered, the efficacy of the proposed alternative selected, and the potential fire behavior and landscape impacts post-treatment.

I have reviewed all available components of the East Bay Hills DEIS for Hazardous Fire Risk Reduction and the East Bay Regional Park District (EBRPD) Wildfire Hazard Reduction and Resource Management Plan (WHRRMP). The discussion that follows also includes other reference material pertaining to fuels and fire behavior. These are cited in the References section (Appendix B).

Opinions and conclusions included in this document are based on the above sources of information, standard accepted fire behavior modeling methodology and procedures, and professional experience and observations.

## II. SCOPE AND SPECIFIC ISSUES

### Scope

This report focuses on the proposed fuel treatments described in the 2013 East Bay Hills Hazardous Fire Risk Reduction Draft EIS. A synopsis of the specific issues to be addressed in Section IV is provided below.

### Specific Issues to be Addressed:

#### ***Detrimental effect of the proposed fuel treatments in the DEIS on wildfire hazard mitigation.***

The immediate effect of the proposed fuel treatments will be to reduce the potential for torching, crown fire, and spotting. However, the proposed treatments will also increase the surface fuel loading substantially by converting non-fuels (standing trees) into surface fuels (lop-and-scatter treatment of branches). In the absence of any continued long-term maintenance beyond what is specified in the DEIS, it is my opinion that this change in fire hazard is temporary, valid only for a short period of time post-treatment, and trades one problem for another.

Removing all eucalyptus, Monterey pine, and acacia trees will be a severe site disturbance. Such catastrophic site disturbances that include extensive canopy removal do not favor the less invasive native species such as oak or bay trees, but rather favor

more invasive species. As noted above, this phenomenon has been documented on numerous mechanical fuel treatments in the California Bay Area that are similar to actions proposed in the DEIS. In my opinion, that without further long-term maintenance that includes extensive planting of other species, the proposed actions will not differentially favor native species, but will simply favor invasive, highly flammable brush species, both native and non-native, leading to dangerous, intense, and destructive wildfires. It is further my opinion that the actions proposed in the DEIS will lead to dangerous, intense and destructive wildfires. The net effect is essentially trading one fire hazard for another, at a significant dollar cost and detriment to the local ecosystems.

The DEIS states that removal of the tree canopy would increase the amount of rainfall that reaches the ground, rather than being intercepted by trees, and also acknowledges that precipitation reaching the ground by fog drip during the summer months, up to 10 inches annually, would be reduced or eliminated. The DEIS does not acknowledge the critical impact the reduced precipitation from fog drip would have on fire danger and the greater potential for catastrophic fires due to reduced summer precipitation. This is a serious omission that incorrectly downplays the impact of tree canopy removal.

***Effect of depositing up to 24 inches of eucalyptus mulch on the ground surface.***

The DEIS justifies depositing up to 24 inches of mulch, primarily from eucalyptus trees, on the ground surface based on research involving decomposition and fire hazard posed by no more than 6 inches of mulch. It fails to acknowledge research that highlights the high potential for spontaneous combustion in deeper accumulations of mulch, the difficulty of fire suppression in such fuels, the severe long-term damage to soils by the intense heating in mulch and wood chip fires, and the documented spotting danger posed by mulch and other forms of masticated fuels. In my opinion, deposition of this much woody material on the surface of the ground in any form does not follow sound fire management practices and has the net effect of increasing surface fuel loads.

***Issues with fire behavior modeling conducted for the DEIS.***

Fire behavior modeling conducted for the DEIS (FlamMap) included an assessment of the no-treatment alternative and the chosen, aggressive treatment alternative involving removal of all eucalyptus, Monterey pine and acacia trees. No modeling was done to assess the effectiveness of any alternative, less aggressive strategy – the Combined Alternative Program (DEIS, 3.3.1.4) in particular – nor any longer-term post-treatment fire hazard conditions. FlamMap has powerful features that facilitate determining the optimum fuel treatment strategy, and timing of treatments, for an area. Contrary to this, the FlamMap modeling in the DEIS was done *after* the chosen alternative was designed and selected.

Additionally, none of the fire behavior modeling in the DEIS addressed the Vesta model

developed by Australian researchers specifically for use in eucalyptus fuel types. This is a serious oversight considering the majority of the proposed hazard reduction work involves eucalyptus.

In my opinion, FlamMap was used in the DEIS simply to justify the chosen alternative, not to compare alternative strategies and determine the optimum fuel treatment strategy.

Further, FEMA could not, or would not, provide the data used for fire behavior modeling. This made independent assessment of alternative strategies, and comparison of those to the “no-Treatment” option and the chosen option, impossible.

***Failure of the proposed action to meet all mandatory FEMA criteria.***

The proposed action fails to meet all of the mandatory criteria as specified by FEMA’s Hazard Mitigation Program grant programs (DEIS, Section 2.2). In particular, for reasons described further in this document, it is my opinion they do not meet specific requirements for long-term effectiveness in reducing wildfire risk.

***Viability and feasibility of an alternative hazard mitigation strategy.***

The EBRPD fuel treatments for many polygons, planned and supported in part by the FEMA grant, use a less aggressive approach than the chosen fuel treatment strategies of the UC Berkeley or City of Oakland, and are similar to the Combined Alternative Program rejected in the DEIS. The proposed EBRPD treatments cost approximately \$4,444/acre compared to over twice that cost per acre for the proposed UC treatments, and over three times that for the Oakland treatments. Given that, and the numerous detrimental factors of the proposed actions (UC-Oakland) in the DEIS, it is my opinion that the Combined Alternative Program approach is clearly a preferable alternative to the actions proposed by the UC and City of Oakland. It meets all FEMA’s mandatory criteria, accomplishes FEMA’s stated hazard reduction objectives, follows sound forestry practices, does not result in an increase in invasive brush species post-treatment, deposits far less flammable woody material on the treatment sites, and is more economically sound.

### **III. INTRODUCTION**

#### **Terminology**

For the purpose of the discussion to follow, clarification of some basic fire behavior terminology is provided below. Fire behavior terminology was adapted from NWCG, 2012. Fuel treatment descriptions were from Section 3 of the DEIS.



### Fire Behavior Terminology

*Fire Behavior* - The manner in which a fire reacts to the influences of fuel, weather, and topography. Fire behavior is further described by the following types of fire propagation:

*Ground Fire* – Fire that consumes the organic material beneath the surface litter ground, such as a peat fire. Spread is primarily by smoldering combustion with low spread rates.

*Surface Fire* – Fire that burns loose debris on the surface, which includes dead branches, leaves, and low vegetation.

*Torching* – The burning of the foliage of a single tree or a small group of trees, from the bottom up.

*Crown Fire* – A fire that advances from top to top of trees or tall shrubs more or less independent of a surface fire. Crown fires are sometimes classed as running or dependent to distinguish the degree of independence from the surface fire. Dependent crown fires are by far the most common form of crown fire, as the conditions required to sustain a crown fire independent of a supporting surface fire are very unusual.

*Spotting* – Behavior of fire producing sparks or embers that are carried by the wind and which start new fires beyond the zone of direct ignition by the main fire.

*Crown Base Height* – The vertical distance from the ground surface to the lowest available crown fuels.

*Fireline Intensity* – The product of the available heat of combustion per unit of ground and the rate of spread of the fire, interpreted as the heat released per unit of time for each unit length of fire edge. The primary unit is Btu per second per foot (Btu/sec/ft) of fire front.

*Flame Length* – The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface), an indicator of fire intensity.

*Fuel Model* – Simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

*Rate of Spread* – The relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information.

*Wildland/Urban Interface (WUI)* – The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

### Fuel treatment terminology and descriptions

*Canopy removal* – The removal of all large trees to greatly reduce or eliminate overstory (crown) fuels.

*Limbing* – The removal of all branches of a tree to a specified height for the purpose of eliminating vertical fuel continuity (ladder fuels) and reducing or eliminating the risk of torching or crown fire.

*Thinning* – Selective removal of a portion of the trees, often favoring the removal of smaller trees, to create a more open stand of larger trees and reduce horizontal continuity of crown fuels.

*Proposed Actions* – For the purpose of this document, this term describes the proposed actions in the DEIS wherein eucalyptus, Monterey pine and acacia trees would be eliminated from treatment areas. Woody debris from removed trees up to 24 inches dbh would be mulched and spread over 20% the ground surface to a depth of up to 24 inches. Trees larger than 24 inches dbh would be cut to 20-30 foot lengths and left intact on the site as woody debris. Branches of trees larger than 24 inches would be lopped and scattered on the site. The stated objective is to leave all downed material on site (DEIS, 3.4.2).

*Combined Alternative Program* – The hazard fuel treatment method referenced in 3.3.1 of the DEIS, which includes: removal of brush and surface fuels; removal of lower tree limbs; species-neutral removal of small trees and understory trees to remove ladder fuels, increase tree spacing and maintain shade to suppress brush and grass; removal of eucalyptus debris that falls off trees after a freeze; keeping grass short by mowing or grazing. This treatment methodology is sometimes referred to as the “Selective Thinning Alternative” (Lozeau, 2013, pers. comm.).

### **Hazard Mitigation and Fuel Management**

The primary purpose of hazard fuel treatments in WUI areas is to change the potential fire behavior in a way that lessens the destructiveness of wildfires and provides less dangerous working conditions for firefighters. A basic tenet of wildland fuel management is to use various tools, models and data to determine the optimum treatment type and frequency, given site conditions, desired post-treatment conditions, and economic and other constraints. Fuel treatment can consist of mechanical treatment, prescribed fire, herbicide application, or a combination of these.

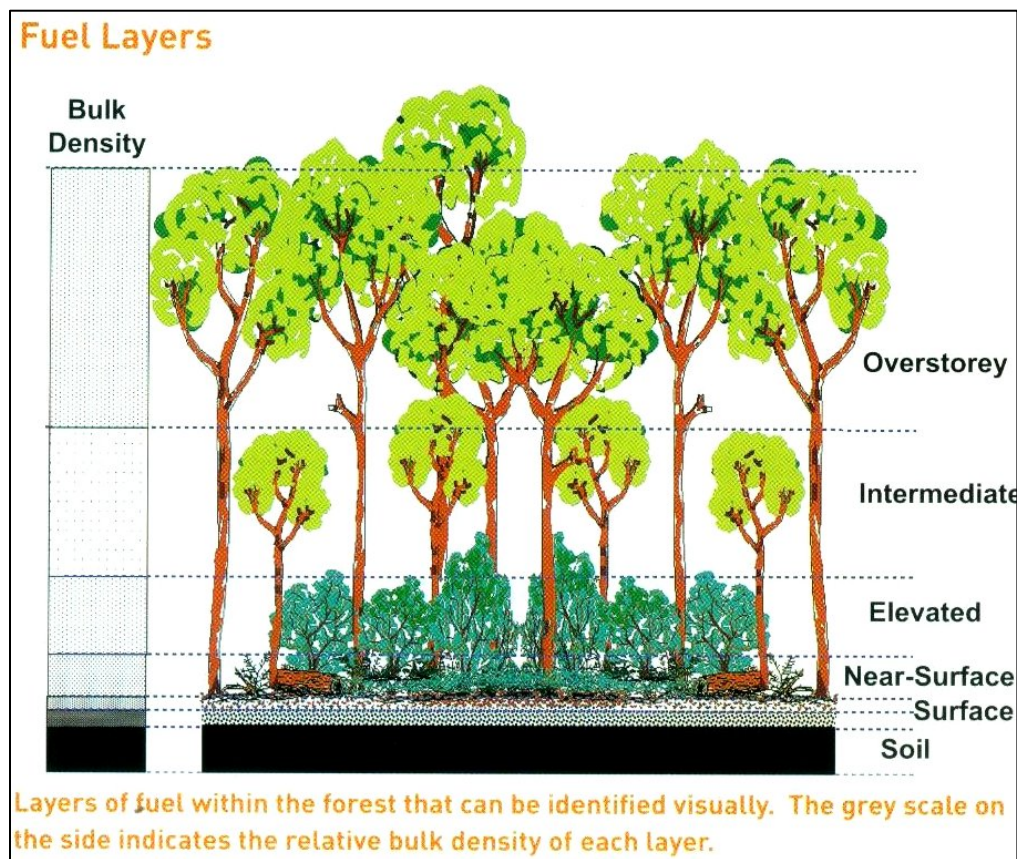
### **Wildland Fire Behavior Modeling**

In Rothermel (1972) described a means of modeling wildland surface fire spread and intensity through a set of mathematical equations and quantitative, stylized fuel models.

This system became known as BEHAVE (Rothermel, 1981) and has been a central component in fire behavior modeling for the past several decades. Like any model, BEHAVE has its inherent assumptions and limitations, and is intended as simply an approximation of real-world fire behavior that must be validated by observation and experience (Stratton, 2006). BEHAVE is a deterministic model, consisting of numerical inputs and outputs, and for many years was primarily a tabular model.

In 2007, Australian researchers produced a system, known as Vesta, which was developed specifically for assessing fire behavior in eucalyptus fuel types (Gould et al., 2007). Vesta was developed based on extensive field research in which 104 fires were set in eucalyptus forests to study fire behavior under an array of variables.

Vesta determines a separate hazard rating for surface and near-surface fuels and bark fuels. It then determines the rate of spread based on surface and near-surface fuel characteristics, and fuel moisture. Rate of spread and firebrand production are directly related to surface and near-surface fuels, as well as bark fuels. Finally, the surface fuel hazard rating is combined with the bark hazard rating and wind speed to determine the spotting potential. Vesta's real strength is that it is the only fire behavior prediction system that is specific to eucalyptus fuel types.



**Figure 1.** Fuel Layers in eucalyptus forests. From Vesta, 2008.

## **Spatial Wildland Fire Analysis and Modeling**

The growth in the prevalence of geographic information systems (GIS) and associated data enabled the development of spatially-based fire growth models that simulated fire spread and fire behavior across a landscape. Unlike BEHAVE, these spatially-based models consider all the various combinations of inputs at each point in a digital landscape in assessing fire growth and behavior. The two prevalent spatially-based fire modeling systems are FARSITE, which simulates fire growth in a temporally and spatially variable environment, and FlamMap, which displays potential fire behavior across an entire landscape for a given set of spatially-variable inputs. Both FARSITE and FlamMap also have the capability to produce a variety of tabular and graphical outputs as well.

FARSITE and FlamMap are not models per se, but rather a system of models that provides a variety of types of outputs. Each incorporates BEHAVE for surface fire modeling, along with several other fire behavior and fuel moisture models to enable assessment of crown fire and spotting, and fuel treatment planning (Rothermel, 1991; Van Wagner, 1993; Albin, 1981; Stratton, 2006).

### **Critical Thresholds for Initiation of Crown Fire**

Crown fire has two stages of development. The first is initiation wherein surface fire spreads into tree canopies (crowns) via vertical ladder fuels. This is commonly known as torching. The second phase is propagation of fire through the crown fuels. This requires critical measures of wind, slope, or both to occur (Van Wagner, 1977 and 1993).

There are three critical thresholds that must be met for crown fire to occur. First, there is a critical minimum surface fireline intensity needed to initiate crown fire for a given crown base height. This critical threshold increases exponentially with increasing crown base height (Fieldhouse, 2003). Second, continued propagation of a crown fire front typically is dependent on surface fire. Third, there is a critical threshold of crown spacing for a given wind speed. Above this critical crown spacing, propagation of a crown fire front will not occur (Schaaf et al., 2007).

### **Fuel Treatment Planning - FlamMap**

FlamMap allows the user to display potential fire behavior in a spatially variable environment, and provides useful tools for planning fuel treatments. FlamMap allows the user to quantify the impacts of varied landscape-level fuels treatments (Finney, 2006). FlamMap also enables the user to compare the effect of different fuel treatments on potential fire behavior (hazard), and FlamMap's Treatment Optimization Model helps

determine the optimum fuel treatment objective, and treatment timings, to minimize fire spread in a given project area (USDA Forest Service, 2012).

In addition to FlamMap, other companion tools are available – the Forest Vegetation Simulator and its Fire and Fuels Extension (FVS-FFE) provides a means of visualizing proposed fuel treatments. Another tool, MAGIS helps assess operational constraints related to maintenance of treatments. A project currently nearing completion, OptFuels, incorporates fire modeling capabilities of FlamMap, vegetation simulation capabilities of FVS-FFE, and land management components of MAGIS into a comprehensive tool for fuel treatment planning and management (Jones and Chung, 2011).

#### IV. DISCUSSION OF SPECIFIC ISSUES IN THE DEIS

##### ***Detrimental effect of the proposed fuel treatments in the DEIS on wildfire hazard mitigation.***

###### *High-disturbance impact of the proposed fuel treatments*

The immediate effect of the proposed fuel treatments will be to reduce the potential for torching, crown fire, and spotting. However, this is only a temporary reduction in fire hazard. Removing all eucalyptus, Monterey pine, and acacia trees will be a severe site disturbance. Such catastrophic site disturbances do not differentially favor less invasive native species, but rather favor more invasive species (Kerns, 2005; Owen, 2010). Martinson et al. (2008) pointed out that common hazard reduction treatments involving mechanical thinning or prescribed fire often result in the invasion of non-native species.

Further, the proposed treatments would convert non-fuels (standing trees) into available surface and ground fuels through a combination of mulching woody material and lop-and-scatter treatment of branches. This introduces a very significant amount of fuel onto the ground surface that was not there pre-treatment and creates a new fire hazard posed by the heavy accumulation of wood chips and other woody debris that was not present previously.

In other fuel treatments in the Bay Area similar to the proposed actions, canopy removal in similar vegetation types in fact encouraged rapid invasion of the treated sites by aggressive exotic species such as English ivy, acacia, *vinca* sp., French broom, and Himalayan blackberry (URS, 2009). The National Park Service (NPS) also states that treating eucalyptus fuels in California necessarily entails continued site maintenance, including planting native species, to avoid site invasion by aggressive non-native species (NPS, 2006).

It is my opinion that, in the absence of any continued long-term maintenance beyond what is specified in the DEIS, the stated reduction in fire hazard is temporary and only

valid for a short period of time post-treatment. The proposed actions will cause severe site disturbance that will not differentially favor native species as claimed, but will favor aggressive, invasive non-native species. Without further long-term maintenance that includes fuel reduction and extensive planting, the proposed actions will result in development of brush fields with characteristics much like native chaparral, leading to dangerous, intense, and destructive wildfires. The net effect is essentially trading one fire hazard for another – at a significant economic cost, detriment to the local ecosystems, and endangerment to the public.

*Impact of overstory removal on rainfall, fog drip and site conditions*

The DEIS (5.6.2.3) states that the amount of precipitation reaching the ground surface will increase after the proposed actions are implemented, largely due to less rainfall being intercepted by tree canopies. This will happen largely in the winter months when rain is most prevalent. The DEIS also states that canopy removal will result in decreased precipitation that reaches the ground during the dry summer months due to drastic reduction or elimination of fog drip. According to the DEIS, precipitation from fog drip is an important source of water in the summer months, producing up to 10 inches of precipitation each year. The DEIS also correctly states that sunlight reaching the ground surface will greatly increase after canopy removal, increasing the peak daytime temperatures.

The DEIS fails to mention that the combination of reduced precipitation and increased temperatures in the summer months will increase fire danger on treated areas. Thus, the fire danger will actually increase after the proposed actions are implemented. This is a serious and critical omission from the DEIS.

It is my opinion that removal of the canopy will result in hotter, drier conditions on treated sites that will support more intense fire spread with flame lengths well in excess of the stated FEMA objective of less than eight feet.

*Increased fire intensity in post-treatment vegetation*

The stated goal of the DEIS is to reduce wildfire hazard to acceptable levels by converting the current vegetation mix to one comprised largely of oaks, bays, grasses, and chaparral. As pointed out in the URS report (2009), in the absence of any post-treatment re-vegetation plan, all possible vegetation types for the treatment areas need to be considered. These include grasslands, chaparral, shrub/scrub communities, and oak-bay forests.

Per the Hills Emergency Forum, expected flame lengths in plant communities in the area are as follows:

**Table 1.** Fire hazard associated with six plant communities of the East Bay Hills.

| Species                             | Flame Length Range, ft. | Average Flame Length, ft. |
|-------------------------------------|-------------------------|---------------------------|
| Eucalyptus                          | 6-21                    | 13.5                      |
| Monterey Pine                       | 2-16                    | 9                         |
| Acacia                              | Not stated              | ---                       |
| Mixed hardwoods (incl. oak and bay) | 1-34                    | 17.5                      |
| Brush                               | 14-69                   | 41.5                      |
| Grasses                             | 12-38                   | 25                        |

Source: <http://www.hillsemergencyforum.org/MgmtRecmdtn.html>

The stated acceptable hazard level is defined in the DEIS by surface fires having flame lengths of no more than eight feet. However, the vegetation that the DEIS states will result from the proposed actions would result in median flame lengths that are significantly greater than 8 feet, and maximum flame lengths many times the stated DEIS objective of eight feet. Clearly, if the objective is to reduce the average flame length to less than 8 feet, the proposed actions fail to accomplish this goal and in fact have the net effect of increasing the long-term wildfire hazard in treated areas.

*Variance of proposed actions from standard hazard reduction practices in eucalyptus vegetation types*

In Australia, where eucalyptus forests are widespread and comprise much of the native vegetation, hazard reduction treatments do not entail total canopy removal. Rather, the typical treatment is reduction of surface fuels, usually by prescribed fire (Bradstock et al. 2012). In eucalyptus forests, the greatest hazards are intense surface fires and long-range spotting from bark. Reducing surface fuels has been found to be greatly successful in reducing these hazards, as well as minimizing the potential for crown fire.

Further, it has been found that eucalyptus trees actually help *reduce* fire hazard by breaking up turbulent flow dynamics of strong winds and reduce the hazard from flying embers. “Clear cutting gum barks reduces safety from firestorms, both along the Urban Wildland Interface as well as internal defensible space areas where they assist with high-risk ground fuel mitigation” (Lofft, 2010). For this reason, taller eucalyptus trees such as blue gum are now used for wind and fire protection in many locations.

The DEIS cites no evidence to support the contention that tree thinning and surface fuels management is not a viable alternative to the proposed actions, and in fact acknowledges that thinning and removal of understory fuels is an acceptable approach

to fire hazard mitigation (DEIS, Section 3.3.1). The approach of thinning and surface fuel treatment, outlined in the DEIS under the Alternative Treatment Program, has been used successfully by the EBMUD in adjacent properties for years, and has been increasingly favored by EBRPD as well. Further, The DEIS completely ignores widely accepted hazard reduction practices in eucalyptus forests of Australia.

In my opinion, the DEIS fails to justify the proposed actions as a better option than one based on thinning and surface fuel reduction. Moreover, the proposed actions in the DEIS completely ignore, and deviate substantially from, widely accepted hazard reduction practices in eucalyptus and would actually *increase* the fire hazard in the long-term.

***Effect of depositing up to 24 inches of eucalyptus mulch on the ground surface.***

*Effects of mulch on remaining vegetation*

The DEIS justifies depositing up to 24 inches of mulch and wood chips on the ground surface based on research involving decomposition and fire hazard posed by no more than 6 inches of mulch. It fails to acknowledge the detrimental effect a 24-inch depth of mulch will have on the remaining vegetation. Appleton and French (1995) recommended no more than 2-3" depth of mulch in landscaping to minimize detrimental effects on the remaining trees. 24 inches is far in excess of this. In contrast, the DEIS claims that the mulch generated by the proposed actions will actually preferentially favor native plant growth, yet fails to provide any scientific evidence of this. The research publications cited in the DEIS describe depths of no more than 12.5 cm (5 inches).

*Fire hazard posed by wood chips*

Wood chips and mulch pose a significant fire hazard in and of themselves. The Ohio Dublin Villager noted that mulch fires are common in landscaping (2013), and mulch fires can pose a serious risk of devastating fires (Escobar, 2013). As previously pointed out by the URS Corporation in their report to FEMA (2009), "Studies have shown that mulch layers actually can pose a fire risk depending upon the type of material, the depth of the mulch, and the climate at the mulch site." Studies have demonstrated that ignition by cigarettes or matches can result in a subsurface smoldering fire in a variety of mulch materials 4 inches deep (Steward et al. 2003).

Deep accumulations of mulch are also highly susceptible to spontaneous combustion. Fire Engineering describes the potential for catastrophic fires posed by spontaneous ignition in mulch piles (Finucane, 2008). This same article also noted the greater ignition potential of mulches high in oil. When a pile of wood chips spontaneously ignited in Everett, WA, the pile continued to smolder for months and workers battled flare-ups 24 hours a day (Chircop, 2013). In Phoenix, AZ, smoke from a mulch fire burning for an extended period of time caused health concerns to the point that a nearby high school



was forced to relocate classes (Bierman and Stout, 2013). Fires that ignite through spontaneous combustion or by other means of ignition may smolder and spread beneath the surface for days before being detected, making suppression of those fires extremely difficult and time-consuming.

With hot, dry weather and strong winds, mulch fires – particularly those not yet detected – pose a serious threat to surrounding wildlands. In 2012, the Lower North Fork Fire in Colorado originated from a prescribed burn of masticated fuels (essentially a coarse mulch) varying from 3-6” in depth. In subsequent days of patrol and mop-up, the burn appeared to be cold and dead. The fourth day post-burn, a strong, dry wind caused these “cold” fuels to begin actively burning again, resulting in an catastrophic escaped wildfire that destroyed 23 homes and killed three people (Bass, 2012).

Given the warmer, drier conditions on the treated sites after canopy removal, the high oil and volatile chemical content of eucalyptus fuels, and the frequent occurrence of strong winds in the proposed treatment areas, it is my opinion the deposition of eucalyptus mulch outlined in the DEIS will pose a very significant fire hazard for a number of years post-treatment.

#### Soil damage caused by mulch fires

Another issue with the extensive mulch deposition proposed in the DEIS is the potential for long-term damage to soils by mulch fires. Fires burning as smoldering combustion in mulch fuels expose underlying soils to intense, prolonged heat. This potential for excessive, lethal soil heating is very real and particularly problematic when soils are dry (Busse et al., 2005). Fires in mulch and ground fuels burn slowly and release a significant amount of heat in doing so (Frandsen and Ryan, 1986). Heating of the soil from mulch fires can damage roots of plants on the site (Stephens and Finney, 2001). Smoldering surface combustion causes more long-term damage to the soil itself by killing beneficial microorganisms in the soil and by actually altering the physical characteristics of soil – much like kiln-fired clay. This effectively sterilizes the soil, reduces water infiltration (DeBano, 1999), and leads to excessive runoff and erosion (Hungerford et al., 1991).

The DEIS fails to address the very real risk of permanent soil damage and other deleterious effects on vegetation posed by smoldering mulch fires. This risk is exacerbated even further by the warmer, drier conditions expected with canopy removal and the high oil and volatile chemical content of eucalyptus mulch.

#### ***Failure of the proposed action to meet all mandatory FEMA criteria.***

The proposed action fails to meet all of the mandatory criteria as specified by FEMA’s Hazard Mitigation Program grant programs (DEIS, Section 2. 2). In particular, the proposed actions are a one-time treatment, with follow-up actions limited to herbicide

application to reduce eucalyptus stump sprouting. Nowhere does the DEIS address longer-term (5-10 years or more) maintenance to keep the fire hazard from increasing due to invasion by native and non-native brush species. Two of the specific criteria which are not met by the proposed actions:

“Alternatives to a proposed action must also meet these criteria to be eligible for funding. To be eligible for funding, the proposed action or alternative must:

3. Be cost effective and able to substantially reduce the risk of future damage, hardship, loss, or suffering resulting from a major disaster, consistent with 44 CFR § 206.434(c)(5) and related guidance
5. Provide for long-term effectiveness and benefits (between 5 and 10 years, depending on the type of action). ”

For reasons previously discussed in this report, the proposed actions fail to meet the required criteria specified by FEMA as they relate to reducing future risk and providing for long-term effectiveness. .

### ***Issues with fire behavior modeling conducted for the DEIS.***

Fire behavior modeling conducted for the DEIS (FlamMap) included assessments of the no-treatment alternative, the proposed alternative involving removal of all eucalyptus, Monterey pine and acacia trees, and the connected actions of the EBRPD. The fire behavior modeling included in the DEIS is incomplete, vague, and fails to demonstrate the proposed actions are preferable to any alternative action, including the Combined Alternative Program (section 3.3.1.4).

#### **Fire modeling is incomplete**

For the proposed treatment areas, no modeling was done to assess the effectiveness of any alternative, less aggressive strategy – the Combined Alternative Program in particular. This treatment alternative was simply dismissed as expensive and difficult without any evidence to support this claim. In fact, the fire modeling Rice conducted for the DEIS (2011) showed that the a number of EBRPD treatments, which are similar to the Combined Alternative Program, are very effective in reducing fire intensity to acceptable levels (flame lengths below 4 feet) and in minimizing or eliminating the potential for torching or crown fire (DEIS, Appendix M-2, pp. 17-39). The DEIS failed to acknowledge this in eliminating the Combined Alternative Program from consideration. This is puzzling in that the DEIS incorporated the EBRPD hazard reduction plan as a viable part of the overall strategy of reducing wildfire hazard in the East Bay Hills, yet the Combined Alternative Program, similar to the proposed actions in many polygons of the EBRPD’s plan, was not considered in DEIS.

The modeling of post-treatment conditions presented in the DEIS is invalid because it modeled a state of vegetation and fuels that is irrelevant in the long term. Modeling done for post-treatment conditions shows in many cases that the proposed actions do in fact reduce the fire hazard to acceptable levels as specified in the DEIS. However, these conditions exist only immediately post-treatment. Wildland fuel complexes are inherently dynamic. Several critical factors will change over time that in turn will change the fire hazard, both in nature and degree of severity. The modeling as presented in the DEIS did not assess any potential conditions of the proposed treatment sites 5-10 years in the future, and thus fails to show that one of the key FEMA criteria for funding – long-term effectiveness – will be met. The DEIS clearly states that the intended vegetation mix that will exist upon completion of these projects is an oak, bay, chaparral, and grasses environment, this is the environment that should have been modeled rather than one immediately post-treatment that was only very transitory, and would not exist for more than a few months after the current trees are removed.

#### *Fire and fuels discussion minimizes the hazards inherent in mulch depositions*

Further, there was little mention in any of the fire and fuels discussion about the potential and real fire hazard posed by the extensive areas of mulch, up to 24 inches deep. As standing, live trees, eucalyptus trunks and large branches are not available as fuel. However, under the proposed actions, they would be ground up and redistributed onto the ground surface, thereby making them available as fuels. One of the stated objectives of the DEIS is to reduce the fuel load, and this action would actually *increase* fuel loads. The only mention of fire potential in mulch from the proposed actions is limited to one paragraph in section 5.2.1.

Though mulch fires cannot be modeled per se in any of the existing fire modeling systems, the fire modeling and related discussion of fire and fuels in the DEIS did not adequately address the increase in fuel loading due to mulching, the very real potential for mulch fires, nor their potentially deleterious impacts on the treatment sites and surrounding areas. This is a very significant omission in assessing the post-treatment fire hazard and efficacy of the proposed actions.

#### *Vesta model not considered*

The Vesta model was developed by Australian researchers specifically for use in eucalyptus fuel types (Gould et al., 2008 and 2009). Unlike the U.S. fire modeling systems (BEHAVE, FlamMap, FARSITE), Vesta addresses the unique characteristics of eucalyptus fuels and provides a system for assessing fire behavior in these fuels.

The fire modeling presented in the DEIS did not include any assessment using Vesta, and did not even mention the existence of Vesta, which has been in use since 2007. While FlamMap can provide a general idea of the spatial distribution of fire behavior, it

does not include any fuel models involving eucalyptus fuels. Thus, it must necessarily be used with caution and a great deal of adjustments based on user experience.

There is a definite difference in how Vesta handles spotting and how the U.S. fire modeling system does so. In both cases, there is a rising column of hot air that initially comes from an intense surface fire. Once the base of the tree crown ignites, it adds to the intensity and vertical lift of the firebrand, which eventually is lofted above the tree tops and carried some distance by wind.

In the U.S. system (which FlamMap, BEHAVE and other programs use), the firebrand is generated in the tree canopy low in the crown fuels, then lofted vertically. Surface fuels initiate the process, but most of the fire dynamics happen in the burning tree crown.

In Vesta, the firebrand is generated mostly from surface and near-surface bark fuels, and to a lesser extent by near-surface and elevated fuels (see attached diagram). Spotting is strongly tied to a factoring of surface fire spread rate and wind, which generates the surface fire intensity necessary for vertical rise. However, unlike the U.S. model, the tree canopy does not significantly contribute to firebrand production. Its primary role is in adding to the intensity of the rising column of hot air and keeping the piece(s) of bark burning.

The omission of modeling using Vesta is a serious oversight considering the majority of the proposed hazard reduction work involves eucalyptus. The Vesta model is considered state-of-the-art science in eucalyptus fuel types, and its omission in the DEIS fire modeling calls into question many of the conclusions in the DEIS that are based on fire hazard assessment using only the U.S. models.

*Fire modeling was not done to determine the optimum treatment(s)*

FlamMap has powerful features that facilitate determining the optimum fuel treatment strategy (Treatment Optimization Model), and timing of treatments, for a given area. Alternative strategies can also be assessed and compared with FlamMap. Other available tools previously mentioned in this report allow for consideration of economic and other constraints in determining optimum fuel treatments. This is a standard approach to fuel management – identifying objectives, and developing treatment strategies to best meet those objectives.

The fire modeling in the DEIS goes counter to this. The FlamMap modeling in the DEIS was done *after* the chosen alternative was designed and selected. No modeling was done to proactively determine the appropriate strategy. In my opinion, FlamMap was used in the DEIS simply to justify the chosen alternative, not to compare alternative strategies and determine the optimum fuel treatment strategy. Had fire modeling with

FlamMap been done to assess alternative treatments, such as the Combined Alternative Program, it would have been clear that the proposed actions are not the only viable fuel reduction actions, and other actions might in fact be more effective and appropriate in meeting the stated goals for hazard reduction.

*Fire modeling results are vague and possibly erroneous*

The fire modeling outputs from the Anchor Point work are vague and do little to support the proposed actions. In Table 5.2.2 in particular, there are many cases where the fire hazard actually *increases* after treatment. No additional or corrected information was issued following a May 16, 2013 request for clarification of this from Anchor Point (Grassetti, 2013, pers. comm.). Therefore, one can reasonably conclude that the proposed actions will actually increase fire hazard in many cases.

Additionally, no numerical results were provided in Table 5.2.2. Instead, the reader is provided flame length categories with qualitative descriptions (Low, Moderate, High, Extreme) with no explanation of how these categories were defined. Therefore, the reader has no way of knowing what any of these classifications actually mean, making it impossible to properly ascertain whether the project objectives were met.

Given the many, significant shortcomings and omissions in the fire modeling, and subsequent discussion of fire and fuels, the DEIS as a whole should be invalidated. The fire modeling provided in the DEIS is core to the DEIS justifying that the proposed actions will accomplish the objectives of the grant, and it fails to do this.

*Inability to conduct additional fire behavior modeling to evaluate alternative treatment strategies not considered by the DEIS*

In order to conduct fire behavior modeling for the proposed alternative not chosen, or to determine parameters of other alternative fuel treatment strategies, the same data must be used as was used for the modeling included in the DEIS. FEMA has been unable or unwilling to provide data requested to properly analyze this DEIS. Despite a timely FOIA request, FEMA has failed to provide any of the documents or data that were requested from FEMA. This includes opinion documents from consulting agencies, updated/corrected fire modeling documents, and the electronic files that were used to run the fire modeling simulations.

The methodologies for three different fire modeling reports were described in some detail in the DEIS. However, the time and effort it would take to re-create these data would be prohibitively excessive, given the short period for comment. Thus, it was not possible to examine the chain of facts and logic FEMA used to construct the DEIS, and difficult to validate that FEMA's conclusions were warranted based on the inputs used. That FEMA did not provide the requested data files for fire behavior modeling made

independent assessment of alternative strategies, and comparison of those to the “no-Treatment” option and the chosen option, impossible.

In fact, in FOIA documents received in earlier requests, the URS Corporation clearly stated that the UC projects made little sense from a fire risk mitigation perspective, and that the US made assertions that were not supported. In light of this this one document that surfaced, one has to wonder how many others exist came to similar conclusions but were not released.

This in and of itself should invalidate the DEIS as NEPA requires that source documents be made available, but they were not.

***Viability and feasibility of alternative hazard mitigation strategies.***

Reasonable alternatives to the proposed actions were not considered in the DEIS and received only cursory discussion. No data or analyses were provided to support the dismissal of any of these alternatives. While the DEIS dismisses alternative approaches to the proposed UC methodology (proposed actions), in fact EBRPD and the East Bay Municipal Utility District (EBMUD) are planning on using many of these alternative approaches on their properties. It is puzzling that within the same document an approach is argued to be unfeasible and too expensive yet accepted as feasible and economically viable elsewhere in the same document. If thinning, and ladder fuel removal meet the fire hazard mitigation objectives for one agency, they should also do so for other agencies.

The DEIS dismisses removal of ladder fuels as expensive, and sometimes difficult on steep slopes. There are two issues with this statement. First, the proposed actions involve extensive logging activities on these same slopes. The degree of tree removal proposed on steep slopes would itself have a significant destabilizing effect on soils and itself lead to erosion. Second, no economic analysis was provided as to why removal of ladder fuels would be “expensive” and no comparison of any cost estimates was provided to support these claims.

The URS Corporation (2009) did not agree with FEMA’s assertion that thinning and ladder fuel removal was not a feasible treatment. The 2009 URS report to FEMA stated, "The UC accurately cites increased costs and a longer time period to implement as reasons that this alternative is not preferred, but the UC does not provide information that demonstrates that the increased costs or longer implementation period make this alternative infeasible. This alternative would not be as effective as the proposed project at reducing the fire hazard. However, this alternative would reduce the fire hazard and would thus meet the purpose and need. This alternative should be evaluated in future NEPA documents. "

Ultimately, the stated objective of the DEIS is to reduce fuel loads. In the case of the UC projects, the surface fuels – as well as aerial fuels and woody material – would in fact not be removed, but instead be chipped and scattered on-site. By comparison the Combined Alternative Program approach advocated by HCN would cause these fuels to actually be removed, thereby accomplishing what the DEIS says needs to be done.

## V. EFFICACY OF AN ALTERNATIVE STRATEGY

### Efficacy of alternative treatments in meeting the hazard reduction goals of the grant

Some of the EBRPD and ongoing EBMUD fuel treatments (proposed and connected treatments) planned and supported in part by the FEMA grant use a less aggressive approach than the proposed actions advocated by the UC and City of Oakland, are similar to the Combined Alternative Program (DEIS, 3.3.1) rejected in the DEIS, and effectively accomplish the stated goals of the FEMA grant.

### Economic viability of the Proposed Alternative Treatment

The EBRPD treatments cost approximately \$4,444/acre compared to over twice that cost per acre for the proposed UC and City of Oakland treatments, and over three times that for the Oakland treatments:

**Table 2.** Allocated funding and treatment costs per acre.

| Project Area         | Actions               | Grant Funding, \$      | Matching Funding, \$ | Total Funding, \$ | Treated Acres | Cost per Acre, \$ |
|----------------------|-----------------------|------------------------|----------------------|-------------------|---------------|-------------------|
| UC Strawberry Canyon | Proposed              | 450,000                | 150,000              | 600,000           | 56            | 10,714            |
| UC Claremont Canyon  | Proposed              | 350,000                | 116,000              | 366,000           | 43            | 10,840            |
| Oakland              | Proposed              | 1,329,018 <sup>1</sup> | 443,006              | 1,772,024         | 121.9         | 14,536            |
| EBRPD                | Proposed <sup>2</sup> | 1,800,000              | 600,000              | 2,400,000         | 540.2         | 4,444             |

1. Assuming the same cost per acre for Frowning Ridge as for Strawberry and Claremont, the UC would spend a total of \$1,998,000 to treat Frowning Ridge, of which 75%, or \$1.498m would come from Oakland. EBRPD is getting paid for treating 51.9 acres for Oakland, which based on an average cost per acre for the rest of the EBRPD projects (540.2 acres/\$1.8m equals \$3,333/acre + 25% matching, or \$4,444/acre). This leaves Oakland with:

\$3,000,000 starting  
 less UC Frowning \$1,498,000  
 less EBRPD 51.9 \$172,982  
 Net to Oakland is \$1,329,018 for 121.9 acres, plus 25% matching=\$1,772,024 total or \$14,536/acre

2. EBRPD's vegetation management methods are based on its Wildfire Hazard Reduction and Resource Management Plan (EBRPD 2009) and follow the same treatment methodology as Connecting areas described in the DEIS.





**Figure 2.** *Figure V-5* from EBRPD Wildfire Hazard Reduction and Resource Management Plan. These photos demonstrate the reduction in hazardous brush fuels achieved by treatments comparable to the Combined Alternative Strategy.



**Figure 3.** *Figure V-9, b* from EBRPD Wildfire Hazard Reduction and Resource Management Plan. These photos demonstrate the reduction in surface fuel continuity and elimination of ladder fuels achieved through treatments comparable to the Combined Alternative Program. For the “Low Fire Hazard” scenario (right), surface fires would be of low intensity and trees would not be susceptible to torching or crowning. Further, reduced eucalyptus bark on the ground surface and lower tree trunks minimizes the risk of spotting.

***The Combined Alternative Program is a more effective and more viable treatment methodology than no-action or the proposed actions***

The stated goal of the DEIS is to reduce wildfire hazard by treating hazardous fuels. While the proposed actions would reduce the risk of torching, crown fire and spotting immediately post-treatment, this approach would not necessarily reduce the fire hazard in the long term. It would introduce new hazards from increased surface fuel on treatment sites, hotter, drier conditions, and invasion of flammable, aggressive exotics. Even if the vegetation in the treatment areas eventually did revert to a more native



state, this does not come without significant fire hazards. As previously discussed, the native plant communities of the East Bay Hills, and of the western U.S. in general, carry significant fire hazards as they are almost universally fire-adapted or fire-dependent. In considering the average flame lengths shown in Table 1 for each of the native and non-native plant communities prevalent in the vicinity, it is clear that even with periodic maintenance, the resultant fire hazard would be well in excess of the stated objective of the DEIS.

In considering all the factors discussed in this report, the Combined Alternative Program is the best alternative for accomplishing that objective. Figure 3 provides a dramatic example of the fuel complex resulting from the Combined Alternative Approach as described in the DEIS. This approach reduces the fire hazard immediately post-treatment, and long-term, by:

- Maintaining the overstory, providing increased precipitation during the dry summer months and reducing understory growth through shading
- Minimizing understory fuels, thereby minimizing surface fire flame lengths to well below four feet and minimizing or eliminating the potential for torching, crown fire and spotting
- Removing ladder fuels, eliminating vertical fuel continuity and minimizing or eliminating the potential for torching, crown fire, and spotting

*Recommendation for the Combined Alternative Program approach to fuel treatments*

Given the demonstrated effectiveness of treatments similar to the Combined Alternative Program, and the lower cost per acre associated with such treatments, as well as the the numerous detrimental factors of the proposed UC and City of Oakland actions in the DEIS, it is my opinion that the Combined Alternative Program approach is clearly a preferable alternative. It meets all of FEMA's mandatory criteria, follows sound forestry practices, is consistent with current accepted hazard fuel reduction practices for eucalyptus, does not result in an increase in invasive brush species post-treatment, deposits far less flammable woody material on the treatment sites, and is more economically sound.

The Combined Alternative Program approach should be used as the preferred action on all areas to be treated in order to meet the stated objectives of the DEIS in reducing the fire hazard in the East Bay Hills. Additionally, to maintain a lower level of wildfire hazard, periodic maintenance should be performed following the approach of the Combined Alternative Program. This is necessary to prevent accumulation of surface and ladder fuels over time (Agee et al., 1973)

In my opinion, more reasonable and economically responsible alternatives have been dismissed or ignored in this DEIS. Based on the factors discussed in this document, it is my opinion that the DEIS as written is fatally flawed and should be retracted. Until a thorough and balanced assessment of treatment strategies and alternatives can be conducted, no further actions should be pursued beyond the planned actions currently being implemented by the EBRPD.

## **VI. APPENDICES**

**Appendix A – References**

**Appendix B – Professional and Educational Background**

## Appendix A – References

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## **Appendix B – Professional and Educational Background**

### **Expertise**

My primary areas of expertise are fire behavior analysis, wildland fire program management, hazardous fuel response and mitigation planning, and wildland fire operations. I have served as Fire Behavior Analyst (FBAN) and Long Term Analyst (LTAN) on numerous large, complex wildland fires. I have extensive experience working on incidents with complex suppression and management strategies, and with a diversity of land management and public safety considerations.

I have 26 years of experience in wildland fire and emergency services with federal, state, and local government fire organizations. This includes a breadth of wildland fire experience ranging from initial attack to support of large, complex fire organizations as an FBAN and LTAN, and prescribed fire and fuels management.

My fire behavior knowledge and expertise includes broad experience in wildland fire investigations, including origin and spread analysis, fire behavior and movement in complex terrain, firefighter turnover investigations, and fire loss litigation cases. I have helped teach a national-level course, Advanced Fire Behavior Interpretation (S-590), for 12 years.

I possess extensive expertise in the use of geographic information systems, analysis of spatial information, and geospatial fire analysis and interpretation. In particular, I have performed numerous complex analyses of fire behavior, potential fire growth, forensic fire behavior analysis, and hazard fuel treatment effectiveness. For this, I made extensive use of tools that include FARSITE (Fire Area Simulator), FlamMap, FireFamily Plus, BEHAVE, FSPRO (Fire Spread Probability) and RERAP (Rare Event Risk Analysis Process).

My experience in fire program management includes five years as the Wildland/Urban Interface (WUI) program coordinator for my current employer, and five years as the Rural Fire Coordinator for the state of Montana. In both of these positions, I worked with teams and working groups in hazard mitigation and pre-response planning, and in coordinating response to large, complex WUI wildfire incidents.

### **Professional Experience**

I am currently a Battalion Chief with the Poudre Fire Authority (PFA) in Ft. Collins, CO. In my current role, I oversee the daily operations of a Battalion covering approximately 120 square miles with complex planning and emergency response needs that include structural fire suppression in urban, suburban and rural areas; WUI operations;



whitewater rescue; mountain rescue; and emergency medical response.

Prior to that, I served nine years as a Captain. In that role, I supervised and managed the operations of an emergency response crew, served as the Operations liaison of the WUI Team, manage the department's Wildland Incident Qualification System for 140 personnel, and was part of the core hazmat response and planning team.

For nine years previous to my position as Captain, I served as Firefighter, Driver/Operator, and EMT with the PFA.

From 1990 to 1995, I was the state-wide Rural Fire Coordinator with the Montana Dept. of Natural Resources (DNRC) based in Missoula, Montana. I was the primary liaison between local and county fire organizations and the various state and federal agencies in the state of Montana.

From 1988 to 1990, I was a fuels technician, engine boss, and firefighter with the USFS on the Clearwater National Forest, ID.

From 1987 to 1995, I served as a volunteer firefighter and EMT with the Missoula Rural Fire District in Missoula, MT.

### **Education**

I received a Master of Science degree from the University of Montana, School of Forestry, in 1995. My degree was in Forestry, with emphasis in wildland fire management. Thesis topic: GIS Applications in Wildland/Urban Interface Fire Management and Planning in Missoula County, MT. 198pp.

I received a Bachelor of Science degree in Botany from the University of California, Davis 1980.

### **Professional Affiliations**

I served for five years as a subject matter expert as a member of the National Wildfire Coordinating Group (NWCG) Fire Behavior Subcommittee (2007-2012).

I currently serve on the Core Fire Science Advisory Committee, an interagency group providing fundamental guidance and oversight to the national fire behavior research needs in the U.S.

### **Fire Experience**

I have worked on over 200 wildland fires in my career as a firefighter, fireline supervisor, and Fire Behavior/Long Term Analyst.

My experience as FBAN and LTAN includes two to three week assignments on large, complex fires burning under extreme conditions:

| <b>Fire</b>  | <b>Agency</b>                                       | <b>State</b> | <b>Year</b> | <b>Size</b>         | <b>Duration</b> |
|--------------|-----------------------------------------------------|--------------|-------------|---------------------|-----------------|
| High Park    | U.S. Forest Service                                 | CO           | 2012        | 136 mi <sup>2</sup> | 3 weeks         |
| Station      | U.S. Forest Service                                 | CA           | 2009        | 250 mi <sup>2</sup> | 7 weeks         |
| Zaca         | U.S. Forest Service                                 | CA           | 2007        | 375 mi <sup>2</sup> | 6 weeks         |
| Day          | U.S. Forest Service                                 | CA           | 2006        | 255 mi <sup>2</sup> | 5 weeks         |
| Bar Complex  | U.S. Forest Service                                 | CA           | 2006        | 164 mi <sup>2</sup> | 4 weeks         |
| Hayman       | U.S. Forest Service                                 | CO           | 2002        | 215 mi <sup>2</sup> | 3 weeks         |
| Clear Creek  | U.S. Forest Service                                 | ID           | 2000        | 322 mi <sup>2</sup> | 12 weeks        |
| Cerro Grande | U.S. Forest Service<br>and National Park<br>Service | NM           | 2000        | 73 mi <sup>2</sup>  | 4 weeks         |

### **Qualifications – Wildland Fire**

I currently maintain the following fire line qualifications, per the National Wildfire Coordinating Group (NWCG) Incident Qualification System:

Fire Behavior Analyst - 12 years.  
 Division/Group Supervisor - 14 years.  
 Strike Team/Task Force Leader- 16 years.  
 Engine Boss - 22 years.  
 Incident Commander, Initial Attack - 21 years.  
 Firefighter, Type 1 and 2 (advanced and basic) – 24 years.

### **Other Qualifications**

I currently maintain additional qualifications:  
 Hazardous Materials Technician - past 7 years.  
 Swift Water Rescue Technician I - past 7 years.  
 EMT-A, Basic Emergency Medical Technician - past 21 years.

### **Additional Training**

As a part of achieving and maintaining my wildland fire qualifications, I have successfully completed the following NWCG (National Wildfire Coordinating Group) courses:

S-590      Advanced Fire Behavior Interpretation (1999)  
 S-300      Incident Commander, Extended Attack (1997)  
 S-339      Division/Group Supervisor (1997)

|           |                                                                     |
|-----------|---------------------------------------------------------------------|
| I-300     | Intermediate Incident Command System (1997)                         |
| S-234     | Firing Methods and Procedures (1997)                                |
| S-330     | Strike Team/Task Force Leader (1997)                                |
| RX-90     | Prescribed Fire Burn Boss (1997)                                    |
| S-490     | Advanced Fire Behavior Calculations (1994)                          |
| I-347     | Demobilization Unit Leader (1994)                                   |
| S-300     | Incident Commander Extended Attack (1993)                           |
| J-346     | Situation Unit Leader (1993)                                        |
| J-348     | Resource Unit Leader (1993)                                         |
| S-336     | Fire Suppression Tactics (1992)                                     |
| S-205     | Fire Operations in the Wildland/Urban Interface (S-215)             |
| S-260     | Fire Business Management (1989)                                     |
| I-220     | Basic Incident Command System (1988)                                |
| S-211     | Portable Pumps and Water User (1988)                                |
| S-212     | Power Saws (S-212)                                                  |
| S-230/231 | Single Resource Boss/Engine Boss (1988)                             |
| S-270     | Basic Air Operations (1988)                                         |
| S-130/190 | Basic Wildland Firefighter, Intro. to Wildland Fire Behavior (1988) |

## Teaching

Advanced Fire Behavior Interpretation, S-590. 2002, 2004, 2006, 2008, 2010. Two-week course. Lesson instruction and student mentoring.

NWCG Firefighter Safety Refresher, national curriculum. Conducted two Unit Lessons on fire behavior, and human factors in fire behavior, for the national course curriculum. Distributed on DVD. 2008 and 2009.

Intermediate Wildland Fire Behavior, S-290. 2000, 2002, 2003, 2005. 32-hour course. Lead Instructor.

Introduction to Fire Behavior Calculations, S-390. 2002, 2004, and 2005. 24-hour course. Lead Instructor.

Advanced Wildland Fire Behavior Calculations, S-490. 1999, 2001, 2003. 40-hour course. Lead instructor.

Fire Operations in the Wildland/Urban Interface, S-215. 2003, 2004. 32-hour course).

Firing Methods and Procedures, S-234. 2001 and 2003. 24-hour course.

Single Resource Boss/Engine Boss, S-230/231. 2002. 32-hour course.

Annual Safety Refresher training for local county, state, and U.S. Forest Service personnel. Annually since 2001.

### **Other Presentations**

International Fire Behavior and Fuels Conference; Spokane, WA. Extreme Fire Behavior. 2010.

Colorado State University, Forestry Dept. ; Ft. Collins, CO. Extreme fire behavior and critical fire weather. Invited guest lecture for upper-level Fire Management courses. 2003, 2004, 2009 and 2010.

U.S. Forest Service, Arapaho-Roosevelt NF; Ft. Collins, CO. Critical Fire Weather. Training session for US Forest Service seasonal personnel (2 hrs). 2007.

Annual Wildland Fire Refresher Training; Tahoe NF, CA. Human factors, line officer roles, and tactical decision making exercises for US Forest Service Fire Staff personnel. 2007.

Southern CA Training Officer's Association; Orange County, CA. Presentation on human factors and the fire environment (2 hrs). 03/2007.

Fire Behavior Analyst Workshop, Missoula, MT. Two presentations – FBAN involvement in investigations, and a case study of the Day Fire in S. CA (4 hours total). 2007.

Montana DNR Line Officer Workshop; Helena, MT. Organized and presented training on implications to line officers of firefighter burn over incidents on wildfires. 05/2006.

Redding (CA) Wildland Fire Workshop. Human factors on wildland fires (2 hrs). 2006.

Wildland Fire Safety Summit, Pasadena, CA. Presentation on the interaction of human factors and fire behavior (1 hr). 2006.

Canadian Forest Service, Fire Behaviour Specialist course; Hinton Training Centre, AB. Keynote address. 2006.

Wildland Fire Safety Summit; Missoula, MT. "Fire Behavior vs. Human Behavior: Why the Lessons from the Cramer Fire Matter" (1.5 hrs). 2005.

Regional Hotshot Crew Workshop, Southwest Region, U.S. Forest Service. Presentation of fire behavior and human factors in wildland fire fatalities. 2005.

Colorado State University, Forestry Dept.; Ft. Collins, CO. Wildland fire behavior and the fire environment; guest lecture for an upper-level Fire Management course. 2003

and 2004.

American Planning Association conference; Denver, CO. Facilitator for a field training session for wildland/urban interface planning and hazard mitigation. 2003.

Colorado Mitigation Conference; Denver, CO. Weather, Climate, and Fire Behavior – the effect of short-term and long-term atmospheric conditions on fuels, firefighter safety, and risk. Panel discussion. 2002.

### **Publications – Primary and Contributing Author**

Close, K. 2006. 20 Minutes at H-2: Linear Decision Making in an Exponential Fire Environment. In: Proc. 9th Wildland Firefighter Safety Summit; 2006 April 25-27, Pasadena, CA. Intl. Assoc. of Wildland Fire, Hot Springs, SD.

Close, K. 2005. Fire behavior vs. Human Behavior: Why the Lessons from Cramer Matter. In: Butler, B. W., et al. Eds. 2005. Wildland Firefighter Safety Summit – Human Factors; 2005 April 26-28; Missoula, MT. Intl. Assoc. of Wildland Fire, Fairfax, VA.

Interior West Fire Council. 1998. "Fire Management Under Fire – Adapting to Change." K. Close and R. Bartlette, eds. Proceedings of the 1994 Interior West Fire Council meeting and symposium, Coeur d'Alene, ID, 1-3 November, 1994. ISBN: 1-887311-02-5.

Close, K. and R. Wakimoto. 1995. Geographic Information Systems: Applications in Wildland/Urban Interface Fire Management Planning in Missoula County, MT. M. S. Thesis. School of Forestry, University of Montana, Missoula, MT. 198 pp.

Close, K, and R. Wakimoto. 1993. GIS Applications in wildland/urban interface fire planning: the Missoula County (Montana) project. In: 7<sup>th</sup> Annual Symposium on Geographic Information Systems in forestry, environmental and natural resource management. Feb. 15-18, 1993. Vancouver, BC. Pp 131-140.

Donoghue et al. 2003. Accident Investigation Factual Report: Cramer Fire Fatalities (U.S. Forest Service, 0351-2M48-MTDC). Provided fire behavior input to the main report, and authored Appendix C - Fire Behavior and Weather (24 pp. ).

Graham, R.T., Technical Editor. 2003. Hayman Fire Case Study. Gen. Tech. Rep. RMRS-GTR-114. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 396 pp.

National Wildfire Coordinating Group (NWCG). 2008. Fire Behavior Analyst/Long Term Analyst task book revision. Provided input and content for a major revision of task books (national-level training criteria) for Fire Behavior Analysts and Long Term Analysts.

Walsh Environmental Scientists and Engineers, LLC. 2006-2009. Provided fire behavior and weather content for comprehensive Community Wildfire Protection Plans for the communities of Coal Creek Canyon, Evergreen, Fairmount, Golden, Golden Gate, Indian Hills, Inter-Canyon, and Clear Creek County.

### **Special Projects**

Fire behavior of the McIntyre Hut and Bendora Fires on January 18, 2003 (Canberra, Australia). Expert witness on fire behavior for the Norton Rose law firm (representing the Australian Capital Territory government). Case pending.

Origin and spread of the EID and Cigarette Fires. Expert witness for a legal firm (McLachlan, McNab and Hembroff) in fire behavior, providing extensive and detailed analysis of the spread and behavior for two fires burning in proximity to each other. 2009. Case pending.

Growth and fire behavior of the Witch and Guajito fires. Expert witness for Travelers Insurance (Denenberg Tuffley, LLP), regarding the 2007 Southern California Fires. Analysis of fire behavior and spread from multiple ignitions. 2008-2009.

Burroughs v. U.S, "X" Fire. Expert witness, fire behavior. Assessment of fire origin, behavior and spread. 2008.

Brown and James, LLP. Expert witness, fire behavior and structural ignition from wildland fires. 2008.

U.S. Attorney's Office, District of Montana. *Backfire 2000 et al. vs. U.S. Government*. Expert witness, fire behavior. Provided comprehensive fire behavior analysis and re-construction of the fire chronology. 2005-2006.

Community Wildland Fire Protection Plans. Assisted in development of plans for multiple local jurisdictions in Colorado, primarily in providing fire behavior assessment. 2006-2009.

Larimer County, CO. Completed a federal matching-funds grant project involving the research, analysis, and development of practical applications for local WUI response, pre-planning, and hazard assessment for the northern Front Range of Colorado. 2006.

U.S. Forest Service, National Office. Cramer Fatality Investigation Team. Provided a detailed re-construction of the fire behavior leading to two firefighter fatalities; made several recommendations for organizational improvement that were implemented from this. 2003.

U.S. Forest Service, Rocky Mountain Research Station. Review Panel, Hayman Fire Case Study. Contributed input regarding fire behavior and fire suppression operations for a comprehensive written review of the Hayman Fire of 2002.

U.S. Forest Service, Angeles NF. Leona Fire arson investigation. Expert witness, fire behavior, and testimony in Los Angeles District Court. 2004.

Montana DNRC. Missoula, MT. Ryan Gulch Fire investigation. Expert witness, origin and fire behavior assessment. Analysis to determine the likely ignition location based on detailed fire behavior modeling and analysis. 2001.

National Park Service, National Office. Monument Fire Entrapment Investigation Team, Pecos National Historic Monument, NM. Provided detailed fire behavior analysis to the investigation of a firefighter entrapment. 2001.

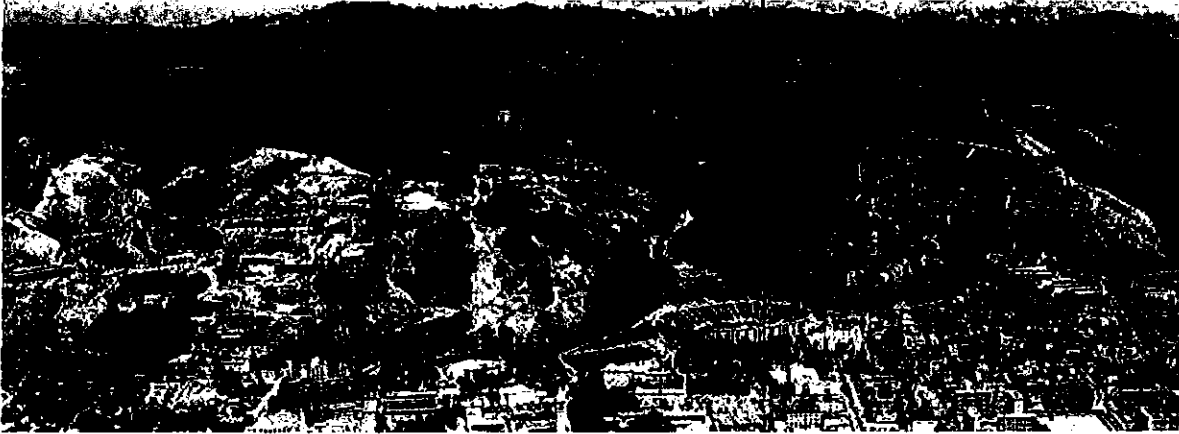
# EXHIBIT C



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**HILL AREA ISSUES**

**UC BERKELEY 2020 HILL AREA FIRE FUEL MANAGEMENT PROGRAM**



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**PREPARED BY SAFE SOLUTIONS GROUP  
FOR THE UC BERKELEY FIRE MITIGATION COMMITTEE**

**OCTOBER, 2003**

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**UC BERKELEY 2020 HILL AREA FIRE FUEL MANAGEMENT PROGRAM**

**UC BERKELEY 2020 HILL AREA FIRE FUEL MANAGEMENT PROGRAM**

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short grass, herbaceous materials or mulch. These goals may be achieved by treatment of the entire stand, such as crushing or grazing of species that stump sprout.

Alternatively, an area may warrant selective removal or thinning to meet the performance standard. If individual shrubs are removed to reduce the overall horizontal or vertical continuity and achieve the crown cover goal, it is desirable first to remove exotic species such as Himalayan blackberry, pampas grass and French broom. Next, common shrubs that readily re-sprout, such as coyote bush, poison oak, and sage, should be cut. Only as a last measure to maintain overall species composition should obligate seeders or other species favored for desirable fuel characteristics, such as ceanothus, oak, bay, huckleberry, snowberry, rose, iris or salal, be thinned or removed. Treatment will need to occur on a 5 to 7 year cycle to maintain the community as a fuel Model #5 low development stage which is the only shrub fuel model that does not display extreme fire behavior.

The size and shape of the treatment areas in the shrub community will vary depending upon the treatment method chosen and species treated. Three examples illustrate the range of treatment area size:

1. If the fire behavior goal includes removal of exotic species, the entire watershed will need to be treated to be effective. If the entire population of exotics is not removed, it will rapidly re-establish itself -- and perhaps expand from its original extent due to the soil disturbance caused by the treatment. Most of the exotic species in the program area - - such as thistle, French broom and pampas grass -- invade sites that have been disturbed.
2. The entire site should also be treated for removal of fire ladders if the community is successional scrub. Here, actions should focus on encouraging the emerging oak woodland by removing understory materials around small oaks and pruning up the limbs on the lower 1/3 of the oaks with trunks larger than 3" diameter.

If the overall height and density of the community are altered through such actions as crushing by machinery or grazing, the effective treatment area may be as narrow as 100

## UC BERKELEY 2020 HILL AREA FIRE FUEL MANAGEMENT PROGRAM

- graze less palatable aged materials early in year. Consult with herder to match stock (age, sex, species etc.) with target vegetation.
- Minimum cover
  - Site-specific based on soil stability, species regeneration sensitivity, aesthetics.
  - Function of presence of obligate "seeders."
- Debris load remaining (see also Grasslands)
- Debris to remain in place:
  - Mulch depth between 2" and 5". This is a compromise to allow for weed invasion control while controlling the increased hazard from ground fires.
  - Standing stems should be no higher than 18" for those species that are cut
  - Grass areas in mosaic between shrub islands must meet grassland treatment standards
- Specifications for chippers / mulch standards: Cut pieces to remain as mulch should be less than 12" in length.
- Pile burn: air quality regulations for height and area of piles. Stationary fires may be fed from piles too large to qualify for pile burns.
- Treatment cycle: Anticipate 5-7 treatment cycle to manage treated areas to standards of Fuel Model #4 Chaparral (Low) with young brush, short mature brush or patchy islands.

### 2) North Coastal Scrub (Dry and Wet)

It is dominated by low shrubs that vary in height from 2 to 8 feet (often considered "soft chaparral"). Special scrub types in Hill Area include Coastal Scrub on wet slopes, Coastal Scrub on dry slopes, and Diablan Sage Scrub. This type comprises approximately 210 acres or 28% of the total area. Dominant plant species include: Blackberry, Coyote brush, Ceanothus, Huckleberry, Iris, Monkey flower, Poison Oak, Sage, Salal, and Roses.

#### Primary Fuel Characteristic:

Fire Behavior and Responsiveness to Suppression:

Dry North Coastal Scrub: Overall hazard is rated as highest with flame lengths ranging from 14 to 69 feet depending upon development stage and slope. Dry North Coastal Scrub was modeled as either Chaparral (NFFL model #4) or Brush (model #5).

generally desirable, though the transition can be disruptive. Careful planning can minimize and shorten the adverse effects:

- Raptors may use eucalyptus forest for nesting. Periodic surveys would reveal the presence of nesting pairs. Major treatments (such as prescribed burning, logging or chemical treatments) in the vicinity of known nesting pairs should be postponed until young have fledged. Species of special concern include Cooper's hawk, sharp-shinned hawk and golden eagle.
- Eucalyptus trees in a sparse stand can serve as a nursery site for Oaks and Bays, providing some shelter from sun and wind. While eucalyptus would not be utilized deliberately in this way, special treatment of a stand could permit removal of the eucalyptus while protecting the Oaks and Bays.
- Fog drip from eucalyptus is a local phenomena that can encourage the growth of understory species. However, restoration to indigenous species is the ultimate goal.
- Hummingbirds depend on eucalyptus blossoms for winter nectar. Mitigation may include planting currants and other winter blooming shrubs to offset food loss.

#### **Potential Treatment Methods and Limitations**

- Hand Labor: Effective for removal of litter below trees, removal of loose bark and other treatment prior to treatment with prescribed fire. Effective for removal of lower branches, selective thinning of stands by removal of smaller trees in well-established stands, and on sites too steep for equipment or with other special considerations. Haul routes planned for removal of cut trees must minimize adverse impacts.
- Prescribed burn: Effective for removal of litter build-up. Requires use of other methods to prepare stand prior to safe use and to prevent crowning. Intermixed Oaks and Bays should be protected.
- Mechanical: Utilize on slopes under 30% to avoid adverse effects due to heavy equipment. Haul routes planned for removal of cut trees must minimize impacts.
- Chemical: Follow-up treatment utilized to reduce resprout following cutting. Monitoring of response and additional treatments are critical to prevent stump sprouting. Effectiveness is dependent on herbicide and practices utilized.

# EXHIBIT D



Technical Consultation, Data Analysis and  
Litigation Support for the Environment

2503 Eastbluff Dr., Suite 206  
Newport Beach, California 92660  
Fax: (949) 717-0069

Matt Hagemann  
Tel: (949) 887-9013  
Email: [mhagemann@swape.com](mailto:mhagemann@swape.com)

June 16, 2013

Mike Lozeau  
Lozeau | Drury LLP  
410 12th Street, Suite 250  
Oakland, CA 94607

**Subject:           Comments on the Draft Environmental Impact Statement, Hazardous Fire Risk  
Reduction Environmental Impact Statement**

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Dear Mr. Lozeau:

I have reviewed the April 2013 Draft Environmental Impact Statement, Hazardous Fire Risk Reduction Environmental Impact Statement, East Bay Hills, California (Project). The Project would provide funding to manage vegetation along ridge tops east of San Francisco Bay east of Interstate 80 in Richmond southeast to Lake Chabot in Alameda and Contra Costa counties. The objective of the project is to reduce fire risk to people and structures in the East Bay Hills by felling trees to reduce wildfire hazards.

Applicants for funding include:

University of California, Berkeley

In Claremont Canyon, UC Berkeley proposes to cut down all eucalyptus, Monterey pine, and acacia trees on approximately 43 acres of UCB property, chip the downed trees, spread the chips over eight acres, and apply herbicides to the stumps twice a year to prevent resprouting. Large logs would be reused for erosion and sedimentation control. In Strawberry Canyon, UC Berkeley would conduct the same activities on 56 acres.

City of Oakland

The City of Oakland proposes to reduce vegetation on approximately 359 acres owned by Oakland, UC Berkeley, and the East Bay Regional Parks District (EBRPD). Non-native trees (mostly eucalyptus) would be cut, chipped, and spread over 20 percent of each project site. Some large logs would be used for erosion and sedimentation control.

## East Bay Regional Park District

EBRPD proposes reduction of vegetative fuel on approximately 541 acres in 11 regional parks. EBRPD would mainly reduce non-native species, but would also cut native vegetation such as coyote brush. Fuel reduction methods include cutting and chipping of trees, pile burning of branches and cut brush, animal grazing, and treatment of stumps and re-sprouts with herbicides. Felled trees would either be chipped and spread on up to 20 percent of each project site or would be removed.

I have reviewed the Project for issues associated with air quality, greenhouse gasses, and hazardous substances. Project implementation may have significant and undisclosed impacts on the environment which are inadequately mitigated. Potentially significant impacts should be fully disclosed and properly mitigated, as necessary, in a revised DEIS.

## Air Quality

The DEIS states that unmitigated air emissions of CO, VOC, NO<sub>x</sub>, SO<sub>x</sub>, PM-10, and PM-2.5 from the Project would not exceed the significance thresholds if all activities were completed in a 10-year time frame (p. 5.5-10). The Project emissions are compared to significance thresholds listed in Table 4.6-4 (below).

**Table 4.6-4. Significant Emission Thresholds**

| Pollutant <sup>(1)</sup>                | Attainment Status             | Threshold Type                       | Significance Threshold, tons per year |
|-----------------------------------------|-------------------------------|--------------------------------------|---------------------------------------|
| Carbon monoxide (CO)                    | Attainment-Maintenance        | General Conformity <i>de minimis</i> | 100                                   |
| Nitrogen dioxide (NO <sub>2</sub> )     | Attainment                    | PSD major source                     | 100 <sup>(2)</sup>                    |
| Ozone:                                  | Nonattainment-Marginal        |                                      |                                       |
| - Oxides of nitrogen (NO <sub>x</sub> ) | (as O <sub>3</sub> precursor) | General Conformity <i>de minimis</i> | 100                                   |
| - Volatile organic compounds (VOC)      | (as O <sub>3</sub> precursor) | General Conformity <i>de minimis</i> | 100                                   |
| Respirable particulate matter (PM-10)   | Unclassifiable                | PSD major source                     | 100 <sup>(2)</sup>                    |
| Fine particulate matter (PM-2.5)        | Nonattainment                 | General Conformity <i>de minimis</i> | 100                                   |
| Sulfur dioxide (SO <sub>2</sub> )       | Attainment                    | PSD major source                     | 100 <sup>(2)</sup>                    |

The significance thresholds cited in Table 4.6-4 are considered to be de minimis thresholds which would trigger a General Conformity determination analysis, if exceeded.

Use of these thresholds is an incorrect measure for determining Project significance. The de minimus levels are derived from the EPA Conformity Review Rule to determine if Federal actions comply with the national ambient air quality standards.<sup>1</sup>

<sup>1</sup> <http://www.epa.gov/air/genconform/faq.html>

Application of the de minimus levels is arbitrary because the levels were identified based on the availability of federal agency resources to conduct a multitude of General Conformity analyses, rather than with any intent to determine a significance threshold for potential environmental impacts under NEPA. Although the levels set forth in the EPA Conformity Review Rule may be reasonable emission levels at which a particular project may not violate by itself ambient air quality standards, the levels do not identify and do not preclude significant air pollution impacts or possible cumulative impacts under NEPA, including for example degradation from ambient pollution levels that currently are consistent with standards.

Most importantly, EPA's General Conformity rules are general rules applicable to the entire country. They were not developed for Contra Costa or Alameda County or any area associated with the Project. Therefore, such general numbers cannot reasonably be linked to rational significance thresholds designed to assist FEMA or any agency in determining whether a Project's air pollution emissions will have significant environmental impacts.

Instead, thresholds used in the Bay Area Air Quality Management District (BAAQMD)<sup>2</sup>, are the appropriate measure by which to determine significance:

| Pollutant                                         | Construction-Related             | Operational-Related              |                                |
|---------------------------------------------------|----------------------------------|----------------------------------|--------------------------------|
| <b>Project-Level</b>                              |                                  |                                  |                                |
| Criteria Air Pollutants and Precursors (Regional) | Average Daily Emissions (lb/day) | Average Daily Emissions (lb/day) | Maximum Annual Emissions (tpy) |
| ROG                                               | 54                               | 54                               | 10                             |
| NO <sub>x</sub>                                   | 54                               | 54                               | 10                             |
| PM <sub>10</sub>                                  | 82<br>(exhaust)                  | 82                               | 15                             |
| PM <sub>2.5</sub>                                 | 54<br>(exhaust)                  | 54                               | 10                             |

The BAAQMD CEQA guidance that contains these thresholds states:

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.<sup>3</sup>

The BAAQMD trigger levels are much lower than the de minimus thresholds used in the DEIS: PM-10 is 15 tons/year as compared to 100 tons/year; PM-2.5 is 10 tons/year compared with 100 tons/year and NOX is 10 tons/year as compared to 100 tons/year.

<sup>2</sup>

<sup>3</sup> Bay Area Air Quality Management District CEQA Guidelines, June 2010



The Project estimates annual emissions of CO, VOC, NOx, SOx, PM-10, and PM-2.5 by assuming emissions are spread out over a 10-year duration. The annual emissions estimates below were developed by taking total project emissions and dividing by 10 for comparison to the General Conformity de minimis thresholds.

This is the wrong method for determining significance. First, the de minimis thresholds are not the appropriate measure of significance, as cited above. The San Francisco Bay Area Air Basin is non-attainment for national particulate matter ambient air quality standards.<sup>4</sup> In light of this status, the BAAQMD thresholds are the appropriate measure by which to determine Project significance on air quality.

Second, simply taking the 10-year emissions totals for CO, VOC, NOx, SOx, PM-10, and PM-2.5 (below) and dividing by 10 yields inaccurate estimates of annual emissions

**Table 5.5-7. Proposed and Connected Actions Total Emissions by Project Area**

| Project Area                                         | Total Emissions (tons) |              |              |             |              |              |
|------------------------------------------------------|------------------------|--------------|--------------|-------------|--------------|--------------|
|                                                      | CO                     | VOC          | NOx          | SOx         | PM-10        | PM-2.5       |
| UCB-Claremont-PDM                                    | 1.13                   | 0.19         | 1.23         | 0.00        | 0.42         | 0.09         |
| UCB-Strawberry Canyon-PDM                            | 1.30                   | 0.22         | 1.43         | 0.00        | 0.46         | 0.10         |
| UCB-Frowning Ridge-PDM                               | 2.60                   | 0.43         | 2.80         | 0.01        | 0.90         | 0.20         |
| Oakland - North Hills-Skyline-PDM                    | 1.21                   | 0.20         | 1.31         | 0.00        | 0.42         | 0.09         |
| Oakland - Caldecott Tunnel-PDM                       | 0.95                   | 0.16         | 1.03         | 0.00        | 0.33         | 0.07         |
| EBRPD - Anthony Chabot Regional Park                 | 109.84                 | 15.72        | 22.06        | 0.03        | 14.41        | 10.90        |
| EBRPD - Claremont Canyon Regional Preserve           | 24.04                  | 2.63         | 1.92         | 0.00        | 2.35         | 1.76         |
| EBRPD - Huckleberry Botanic Regional Preserve        | 2.75                   | 0.54         | 0.24         | 0.00        | 0.28         | 0.25         |
| EBRPD - Lake Chabot Regional Park                    | 0.07                   | 0.01         | 0.01         | 0.00        | 0.01         | 0.01         |
| EBRPD - Leona Canyon Regional Open Space Preserve    | 0.82                   | 0.08         | 0.05         | 0.00        | 0.07         | 0.05         |
| EBRPD - Miller/Knox Regional Shoreline               | 5.96                   | 0.62         | 0.78         | 0.00        | 0.62         | 0.50         |
| EBRPD - Redwood Regional Park                        | 26.56                  | 2.67         | 2.86         | 0.00        | 2.77         | 2.28         |
| EBRPD - Sibley Volcanic Regional Preserve            | 30.12                  | 4.02         | 5.34         | 0.01        | 3.80         | 2.98         |
| EBRPD - Sobrante Ridge Regional Preserve             | 0.35                   | 0.06         | 0.02         | 0.00        | 0.03         | 0.02         |
| EBRPD - Tilden Regional Park                         | 46.11                  | 6.27         | 7.38         | 0.01        | 5.66         | 4.60         |
| EBRPD - Wildcat Canyon Regional Park                 | 16.67                  | 2.08         | 2.08         | 0.00        | 1.87         | 1.48         |
| <b>Combined Proposed and Connected Action Totals</b> | <b>270.48</b>          | <b>35.88</b> | <b>50.54</b> | <b>0.06</b> | <b>34.39</b> | <b>25.40</b> |

In fact, the DEIS contradicts use of a 10-year average by stating:

While the bulk of the emissions would likely occur during the first 1 to 3 years of implementation for a given site, not all sites would be started in the same year (p. 5.6-1).

A review of the Oakland, UC Berkeley and the EBRPD grant application shows that DEIS ignores the actual time frames that will be required for each entity to implement the Project.

<sup>4</sup> Bay Area Air Quality Management District CEQA Guidelines, June 2010, p. 2-1

- Oakland’s “contract work period” is 24 months<sup>5</sup>;
- UC Berkley’s “contract work period is 12 months<sup>6</sup>;
- EBRPD’s estimate for work that involves fuels reduction and debris removal/burning/chipping is completed in one year<sup>7</sup>.

The DEIS fails to consider specific information from grant applications that would indicate air emissions will be concentrated in a two year period, not the ten year period that was used in averaging annual emissions. The DEIS should be revised to include estimates of all applicant’s emissions for the Project in a two year period and compare those emissions to the BAAQMD thresholds, not the General Conformity de minimus thresholds. Comparisons of this type will likely show significant emissions that require mitigation.

For example, the BAAQMD maximum annual emissions threshold for NOx is 10 tons per year. The total NOx project emissions is 50.54 (Table 5.5-7). If the bulk of Project activity occurred over a two-year period, the annual NOx emissions would be on the order of 25 tons per year, greatly exceeding the BAAQMD maximum annual emissions threshold for NOx of 10 tons per year. The estimate of 25 tons per year of NOx greatly exceeds the DEIR estimate of 5.05 tons per year (Table 5.5-9), inappropriately based on a ten-year average emissions rate.

The DEIS needs to be revised to provides a series of estimate, by year, of Project emissions of CO, VOC, NOx, SOx, PM-10, and PM-2.5, to include an emissions scenario where the great majority of the Project is completed by the three applicants in the same two-year time frame. The emissions estimates, to include a two year time period, should be compared to the BAAMD CEQA emissions thresholds, not the General Conformity de minimis thresholds which do not apply to the Project.

The DEIS also needs to be revised to include all feasible mitigation for any CO, VOC, NOx, SOx, PM-10, and PM-2.5 above thresholds following the completion of the revised Project emissions. The DEIR provides next to no mitigation for Project air emissions, stating only:

Although mitigation is not required since the impacts are less than significant all burning would be performed in conformance with Bay Area Air Quality Management District rules and regulations including “Burn Day” requirements. In addition, watering of the construction site would be conducted twice per day during access road construction on the sites requiring new or repaired access roads (p. 5.5-10)

Mitigation measures in a revised DEIS should be much more prescriptive to reduce, in particular, NOx, PM-10, and PM-2.5 emissions.

- Water application rates and the timing of water is critical in ensuring the effectiveness of reducing PM-10 and PM-2.5 emissions. The DEIR should include specifications for the application of water by each grantee specific to each of the areas given awards, including requirements to apply water twice daily or apply soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites;

<sup>5</sup> Subgrant Project Application, Oakland Fire Department, p.11

<sup>6</sup> Subgrant Project Application, UC Berkeley, p. 10

<sup>7</sup> Hazard Mitigation Grant Program, Brushing Fuels Management, East Bay Regional Park Department, p.20

- All trucks hauling wood chips, woody debris, and other loose materials should be tarped or be required to maintain at least two feet of freeboard;
- Sweep streets at least twice daily (with regenerative sweepers) where haul trucks travelling on unpaved roads intersect paved roads; and
- Implementing work stoppages if winds exceed 15 miles per hour.

Additional mitigation measures to further reduce the Project's PM10 and NOx emissions should be considered in a revised DEIS to include requirements to use newer technology Tier 4 standards for off-road engines with advanced emissions control technologies.<sup>8</sup> Use of Tier 4 technology can reduce NOx and PM10 emissions by 90% as compared to using Tier 3 technology.<sup>9</sup>

Additionally, all sensitive receptors (including residences, day care facilities, schools, and museums) within 1000 feet of the Project should be identified. Exposure to significant PM10 and NOx emissions can lead to significant risks to public health. PM10 inhalation can result in damage to lung tissue, cancer, and premature death.<sup>10</sup> PM10 exposure can also increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases as well as reduce the body's ability to fight infections.<sup>11</sup> Children are especially susceptible to higher risks.<sup>12</sup>

Exposure to NOx can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.<sup>13</sup> The DEIS acknowledges that NOx is an ozone precursor (table 4.3-3) and has the potential to worsen air quality in the region. Exposure to ozone, even at relatively low concentrations, can significantly reduce lung function and induce respiratory inflammation. Exposure can result in chest pain, nausea, coughing, and pulmonary congestion.<sup>14</sup>

Protection of the health of children and other people at facilities within 1000 feet of the Project should be protected through implementation of additional mitigation measures to include:

- Timing Project activities to coincide with periods when facilities are vacant (after hours, weekends, summer vacations);
- Fenceline monitoring of PM-10 and PM-2.5 and plans for work stoppage if levels exceed triggers; and
- Additional dust control measures, such as watering at least three times daily and street sweeping three times daily where trucks intersect nearby paved roadways.

<sup>8</sup> U.S. EPA, Nonroad Engines, Equipment, and Vehicles. Nonroad Diesel Engines.

<http://www.epa.gov/otaq/nonroad-diesel.htm>

<sup>9</sup> *Ibid.*

<sup>10</sup> U.S. EPA, Particulate Matter (PM-10). <http://www.epa.gov/airtrends/aqtrnd95/pm10.html>

<sup>11</sup> California Environmental Protection Agency, Air Resources Board. Air Pollution – Particulate Matter Brochure.

<http://www.arb.ca.gov/html/brochure/pm10.htm>

<sup>12</sup> U.S. EPA, Particulate Matter (PM-10). <http://www.epa.gov/airtrends/aqtrnd95/pm10.html>

<sup>13</sup> U.S. EPA, Nitrogen Dioxide. Health. <http://www.epa.gov/oaqps001/nitrogenoxides/health.html>

<sup>14</sup> U.S. EPA, Region 7 Air Program. Health effects of air pollution.

<http://www.epa.gov/region07/air/quality/health.htm>

Finally, diesel particulate matter (DPM) emissions are not discussed in the DEIS. Project-generated emissions of DPM would result from construction-related activities including exhaust of off-road heavy-duty diesel equipment used for hauling and clearing activities.

Conducting an analysis of DPM emissions is critical because of construction worker exposure and exposure to sensitive receptors adjacent to the Project area. The California Office of Environmental Health Hazard Assessment (OEHHA) states that truck drivers and equipment operators who are exposed to diesel exhaust are more likely to develop cancer than those not exposed. Short-term exposure to diesel exhaust include eye, nose, throat, and lung irritation, coughs, headaches, nausea, and lung tissue damage.<sup>15</sup> The U.S. EPA has classified DPM to be a likely human carcinogen.<sup>16</sup>

The DEIS does not identify the impact of health risks from DPM exposure on construction workers and nearby residents. A human health risk assessment (HRA) to determine the cancer risks to workers and nearby residents from Project construction should be prepared. HRA results should be compared to cancer risk significance thresholds set by the OEHHA and significant impacts should be disclosed and appropriately mitigated prior to DEIS certification, to include the following:

- Regular preventive maintenance of engines to reduce emissions;
- Require use of low sulfur and low aromatic fuel meeting California standards for motor vehicle diesel fuel by using 2007 or later model engines;<sup>17</sup> and
- Diesel equipment standing idle for more than five minutes shall be turned off. This includes trucks waiting to deliver or receive aggregate or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite.

## Greenhouse Gas Emissions

Consistent with the analysis of air emissions, the Project estimates annual emissions of greenhouse gasses (GHG) by assuming emissions are amortized over a 10-year duration (p 5.6-1). As discussed, this is an incorrect method to estimate project emissions which, according to applicant's information, will be concentrated in a time frame as short as two years.

Use of a ten year average allows the DEIS to calculate GHG emissions at "roughly" 2,050 metric tons per year (p. 5.6-7). The annual emissions estimate of 2,050 metric tons is compared to a 25,000 metric tons per year threshold for quantification as "listed in the CEQ draft guidance" (p. 5.6-7).

As with the flawed annual air quality emissions estimates, there are problems with the annual GHG emissions estimate: (1) inappropriate use of averaging; (2) comparison to an incorrect threshold; and (3) incorrect consideration of CO<sub>2</sub> emissions from downed woody debris and the value of sequestration.

<sup>15</sup> Office of Environmental Health Hazard Assessment, Health Effects of Diesel Exhaust. [http://oehha.ca.gov/public\\_info/facts/dieselfacts.html](http://oehha.ca.gov/public_info/facts/dieselfacts.html)

<sup>16</sup> U.S. EPA, Diesel Exhaust. <http://www.epa.gov/region1/eco/diesel/>

<sup>17</sup> U.S. EPA, Fuels and Fuels Additives. Diesel Fuel. <http://www.epa.gov/otaq/fuels/dieselfuels/index.htm>

Averaging over ten years, when grant applications indicate emissions concentrated in a two year time frame, is not a valid method to determine emissions. Instead, a two-year time frame should be considered for Project emissions.

Second, the DEIS uses a 25,000 metric ton per year threshold, well in excess of a 10,000 metric ton per year threshold developed by the BAAQMD specifically for considering projects' environmental impacts.<sup>18</sup> Use of the 25,000 metric ton per year threshold and use of the ten-year averaging methodology allows the DEIS to conclude that Project GHG emissions are not significant.

The DEIS should be revised to include GHG emissions estimates for a two-year period during which, the bulk of GHG-emitting activities would occur, including use of mechanized equipment and burning. The DEIS should compare GHG emissions under this scenario to the BAAQMD threshold of 10,000 metric tons per year. Project emissions should also be compared to the California Air Pollution Control Officers Association (CAPCOA) GHG emissions threshold of 900 MTCO<sub>2</sub>e/year.<sup>19</sup>

Third, the greenhouse gas emissions analysis conducted on downed trees that are left as pruned material on the ground or that are chipped and spread on the ground, is flawed. A reanalysis of the emissions of the downed woody debris is necessary in a revised DEIS which arrives at a CO<sub>2</sub>e emissions rate that would "roughly average 1,500 metric tons per year" (p. 5.6-7). The DEIS makes this decomposition estimate by looking at total eucalyptus sequestration for the Project area (Table 4.7-3), then assuming that only 25% of the eucalyptus are chipped and decay over 10 years. The estimate of eucalyptus chipped is low: Appendix D (pp. 10 of 91 to p. 86 of 91) shows the EBRPD to chip 50 percent of the Project area and UC Berkeley and Oakland to chip 100 percent. Therefore, the chipping will actually occur on at least 50 percent of the Project areas, not 25 percent as claimed in the DEIS.

Additionally, the DEIS fails to include non-native coniferous forest in the initial sequestration number which represent 6,807 metric tons of CO<sub>2</sub>e (Table 4.7-3). This means the total amount sequestered by the Project is more accurately estimated at 69,804 metric tons of CO<sub>2</sub>e instead of 62,997. If 50% of the trees are chipped, as opposed to the 25% estimate in the DEIS, then 34,902 metric tons of CO<sub>2</sub>e will be released by decomposition over a five year period, a rate of 6,980 metric tons of CO<sub>2</sub>e per year.

Direct emissions of CO<sub>2</sub>e from Project activities which include burning and equipment use equal 5,562 metric tons of CO<sub>2</sub>e. The DEIS uses an incorrect Project duration of ten years to arrive at an incorrect annual rate; if instead a two year Project duration is used, 2781 metric tons of CO<sub>2</sub>e per year will be emitted. Therefore, total Project emissions, from decomposition (6980 metric tons of CO<sub>2</sub>e per year) plus direct emissions (2781 metric tons of CO<sub>2</sub>e per year) equal 9761 metric tons of CO<sub>2</sub>e per year.

Finally, a revised DEIS need to account for the amount of carbon sequestration that will be lost by removal of trees by the Project. The eucalyptus and the Monterey pines trees felled in a two year period represent the loss of a carbon sink that is not factored into the GHG emissions estimates. The

<sup>18</sup> Bay Area Air Quality Management District CEQA Guidelines, June 2010, p. 2-1

<sup>19</sup> California Air Pollution Control Officers Association. CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>, p. 49.

amount of carbon sequestered on an annual basis is estimated to be 91,157 metric tons on the 98,600-acre East Bay Regional Park District.<sup>20</sup> No such estimate of annual sequestration has been made for the Project area.

According to the DEIS, the Project includes 824.3 acres of eucalyptus (Table 4.2-1). If one half of the eucalyptus are removed by the Project, 412 acres of sequestration capacity will be lost. At a sequestration rate of 1.41 metric tons per acre per year<sup>21</sup>, sequestration of 581 metric tons per year of CO<sub>2</sub>e will be lost.

When the amount of direct and indirect CO<sub>2</sub>e emissions of (9761 metric tons of CO<sub>2</sub>e per year) are added to the lost sequestration capacity (581 metric tons per year), Project CO<sub>2</sub>e emissions equal 10,342 metric tons of CO<sub>2</sub>e per year, in excess of the BAAQMD threshold of 10,000 metric tons per year and more than ten times CAPCOA threshold of 900 MTCO<sub>2</sub>e/year.<sup>22</sup>

No mitigation for GHG emissions is included in the DEIS. A revised DEIS should incorporate a revised GHG estimate and compare emissions to the BAAQMD threshold of 10,000 metric tons per year and the CAPCOA threshold of 900 MTCO<sub>2</sub>e/year. If GHG emissions exceed the CAPCOA and BAAQMD thresholds, an alternative that applies selective thinning to the entire project area would substantially reduce GHG emissions by reducing decomposition of chips, maintaining a significant amount of the currently sequestered carbon, and reducing the GHG emissions from equipment. The reduced levels from this alternative likely would be sufficient to achieve the BAAQMD's recommended threshold level, or any reasonable threshold selected by FEMA. In addition, all feasible measures<sup>23</sup> should be considered for construction and off-road equipment, including:

- Use alternative fuels for construction equipment;
- Use electric and hybrid construction equipment;
- Limit construction equipment idling;
- Institute a heavy-duty off-road vehicle plan;
- Implement a vehicle inventory tracking system; and
- Exclusive use of latest diesel technology as discussed above.

Consistent with CAPCOA guidance, carbon offsets should be purchased if these mitigation measures are inadequate to reduce emissions below thresholds.<sup>24</sup> If offsets are obtained, care should be taken to

<sup>20</sup> East Bay Regional Park District Carbon Sequestration Evaluation, December 2008, p. 1

<sup>21</sup> East Bay Regional Park District Carbon Sequestration Evaluation, December 2008: EBRPD estimates that the District's 1,633 acres of eucalyptus sequester 2,304 metric tons of carbon dioxide per year, or 1.41 metric tons per acre per year.

<sup>22</sup> California Air Pollution Control Officers Association. CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>, p. 49.

<sup>23</sup> [http://www.aqmd.gov/ceqa/handbook/mitigation/greenhouse\\_gases/CAPCOA-Quantification-Report-Final1.pdf](http://www.aqmd.gov/ceqa/handbook/mitigation/greenhouse_gases/CAPCOA-Quantification-Report-Final1.pdf) – see CAPCOA fact sheet, Section 8

<sup>24</sup> <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>, p. 40

show that offsets are in accordance with CAPCOA guidance.<sup>25</sup> According to CAPCOA, high quality credits are based on projects that have permanent, verifiable, enforceable and demonstrated emission reductions and should be obtained after certification from reputable registries such as the American Carbon Registry and the Climate Action Reserve.

## Hazardous Substances

Direct application of pesticides on stumps is planned to prevent resprouting of trees (p. 5.1-9). The adequacy of measures to protect water quality from planned use of pesticides is poorly evaluated in the DEIS. A revised DEIS should be prepared to include an analysis of measures included in the DEIS to protect water quality from pesticide application, including:

- Adequacy of a ban of foliar application of herbicides within a 60-foot buffer zone adjacent to ephemeral or permanent surface water bodies (p. 5.1-9). The DEIS does not include an analysis of the effectiveness of a 60-foot buffer on protection of water quality and only cites as a rationale a 2006 U.S. District Court decision issued to protect the California red-legged frog (p. 5.4-9). No measures are provided in the DEIS about how the buffers will be measured and designated in the field and how supervision will be provided to ensure the prohibition of pesticide application within the buffers.
- Effectiveness of controls on the restriction of herbicide application within 24 hours of predicted rain events (40% or greater chance for rainfall) (p. 5.1-9). No mechanisms are provided in the DEIS to ensure these restrictions are rigorously followed. No protocol are provided that would require retention of documentation of rain forecasts and logs to show how activities were restricted upon issuance of the forecasts.
- Effectiveness of restrictions to prevent spray application of herbicides when wind speeds exceed 10 miles per hour (mph) or less than 2 mph to reduce likelihood of drift into surface water bodies. Again, no provisions are included to cover non-compliance with the restriction. No protocol are included (i.e. use of anemometers or wind meters) to ensure this restriction is followed.

The DEIS does not describe the potential need for any other application of pesticides for any other purposes, including weed control. The DEIS only vaguely states that integrated pest management approaches will be used, including “non-chemical methods such as hand pulling or chip deposition on seed stock to prevent seedling germination, thus reducing the need for herbicides” (p. 5.4-9). Weeds have been controlled by applicants to the Project through use of pesticides. For example, in Oakland, pesticides including glyphosate and triclopyr are used on pampas grass clumps and broad leaf plants (Appendix F, p. F-20).

A revised DEIS needs to be prepared to acknowledge the potential need to use pesticides for applications other than to prevent resprouting. Any additional use of pesticides should trigger a review

<sup>25</sup> <http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf>

of the effectiveness of the mitigation measures above. For example, additional loading of pesticides adjacent to the buffer for use in weed control may render the 60-foot setback ineffective.

Other alternatives may offer better protection of waterways from pesticide impacts. Selection of an alternative that results in preservation of some trees would mean that less pesticides would need to be used on the stumps of felled trees.

Hand work is not described in the DEIS as a measure to prevent weed growth following fuels removal. Exclusive use of hand work would preclude use of pesticides but may result in other impacts such as the increased potential for erosion. A revised DEIS should be prepared to describe the need for hand work and the impacts on water quality from increased erosion.

Sincerely,

A handwritten signature in blue ink, appearing to read "M Hagemann".

Matt Hagemann, P.G., C.Hg., QSD, QSP





2503 Eastbluff Dr., Suite 206  
Newport Beach, California 92660  
Tel: (949) 887-9013  
Fax: (949) 717-0069  
Email: [mhagemann@swape.com](mailto:mhagemann@swape.com)

**Matthew F. Hagemann, P.G., C.Hg., QSD, QSP**

**Geologic and Hydrogeologic Characterization  
Industrial Stormwater Compliance  
CEQA Review  
Investigation and Remediation Strategies  
Litigation Support and Testifying Expert**

**Education:**

M.S. Degree, Geology, California State University Los Angeles, Los Angeles, CA, 1984.  
B.A. Degree, Geology, Humboldt State University, Arcata, CA, 1982.

**Professional Certification:**

California Professional Geologist  
California Certified Hydrogeologist  
Qualified SWPPP Developer and Practitioner

**Professional Experience:**

Matt has 25 years of experience in environmental policy, assessment and remediation. He spent nine years with the U.S. EPA in the RCRA and Superfund programs and served as EPA's Senior Science Policy Advisor in the Western Regional Office where he identified emerging threats to groundwater from perchlorate and MTBE. While with EPA, Matt also served as a Senior Hydrogeologist in the oversight of the assessment of seven major military facilities undergoing base closure. He led numerous enforcement actions under provisions of the Resource Conservation and Recovery Act (RCRA) while also working with permit holders to improve hydrogeologic characterization and water quality monitoring.

Matt has worked closely with U.S. EPA legal counsel and the technical staff of several states in the application and enforcement of RCRA, Safe Drinking Water Act and Clean Water Act regulations. Matt has trained the technical staff in the States of California, Hawaii, Nevada, Arizona and the Territory of Guam in the conduct of investigations, groundwater fundamentals, and sampling techniques.

Positions Matt has held include:

- Founding Partner, Soil/Water/Air Protection Enterprise (SWAPE) (2003 – present);
- Geology Instructor, Golden West College, 2010 – present;
- Senior Environmental Analyst, Komex H2O Science, Inc (2000 -- 2003);

- Executive Director, Orange Coast Watch (2001 – 2004);
- Senior Science Policy Advisor and Hydrogeologist, U.S. Environmental Protection Agency (1989–1998);
- Hydrogeologist, National Park Service, Water Resources Division (1998 – 2000);
- Adjunct Faculty Member, San Francisco State University, Department of Geosciences (1993 – 1998);
- Instructor, College of Marin, Department of Science (1990 – 1995);
- Geologist, U.S. Forest Service (1986 – 1998); and
- Geologist, Dames & Moore (1984 – 1986).

**Partner, SWAPE:**

With SWAPE, Matt’s responsibilities have included:

- Lead analyst and testifying expert in the review of numerous environmental impact reports under CEQA that identify significant issues with regard to hazardous waste, water resources, water quality, air quality, greenhouse gas emissions and geologic hazards.
- Stormwater analysis, sampling and best management practice evaluation at industrial facilities.
- Lead analyst and testifying expert in the review of environmental issues in license applications for large solar power plants before the California Energy Commission.
- Technical assistance and litigation support for vapor intrusion concerns.
- Manager of a project to evaluate numerous formerly used military sites in the western U.S.
- Manager of a comprehensive evaluation of potential sources of perchlorate contamination in Southern California drinking water wells.
- Manager and designated expert for litigation support under provisions of Proposition 65 in the review of releases of gasoline to sources drinking water at major refineries and hundreds of gas stations throughout California.
- Expert witness on two cases involving MTBE litigation.
- Expert witness and litigation support on the impact of air toxins and hazards at a school.
- Expert witness in litigation at a former plywood plant.

With Komex H2O Science Inc., Matt’s duties included the following:

- Senior author of a report on the extent of perchlorate contamination that was used in testimony by the former U.S. EPA Administrator and General Counsel.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of MTBE use, research, and regulation.
- Senior researcher in the development of a comprehensive, electronically interactive chronology of perchlorate use, research, and regulation.
- Senior researcher in a study that estimates nationwide costs for MTBE remediation and drinking water treatment, results of which were published in newspapers nationwide and in testimony against provisions of an energy bill that would limit liability for oil companies.
- Research to support litigation to restore drinking water supplies that have been contaminated by MTBE in California and New York.
- Expert witness testimony in a case of oil production-related contamination in Mississippi.
- Lead author for a multi-volume remedial investigation report for an operating school in Los Angeles that met strict regulatory requirements and rigorous deadlines.
- Development of strategic approaches for cleanup of contaminated sites in consultation with clients and regulators.

**Executive Director:**

As Executive Director with Orange Coast Watch, Matt led efforts to restore water quality at Orange County beaches from multiple sources of contamination including urban runoff and the discharge of wastewater. In reporting to a Board of Directors that included representatives from leading Orange County universities and businesses, Matt prepared issue papers in the areas of treatment and disinfection of wastewater and control of the discharge of grease to sewer systems. Matt actively participated in the development of countywide water quality permits for the control of urban runoff and permits for the discharge of wastewater. Matt worked with other nonprofits to protect and restore water quality, including Surfrider, Natural Resources Defense Council and Orange County CoastKeeper as well as with business institutions including the Orange County Business Council.

**Hydrogeology:**

As a Senior Hydrogeologist with the U.S. Environmental Protection Agency, Matt led investigations to characterize and cleanup closing military bases, including Mare Island Naval Shipyard, Hunters Point Naval Shipyard, Treasure Island Naval Station, Alameda Naval Station, Moffett Field, Mather Army Airfield, and Sacramento Army Depot. Specific activities were as follows:

- Led efforts to model groundwater flow and contaminant transport, ensured adequacy of monitoring networks, and assessed cleanup alternatives for contaminated sediment, soil, and groundwater.
- Initiated a regional program for evaluation of groundwater sampling practices and laboratory analysis at military bases.
- Identified emerging issues, wrote technical guidance, and assisted in policy and regulation development through work on four national U.S. EPA workgroups, including the Superfund Groundwater Technical Forum and the Federal Facilities Forum.

At the request of the State of Hawaii, Matt developed a methodology to determine the vulnerability of groundwater to contamination on the islands of Maui and Oahu. He used analytical models and a GIS to show zones of vulnerability, and the results were adopted and published by the State of Hawaii and County of Maui.

As a hydrogeologist with the EPA Groundwater Protection Section, Matt worked with provisions of the Safe Drinking Water Act and NEPA to prevent drinking water contamination. Specific activities included the following:

- Received an EPA Bronze Medal for his contribution to the development of national guidance for the protection of drinking water.
- Managed the Sole Source Aquifer Program and protected the drinking water of two communities through designation under the Safe Drinking Water Act. He prepared geologic reports, conducted public hearings, and responded to public comments from residents who were very concerned about the impact of designation.

- Reviewed a number of Environmental Impact Statements for planned major developments, including large hazardous and solid waste disposal facilities, mine reclamation, and water transfer.

Matt served as a hydrogeologist with the RCRA Hazardous Waste program. Duties were as follows:

- Supervised the hydrogeologic investigation of hazardous waste sites to determine compliance with Subtitle C requirements.
- Reviewed and wrote "part B" permits for the disposal of hazardous waste.
- Conducted RCRA Corrective Action investigations of waste sites and led inspections that formed the basis for significant enforcement actions that were developed in close coordination with U.S. EPA legal counsel.
- Wrote contract specifications and supervised contractor's investigations of waste sites.

With the National Park Service, Matt directed service-wide investigations of contaminant sources to prevent degradation of water quality, including the following tasks:

- Applied pertinent laws and regulations including CERCLA, RCRA, NEPA, NRDA, and the Clean Water Act to control military, mining, and landfill contaminants.
- Conducted watershed-scale investigations of contaminants at parks, including Yellowstone and Olympic National Park.
- Identified high-levels of perchlorate in soil adjacent to a national park in New Mexico and advised park superintendent on appropriate response actions under CERCLA.
- Served as a Park Service representative on the Interagency Perchlorate Steering Committee, a national workgroup.
- Developed a program to conduct environmental compliance audits of all National Parks while serving on a national workgroup.
- Co-authored two papers on the potential for water contamination from the operation of personal watercraft and snowmobiles, these papers serving as the basis for the development of nation-wide policy on the use of these vehicles in National Parks.
- Contributed to the Federal Multi-Agency Source Water Agreement under the Clean Water Action Plan.

### **Policy:**

Served senior management as the Senior Science Policy Advisor with the U.S. Environmental Protection Agency, Region 9. Activities included the following:

- Advised the Regional Administrator and senior management on emerging issues such as the potential for the gasoline additive MTBE and ammonium perchlorate to contaminate drinking water supplies.
- Shaped EPA's national response to these threats by serving on workgroups and by contributing to guidance, including the Office of Research and Development publication, Oxygenates in Water: Critical Information and Research Needs.
- Improved the technical training of EPA's scientific and engineering staff.
- Earned an EPA Bronze Medal for representing the region's 300 scientists and engineers in negotiations with the Administrator and senior management to better integrate scientific principles into the policy-making process.
- Established national protocol for the peer review of scientific documents.

**Geology:**

With the U.S. Forest Service, Matt led investigations to determine hillslope stability of areas proposed for timber harvest in the central Oregon Coast Range. Specific activities were as follows:

- Mapped geology in the field, and used aerial photographic interpretation and mathematical models to determine slope stability.
- Coordinated his research with community members who were concerned with natural resource protection.
- Characterized the geology of an aquifer that serves as the sole source of drinking water for the city of Medford, Oregon.

As a consultant with Dames and Moore, Matt led geologic investigations of two contaminated sites (later listed on the Superfund NPL) in the Portland, Oregon, area and a large hazardous waste site in eastern Oregon. Duties included the following:

- Supervised year-long effort for soil and groundwater sampling.
- Conducted aquifer tests.
- Investigated active faults beneath sites proposed for hazardous waste disposal.

**Teaching:**

From 1990 to 1998, Matt taught at least one course per semester at the community college and university levels:

- At San Francisco State University, held an adjunct faculty position and taught courses in environmental geology, oceanography (lab and lecture), hydrogeology, and groundwater contamination.
- Served as a committee member for graduate and undergraduate students.
- Taught courses in environmental geology and oceanography at the College of Marin.

Matt currently teaches Physical Geology (lecture and lab) to students at Golden West College in Huntington Beach, California.

**Invited Testimony, Reports, Papers and Presentations:**

**Hagemann, M.F.**, 2008. Disclosure of Hazardous Waste Issues under CEQA. Presentation to the Public Environmental Law Conference, Eugene, Oregon.

**Hagemann, M.F.**, 2008. Disclosure of Hazardous Waste Issues under CEQA. Invited presentation to U.S. EPA Region 9, San Francisco, California.

**Hagemann, M.F.**, 2005. Use of Electronic Databases in Environmental Regulation, Policy Making and Public Participation. Brownfields 2005, Denver, Colorado.

**Hagemann, M.F.**, 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Nevada and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Las Vegas, NV (served on conference organizing committee).

**Hagemann, M.F.**, 2004. Invited testimony to a California Senate committee hearing on air toxins at schools in Southern California, Los Angeles.

Brown, A., Farrow, J., Gray, A. and **Hagemann, M.**, 2004. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to the Ground Water and Environmental Law Conference, National Groundwater Association.

**Hagemann, M.F.**, 2004. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in Arizona and the Southwestern U.S. Presentation to a meeting of the American Groundwater Trust, Phoenix, AZ (served on conference organizing committee).

**Hagemann, M.F.**, 2003. Perchlorate Contamination of the Colorado River and Impacts to Drinking Water in the Southwestern U.S. Invited presentation to a special committee meeting of the National Academy of Sciences, Irvine, CA.

**Hagemann, M.F.**, 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a tribal EPA meeting, Pechanga, CA.

**Hagemann, M.F.**, 2003. Perchlorate Contamination of the Colorado River. Invited presentation to a meeting of tribal representatives, Parker, AZ.

**Hagemann, M.F.**, 2003. Impact of Perchlorate on the Colorado River and Associated Drinking Water Supplies. Invited presentation to the Inter-Tribal Meeting, Torres Martinez Tribe.

**Hagemann, M.F.**, 2003. The Emergence of Perchlorate as a Widespread Drinking Water Contaminant. Invited presentation to the U.S. EPA Region 9.

**Hagemann, M.F.**, 2003. A Deductive Approach to the Assessment of Perchlorate Contamination. Invited presentation to the California Assembly Natural Resources Committee.

**Hagemann, M.F.**, 2003. Perchlorate: A Cold War Legacy in Drinking Water. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F.**, 2002. From Tank to Tap: A Chronology of MTBE in Groundwater. Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F.**, 2002. A Chronology of MTBE in Groundwater and an Estimate of Costs to Address Impacts to Groundwater. Presentation to the annual meeting of the Society of Environmental Journalists.

**Hagemann, M.F.**, 2002. An Estimate of the Cost to Address MTBE Contamination in Groundwater (and Who Will Pay). Presentation to a meeting of the National Groundwater Association.

**Hagemann, M.F.**, 2002. An Estimate of Costs to Address MTBE Releases from Underground Storage Tanks and the Resulting Impact to Drinking Water Wells. Presentation to a meeting of the U.S. EPA and State Underground Storage Tank Program managers.

**Hagemann, M.F.**, 2001. From Tank to Tap: A Chronology of MTBE in Groundwater. Unpublished report.

**Hagemann, M.F.**, 2001. Estimated Cleanup Cost for MTBE in Groundwater Used as Drinking Water. Unpublished report.

**Hagemann, M.F.**, 2001. Estimated Costs to Address MTBE Releases from Leaking Underground Storage Tanks. Unpublished report.

**Hagemann, M.F.**, and VanMouwerik, M., 1999. Potential Water Quality Concerns Related to Snowmobile Usage. Water Resources Division, National Park Service, Technical Report.

VanMouwerik, M. and **Hagemann, M.F.** 1999, Water Quality Concerns Related to Personal Watercraft Usage. Water Resources Division, National Park Service, Technical Report.

**Hagemann, M.F.**, 1999, Is Dilution the Solution to Pollution in National Parks? The George Wright Society Biannual Meeting, Asheville, North Carolina.

**Hagemann, M.F.**, 1997, The Potential for MTBE to Contaminate Groundwater. U.S. EPA Superfund Groundwater Technical Forum Annual Meeting, Las Vegas, Nevada.

**Hagemann, M.F.**, and Gill, M., 1996, Impediments to Intrinsic Remediation, Moffett Field Naval Air Station, Conference on Intrinsic Remediation of Chlorinated Hydrocarbons, Salt Lake City.

**Hagemann, M.F.**, Fukunaga, G.L., 1996, The Vulnerability of Groundwater to Anthropogenic Contaminants on the Island of Maui, Hawaii. Hawaii Water Works Association Annual Meeting, Maui, October 1996.

**Hagemann, M. F.**, Fukanaga, G. L., 1996, Ranking Groundwater Vulnerability in Central Oahu, Hawaii. Proceedings, Geographic Information Systems in Environmental Resources Management, Air and Waste Management Association Publication VIP-61.

**Hagemann, M.F.**, 1994. Groundwater Characterization and Cleanup at Closing Military Bases in California. Proceedings, California Groundwater Resources Association Meeting.

**Hagemann, M.F.** and Sabol, M.A., 1993. Role of the U.S. EPA in the High Plains States Groundwater Recharge Demonstration Program. Proceedings, Sixth Biennial Symposium on the Artificial Recharge of Groundwater.

**Hagemann, M.F.**, 1993. U.S. EPA Policy on the Technical Impracticability of the Cleanup of DNAPL-contaminated Groundwater. California Groundwater Resources Association Meeting.

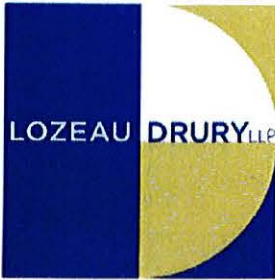
**Hagemann, M.F.**, 1992. Dense Nonaqueous Phase Liquid Contamination of Groundwater: An Ounce of Prevention... Proceedings, Association of Engineering Geologists Annual Meeting, v. 35.

**Other Experience:**

Selected as subject matter expert for the California Professional Geologist licensing examination, 2009-2011.



# EXHIBIT E



T 510.836.4200  
F 510.836.4205

410 12th Street, Suite 250  
Oakland, Ca 94607

www.lozeaudrury.com  
michael@lozeaudrury.com

May 8, 2013

Via U.S. Mail and E-mail

Alessandro Amaglio, Regional Environmental Officer  
FEMA Region IX Headquarters  
P.O. Box 72379  
Oakland, CA 94612-8579  
alessandro.amaglio@dhs.gov

Re: Administrative record documents for East Bay Hills Hazardous Fire Risk Reduction EIS

Dear Mr. Amaglio:

This letter follows up my recent voice mails requesting to come into the FEMA regional office to review documents currently included in the administrative record being developed for the East Bay Hills Hazardous Fire Risk Reduction Environmental Impact Statement ("DEIS"). Our firm has been retained by the Hills Conservation Network to prepare comments on the DEIS. Pursuant to 40 C.F.R. § 1506.6(f), we are interested in reviewing all documents to date that would be included in the administrative record for the DEIS. Section 1506.6(f) requires agencies to make available to the public any documents underlying a DEIS "available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. § 552), without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action."

We are particularly interested in reviewing any documents not available in the DEIS appendices already posted online pertaining to (1) the DEIS' elimination of any alternatives including any cost-benefit analyses, feasibility evaluations, or documents describing the methodology employed by the DEIS to evaluate the feasibility of rejected alternatives; (2) the DEIS' discussions of air quality impacts, greenhouse gas impacts, and pesticide application impacts, and (3) all input from the various cooperating agencies, including but not limited to correspondence and e-mails from the various applicants and the cooperating agencies. To the extent these documents can be isolated from other categories would be appreciated. We would like to make an appointment for early the week of May 13, 2013 to come into your office to review all of the documents to date relied upon by FEMA or its consultants in preparing the DEIS. Given the deadline for public comments on the DEIS, we would appreciate a very prompt response to this document request. Thank you in advance for your assistance in providing us access to the requested documents.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael R. Lozeau".

Michael R. Lozeau

# EXHIBIT F

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**Subject:** RE: Request to Inspect Documents – East Bay Hills Hazardous Fire Risk Reduction EIS

---

**From:** Amaglio, Alessandro (Alessandro.Amaglio@fema.dhs.gov)

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**To:** michael@lozeaudrury.com;

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**Date:** Wednesday, May 8, 2013 12:43 PM

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Mr. Lozeau,

Thank you for your inquiry. I have forward it to Mr. John Paul Henderson, our Regional Counsel for proper follow up.

I copied him on this response so you may also have his email contact.

Respectfully,

***Alessandro Amaglio***

*Regional Environmental Officer  
FEMA R IX-U.S. Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, California 94607-4052  
Phone: 510-627-7284  
Fax: 510-627-7138  
Cell phone: 510-610-1587  
Email: [alessandro.amaglio@fema.dhs.gov](mailto:alessandro.amaglio@fema.dhs.gov)*

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|                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>From:</b> Michael Lozeau [mailto:michael@lozeaudrury.com]<br/><b>Sent:</b> Wednesday, May 08, 2013 12:00 PM<br/><b>To:</b> Amaglio, Alessandro<br/><b>Subject:</b> Request to Inspect Documents - East Bay Hills Hazardous Fire Risk Reduction EIS</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Dear Mr. Amaglio,

Attached please find a request to inspect documents relating to the East Bay Hills Fire Risk Reduction DEIS.

Thank you,

Michael R. Lozeau  
Lozeau | Drury LLP  
410 12th Street, Suite 250  
Oakland, California 94607  
(510) 836-4200

(510) 836-4205 (fax)

[michael@lozeaudrury.com](mailto:michael@lozeaudrury.com)

Confidentiality Notice: This message and any attachment(s) may contain privileged or confidential information. Unauthorized interception, review, use or disclosure is prohibited by law. If you received this transmission in error, please notify the sender by reply e-mail and delete the message and any attachments. Thank you.

# EXHIBIT G

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**Subject:** Request for FEMA Records

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**From:** Henderson, John Paul (JohnPaul.Henderson@fema.dhs.gov)

---

**To:** michael@lozeaudrury.com;

---

**Cc:** Alessandro.Amaglio@fema.dhs.gov;

---

**Date:** Thursday, May 9, 2013 1:32 PM

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Dear Mr. Lozeau,

We received your May 8, 2013 request to inspect documents related to the East Bay hills Draft Environmental Impact Statement (DEIS). All requests for Agency documents must be submitted as a Freedom of Information Act (FOIA) request through the FEMA FOIA office pursuant to 44 CFR Part 5 and 6 CFR Part 5. Any documents you request will be released in accordance with Agency FOIA procedures. Due to staffing limitations, we will not be able to accommodate a request to inspect documents in person. Please note that you may be charged fees for the production of documents in accordance with 44 CFR Part 5, Subpart C.

Information on the FEMA FOIA process, including directions on how to submit a request, can be found at: <http://www.fema.gov/office-equal-rights/fema-freedom-information-act>

The FEMA FOIA e-mail address is [FEMA-FOIA@fema.dhs.gov](mailto:FEMA-FOIA@fema.dhs.gov).

As this office will have primary responsibility for locating Agency records, please copy us (myself and Alessandro Amaglio) on any request to the FEMA FOIA office so that we may respond to your request more promptly.

Sincerely,  
JP Henderson

J.P. Henderson  
Regional Counsel  
FEMA Region IX

# EXHIBIT H





T 510.836.4200  
F 510.836.4205

410 12th Street, Suite 250  
Oakland, Ca 94607

www.lozeaudrury.com  
michael@lozeaudrury.com

May 10, 2013

Via U.S. Mail and E-mail

FEMA FOIA Office  
Records Management/Disclosure Branch  
1800 S. Bell St., Fourth Floor, Mail Stop 3005  
Arlington, VA 22202  
FEMA-FOIA@dhs.gov  
FEMA-FOIA@fema.dhs.gov

Alessandro Amaglio, Regional Environmental Officer  
John Paul Henderson, Regional Council  
FEMA Region IX Headquarters  
P.O. Box 72379  
Oakland, CA 94612-8579  
alessandro.amaglio@dhs.gov  
JohnPaul.Henderson@fema.dhs.gov

Re: Freedom of Information Act Request - Administrative Record for East Bay Hills  
Hazardous Fire Risk Reduction EIS

Dear Mr. Amaglio, Mr. Henderson, and FEMA FOIA Office:

I am writing on behalf of the Hills Conservation Network (“HCN”), a California not-for-profit organization, to request copies of or access to all documents that comprise the administrative record to date relied upon by the Federal Emergency Management Agency (“FEMA”) to prepare the draft East Bay Hills Hazardous Fire Risk Reduction Environmental Impact Statement (“East Bay Hills EIS”) released to the public on April 25, 2013. This request also is made pursuant to 40 C.F.R. § 1506.6(f) which requires FEMA to make any documents underlying a DEIS “available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. § 552), without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action.” The request includes, but is not limited to, immediate access to or copies of all of the documents that do not have a functional web links listed as references in the DEIS at pages 9-1 through 9-25, pages F-111 through F-116, all studies cited in Appendix H (Wildfire Literature Review), all studies cited in Appendix L (Herbicide Use and Wood Chip Application Literature Review), and the references listed in Appendix M at pages 40 through 41 of the “Fire/Fuels Analysis for FEMA Grants in the East Bay Hills.” HCN is particularly interested in reviewing any documents not available in the DEIS appendices already posted online pertaining to (1) the DEIS’ elimination of any alternatives including any cost-benefit analyses, feasibility evaluations, or documents describing the methodology employed by the DEIS to evaluate the feasibility of rejected alternatives; (2) the DEIS’ discussions of air quality impacts, greenhouse gas impacts, and pesticide application

impacts, and (3) all input from the various cooperating agencies, including but not limited to correspondence and e-mails from the various applicants and the cooperating agencies. The request does not include any document that is accessible from the FEMA web site established for the project at <http://ebheis.cdmims.com/Documents.aspx>. Thus, HCN is not seeking copies or additional access to the DEIS itself or the appendices.

On May 8, 2013, I sent a letter to Mr. Amaglio, the Regional Environmental Officer for FEMA Region IX who is the staff person overseeing the East Bay Hills EIS. In that letter, HCN requested documents underlying the DEIS in order to effectively review and provide comments within the comment period announced by FEMA. Mr. Amaglio promptly responded to my request that same day by informing me that he was forwarding the request to the Regional Counsel. On May 9, I received an e-mail from Mr. Henderson, the Regional Counsel, informing me that the request I submitted would have to be submitted as a formal request under FOIA, referencing FEMA's FOIA regulations. If FEMA is going to require formal FOIA procedures in order for the public to access referenced materials, studies and other relevant documents underlying the DEIS, FEMA must adjust its public review period in order to allow the public a reasonable opportunity to access throughout the comment period all of the studies, referenced documents, and other relevant documents on which the DEIS relies for its discussions and analyses.

“The purpose of NEPA is to ‘ensure that agencies carefully consider information about significant environmental impacts’ and ‘**guarantee that relevant information is available to the public.**’” *Save the Peaks Coalition v. U.S. Forest Serv.*, 669 F.3d 1025, 1035 (9th Cir. 2012) (emphasis added) (citing *Lands Council v. McNair*, 629 F.3d 1070, 1075 (9th Cir. 2010)). “NEPA requires that ‘the public receive the underlying environmental data from which [an agency] expert derived her opinion.’” *Earth Island Inst.*, 351 F.3d at 1300-01, quoting *Idaho Sporting Cong.*, 137 F.3d at 1150; 40 C.F.R. § 1500.1(b). “An agency must also ‘identify any methodologies used’ and ‘make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the [EIS].’” 351 F.3d at 1301; 40 C.F.R. § 1502.24. “When relevant information ‘is not available during the [impact statement] process and is not available to the public for comment[,] . . . the [impact statement] process cannot serve its larger informational role, and the public is deprived of [its] opportunity to play a role in the decision-making process.’” *N.C. Wildlife Fed'n v. N.C. Dep't of Transp.*, 677 F.3d 596, 604-05 (4th Cir. 2012).

HCN is a non-profit public benefit corporation consisting of volunteers seeking to participate in the public comment and review process for the East Bay Hills EIS. Given FEMA's obligation to have compiled the relevant documents upon which the East Bay Hills DEIS is based and to make them available to the public during the comment period, HCN does not believe it is appropriate for FEMA to condition the public's ability to review and comment on documents relied upon or relevant to the DEIS on the payment of any fees, especially in advance. To the extent, FEMA requests HCN to pay for any copies, pursuant to 6 C.F.R. § 5.11(k), HCN hereby requests a waiver or reduction of fees. A waiver is appropriate because “(i) [d]isclosure of the requested information is in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the government; and (ii) [d]isclosure of the information is not primarily in the commercial interest of the requester.” 6 C.F.R. § 5.11(k)(1)-(3).

Disclosure of the requested documents will likely contribute significantly to public understanding of FEMA's DEIS and fire management in the East Bay. The requested documents pertain exclusively to documents relied on or otherwise compiled by FEMA in preparing the recently released East Bay Hills DEIS. Preparing a DEIS pursuant to the National Environmental Policy Act, 42 U.S.C. §4321 *et seq.*, and providing the public access to documents as required by NEPA in order to prepare comments and disseminate information to their members and the general public is an operation and activity of FEMA. The documents are essential to HCN's and the public's understanding of the DEIS and the proposed funding action reviewed by that environmental analysis. HCN is not requesting any documents that would duplicate documents already available publicly on the DEIS web site or linked with functional web links within the DEIS or its appendices. However, references relied upon by the DEIS and other documents that are not referenced or linked but that FEMA relies upon to support, for example, the range of alternatives considered by the DEIS or input from cooperating and other public agencies, would contribute to the public's understanding of FEMA's DEIS, and indeed are required to be disclosed pursuant to NEPA during the comment period. All of the documents requested by HCN would be available to all members of the public interested in commenting upon the DEIS by FEMA's comment deadline. As FEMA is well aware, there are numerous groups, agencies and individuals passionately concerned about fire management in the East Bay Hills. As for HCN, it has focused on fire management issues in that area for the last six years and assembled considerable knowledge regarding fire management techniques and actions in the East Bay Hills. HCN intends to retain several experts to review the requested documents, as well as documents already available on-line. HCN will apply considerable expertise to reviewing the documents and contributing significantly to the public's understanding of the DEIS, including circulating the results of its review to its members, the general public, news outlets, HCN's newsletter and various other non-profit newsletters, e-mail lists, HCN's web site (<http://hillsconservationnetwork.org/HillsConservation3/Blog/Blog.html>), and through FEMA's NEPA process.

Neither HCN nor its governing board have any commercial interest in the requested documents. HCN is motivated entirely by the public interest of assuring effective and efficient fire management throughout the East Bay Hills area. For all of these reasons, HCN respectfully requests that FEMA waive any fees it may otherwise assess.

To the extent that any portion of the information requested is exempt by express provision of law, please segregate and delete that material in accordance with the statute so that the remainder of the information may be provided to satisfy our request. If you determine that an express provision of law exempts from disclosure all or a portion of the material we have requested, please provide a determination and notification of the reason therefore, as required by 5 U.S.C. § 552(a)(6).

FEMA FOIA Office  
Alessandro Amaglio, Regional Environmental Officer  
John Paul Henderson, Regional Council  
May 10, 2013  
Page 4 of 4

Thank you for your prompt attention to this request. You may direct any email responses to michael@lozeaudrury.com. Should you have any questions regarding the request, please contact me at (510) 836-4200.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michael R. Lozeau", with a long, sweeping flourish extending to the right.

Michael R. Lozeau

cc: Dan Grassetti, Hills Conservation Network

# EXHIBIT I



**FEMA**

May 21, 2013

Michael R. Lozeau  
Lozeau Drury LLP  
410 12<sup>th</sup> Street, Suite 250  
Oakland, CA 94607

RE: FOIA Case Number 2013-FEFO-00729

Dear Mr. Lozeau:

We received your two Freedom of Information Act (FOIA) requests on behalf of the Hills Conservation Network (HCN) dated May 10 and May 16, 2013 for documents related to the draft East Bay Hills Hazardous Fire Risk Reduction Environmental Impact Statement (DEIS). The agency is currently processing your requests in accordance with agency FOIA guidelines. The purpose of this letter is to provide additional information on some of the specific requests in your letters and to respond to your requests related to the public comment period of the DEIS.

The FEMA Disclosure Branch will provide responsive documents and status updates under separate cover.

Under the National Environmental Policy Act (NEPA) and accompanying Council on Environmental Quality (CEQ) regulations, federal agencies are required to make all relevant information relied upon for the conclusions in an EIS available to the public. The DEIS released to the public on April 25, 2013 and published in the Federal Register on May 3, 2013 satisfies this requirement. Therefore, the agency will not extend the public comment period beyond June 17, 2013.

Regarding your May 10, 2013 request for documents cited as "References" on pages 9-1 through 9-25, F-111 through F-116, Appendix H, Appendix L, and Appendix M, the agency is not required to provide an actual copy of the referenced material. The CEQ regulations only require the agency to "make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement." 40 CFR § 1502.24. The agency is required to make available materials that are incorporated by reference. 40 CFR § 1502.21. However, the items listed as "References" are not incorporated by reference into the document; they are merely footnotes citing to research materials available to the general public through libraries and other research sources. Regarding referenced web links that may no longer be functional, the agency has followed accepted research practices by identifying the last date the materials were accessed online. The agency will update references when preparing the final EIS.

Michael R. Lozeau  
DEIS FOIA Requests  
Page 2 of 2

In your May 10, 2013 letter, you request any documents regarding the DEIS' elimination of alternatives; all documents on this subject are already included in the DEIS. If you feel that this subject is not adequately addressed in the DEIS, please address this in your public comments.

Regarding your May 10, 2013 request for any documents discussing air quality impacts, greenhouse gas impacts, and pesticide application impacts, all documents on these subjects are already included in the DEIS. If you feel that these topics are not adequately addressed in the DEIS, please address this in your public comments.

Regarding your May 10, 2013 request for input from the various cooperating agencies, the agency is currently compiling the requested documents and will provide them through the FOIA process.

Regarding your May 16, 2013 request for data utilized for the fire behavior models in Appendix M, this data is already available to the public in Appendix M, Part 2, "Anchor Point Methodology". The agency does not currently have access to the data in an electronic format.

As stated previously, the agency has determined that the DEIS, which has been made available to the public, contains all of the relevant information supporting the conclusions in the document. We thank you for your interest in this project and look forward to receiving your comments by the public comment deadline of June 17, 2013.

FEMA's Disclosure Branch will continue to process your FOIA requests. If you need to contact FEMA again about this matter, please refer to the FEMA FOIA Case Number 2013-FEFO-00729. You can reach the Disclosure Branch at (202) 646-3323 or electronically at FEMA-FOIA@dhs.gov.

Sincerely,



Alessandro Amaglio  
Regional Environmental Officer

cc: John-Paul Henderson  
Regional Counsel

# EXHIBIT J





FEMA

Mr. Dan Grassetti  
Hills Conservation Network  
1305 Alvarado Road  
Berkeley, California 94705

OCT 22 2012

Re: FEMA 11-631

Dear Mr. Grassetti:

This is the final response to your Freedom of Information Act (FOIA) request to the Department of Homeland Security (DHS)/Federal Emergency Management Agency (FEMA), dated and received by this office on July 12, 2011. You requested all correspondence between Mr. Alessandro Amaglio (Oakland) and the US Forest Service, US Department of Fish and Wildlife, and any other agencies that provided opinions requested by FEMA in the development of the Draft EIS for FEMA grants: PDMC-PJ-09-CA-2005-011, PDMC-PJ-09-CA-2006-004, PDMC-PJ-09-CA-2005-003, and DR 1731 HGMP (16,18).

We conducted a comprehensive search of FEMA's Region IX and the Grants Program Directorate (GPD) for documents responsive to your request. The search produced a total of 325 pages. Of those pages, we have determined that 117 pages of the records are releasable in their entirety, and 208 pages are partially releasable pursuant to 5 U.S.C. § 552(b)(4), (b)(5), and (b)(6).

**FOIA Exemption 4** protects trade secrets and commercial or financial information obtained from a person that is privileged or confidential. The courts have held that this subsection protects (a) confidential commercial information, the disclosure of which is likely to cause substantial harm to the competitive position of the person who submitted the information and (b) information that was voluntarily submitted to the government if it is the kind of information that the provider would not customarily make available to the public.

**FOIA Exemption 5** protects from disclosure those inter- or intra-agency documents that are normally privileged in the civil discovery context. The three most frequently invoked privileges are the deliberative process privilege, the attorney work-product privilege, and the attorney-client privilege. After carefully reviewing the responsive documents, we determined that portions of the responsive documents qualify for protection under the following privilege:

- **Deliberative Process Privilege**

The deliberative process privilege protects the integrity of the deliberative or decision-making processes within the agency by exempting from mandatory disclosure opinions, conclusions, and recommendations included within inter-

agency or intra-agency memoranda or letters. The release of this internal information would discourage the expression of candid opinions and inhibit the free and frank exchange of information among agency personnel.

**FOIA Exemption 6** exempts from disclosure personnel or medical files and similar files the release of which would cause a clearly unwarranted invasion of personal privacy. This requires a balancing of the public's right to disclosure against the individual's right to privacy. The privacy interests of the individuals in the records you have requested outweigh any minimal public interest in disclosure of the information. Any private interest you may have in that information does not factor into the aforementioned balancing test.

You have a right to appeal the above withholding determination. Should you wish to do so, you must send your appeal and a copy of this letter, within 60 days of the date of this letter, to: Disclosure Branch (FOIA Appeals), FEMA, 1800 South Bell Street, Fourth Floor, Arlington, Virginia 20598-3005. Your envelope and letter should be marked "FOIA Appeal." Copies of the FOIA and DHS regulations are available at [www.dhs.gov/foia](http://www.dhs.gov/foia).


All U.S. Forest Service redactions are marked with "per USFS (b)(6)."

U.S. Forest Service appeals must be made in writing, within 45 days from the date of this letter, to the Chief, USDA, Forest Service: 1) by e-mail to [wo\\_foia@fs.fed.us](mailto:wo_foia@fs.fed.us); 2) by regular mail to Mail Stop 1143, 1400 Independence Avenue, SW, Washington, DC 20250-1143; 3) by Fed Ex or UPS to 201 14<sup>th</sup> Street, SW, Washington, DC 20250-1143 and telephone (202) 205-1542; 4) by fax at (202) 260-3245. The term "FOIA APPEAL" should be placed in capital letter on the subject line of the e-mail or on the front of the envelope. To facilitate the processing of your appeal, please include a copy of this letter and/or the above FOIA control number assigned to your FOIA request.

Provisions of the FOIA allow us to recover part of the cost of complying with your request. In this instance, because of the delay in responding to your request, we are waiving any fees associated with the processing of it.

If you need to contact our office again about this matter, please refer to **FEMA 11-631**. This office can be reached at (202) 646-3323 or electronically at [FEMA-FOIA@dhs.gov](mailto:FEMA-FOIA@dhs.gov).

Sincerely,

  
Monique R. Booker-Kasper  
Acting Disclosure Branch Chief  
Records Management Division  
Mission Support Bureau

Enclosure: Responsive Documents on CD (325 pages)

**Amaglio, Alessandro**

---

**From:** Rob Griffith [rgn@fs.fed.us]  
**Sent:** Wednesday, December 15, 2010 08:45  
**To:** Amaglio, Alessandro; Kennard, David  
**Cc:** [redacted]@URSCorp.com; [redacted]@nps.gov; Sarah E Tomsky; [redacted]@urscorp.com; Flack, Joan  
**Subject:** EBH-EIS Fire/Fuels Analysis  
**Attachments:** Grant Application Summary 12.04.09.pdf

Alessandro and David,

As the representative of a cooperating agency with technical expertise in fire/fuels environmental analysis, I think it is important that FEMA direct Contractor URS to identify and quantify specific metrics which will be used to evaluate the fire/fuels performance of the proposed action (and alternatives) for consideration by the deciding official.

My suggestion of how to approach this follows:

[redacted]

[redacted]

[redacted]

[redacted]

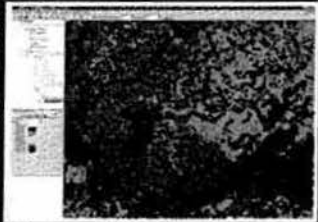
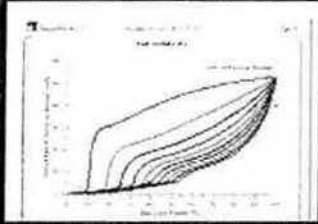
The web site [www.firemodels.org](http://www.firemodels.org) provides an excellent description of the most commonly accepted existing models (public domain and downloadable from the website), for example [**my emphasis added**]:

[redacted]

Generally, the same mathematical fire models are used to predict fire behavior. However, the way the models are used varies. For example, fire behavior systems produce outputs such as flame height, etc., whereas fire danger

indices are used to describe the environment.

Fire behavior systems are used for prescribed fire planning and predicting wildfire



and the placement of fuel



indices

I hope this is helpful.

-- Rob

Rob Griffith





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
 Sacramento Fish and Wildlife Office  
 2800 Cottage Way, Room W-2605  
 Sacramento, California 95825-1846



In Reply Refer To:  
 81420-2010-TA-0849-2

MAR 02 2011

Mr. Alessandro Amaglio  
 Deputy Environmental Officer  
 Federal Emergency Management Agency  
 U.S. Department of Homeland Security  
 1111 Broadway, Suite 1200  
 Oakland, California 94607-4052

Subject: Preliminary Comments and Guidance from the U.S. Fish and Wildlife Service (Service) on the Federal Emergency Management Agency's (FEMA) Development of an Environmental Impact Statement (EIS), Environmental Impact Report (EIR), and Biological Assessment (BA) for the Four Proposed Wildfire Mitigation Grant Application Projects (Grants Program) in the East Bay Hills, Alameda and Contra Costa Counties, California

Dear Mr. Amaglio:

It is our understanding that the FEMA Grants Program will provide financial support for four wildfire mitigation grant application projects in the Wildland Urban Interface (WUI) of the East Bay Hills in Alameda and Contra Costa Counties, California, from Sobrante Ridge Regional Preserve in the north to Chabot Regional Park in the south. At issue are the potential adverse effects of this project on listed species and wildlife. The comments and recommendations of the Service are made under the authority of the Endangered Species Act of 1973, as amended (16 USC § 1531 *et seq.*) (Act), our Mitigation Policy of 1956, and the National Environmental Policy Act.

This letter is based on: (1) the December 2009 *Draft Final Wildfire Mitigation Policy Grant Application Reviews for PDMC-PJ-09-CA-2005-011: UC Berkeley, Strawberry Canyon; PDMC-PJ-09-CA-2005-003: UC Berkeley, Claremont Canyon; PDMC-PJ-09-CA-2006-004: City of Oakland, Regional Fuel Management Project; PDMC-PJ-09-2009-001: UCSF, Edgewood Avenue; PDMC-PJ-09-2007-010: UCSF, Mt. Sutro South Ridge; HCMP 1731-16-34 East Bay Regional Parks District, Management Project* prepared by FEMA and URS, Oakland, California; (2) the November 2010 *Scoping Report for the Hazardous Fire Risk Reduction Environmental Impact Statement, East Bay Hills, California* prepared by FEMA; (3) maps of vegetation communities in the action area provided by FEMA via electronic mail on January 11, 2011 (Flack *in litt.* 2011); (4) the July 2009 *Wildfire Hazard Reduction and Resource Management Plan* prepared by LSA Associates, Inc. for the East Bay Regional Parks



Mr. Alessandro Amaglio

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District (EBRPD); (5) our biological opinions for the Strawberry Canyon and Claremont Canyon Vegetation Management Projects (Service 2007a, b, c, d); (6) conversations among the Service, FEMA, EBRPD, the University of California at Berkeley (UCB), the City of Oakland, and URS; and (7) other information available to the Service.

It is our understanding the four proposed FEMA Grants Program projects are: (1) the UCB Strawberry Canyon Vegetation Management Program (FEMA number PDMC-PJ-09-CA-2005-011), which involves the removal of eucalyptus (*Eucalyptus* species) and other non-native trees in a 60-acre area with post-treatment herbicide application to convert the area to native grasslands and oak-bay woodlands; (2) the UCB's Claremont Canyon Vegetation Management Program (FEMA number PDMC-PJ-09-CA-2005-003), which involves the removal of eucalyptus, Monterey pine (*Pinus radiata*) and acacia species (*Acacia* species) from a 45-acre area with post-treatment herbicide application to convert the area to native grasslands and oak-bay woodlands; (3) the City of Oakland Regional Fuel Management Project (FEMA number PDMC-PJ-09-CA-2006-004), which involves the removal of eucalyptus, Monterey pine, acacia species, and French broom (*Genista monspessulana*) from a 325-acre area and converting some native shrublands to grassland; and (4) the EBRPD Management Project (FEMA number HMGP 1731-16-34), which involves fuel reduction activities including brush removal, chemical treatment, limbing, mowing, and grazing over approximately 550 acres in Sobrante Ridge Regional Preserve, Wildcat Canyon Regional Park, Tilden Regional Park, Claremont Canyon Regional Reserve, Sibley Canyon Regional Preserve, Huckleberry Botanic Regional Preserve, Redwood Regional Park, Leona Canyon Regional Open Space Preserve, Anthony Chabot Regional Park, Lake Chabot Regional Park, and Miller/Knox Regional Shoreline.

Much of the specific information on the FEMA Grants Program is not available at this time, including, but not limited to: (1) the number of acres of each vegetation type present pre-treatment and the target number of acres of each vegetation type post-treatment; (2) the location of access routes, fuel breaks, and fire breaks; (3) an analysis of the direct and indirect effects of the proposed Grants Program on federally listed species, migratory birds, and other special-status species; (4) the types of equipment to be used; (5) the timing of initial fuel treatment activities; (6) the scope and frequency of post-treatment maintenance activities; (7) the types of herbicides and other chemical treatments to be applied; and (8) measures to minimize, avoid, and/or compensate for adverse effects to federally listed species, migratory birds, and other special-status species. As such, our comments are intended to provide FEMA with initial guidance in the development of the EIR/EIS and BA as they relate to federally listed species and their habitats, migratory birds, and other special-status species.

**Comments:**

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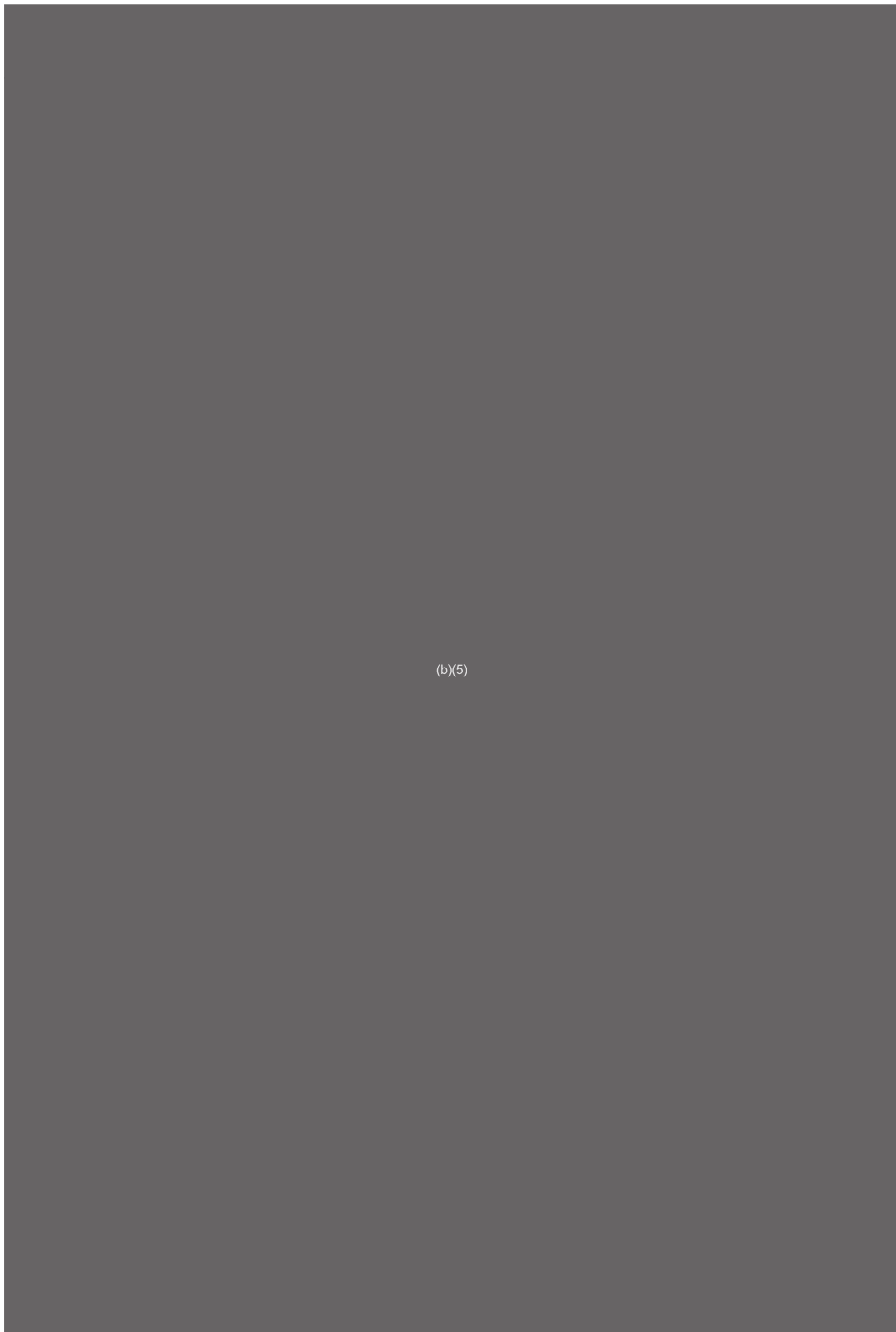
Mr. Alessandro Amaglio

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Mr. Alessandro Amaglio

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Mr. Alessandro Amaglio

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Mr. Alessandro Amaglio

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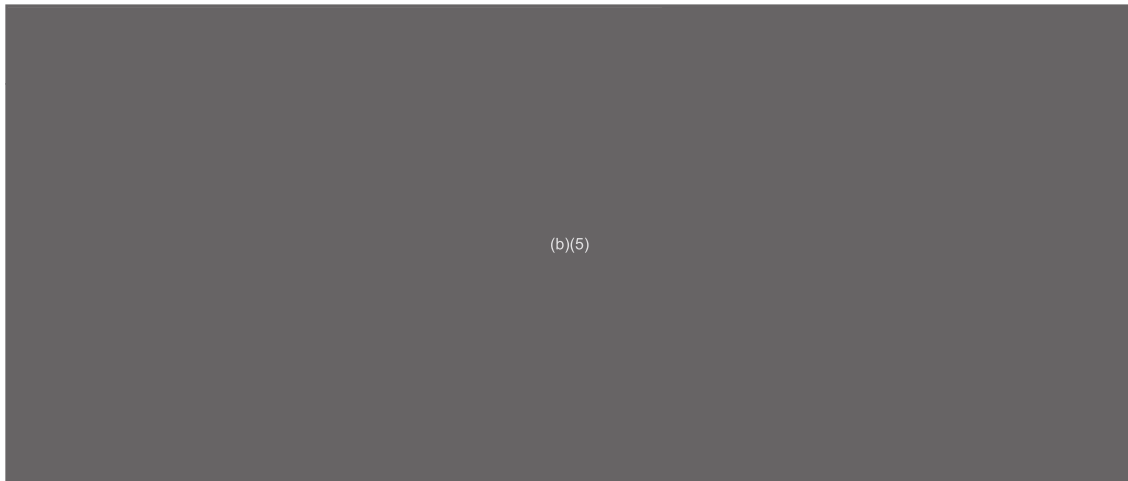
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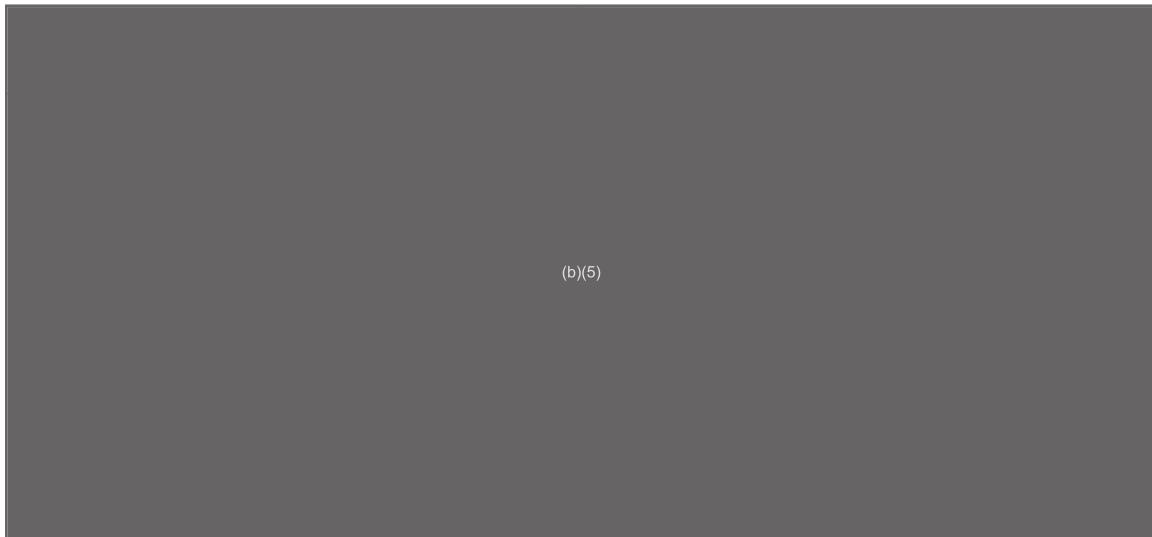
Mr. Alessandro Amaglio

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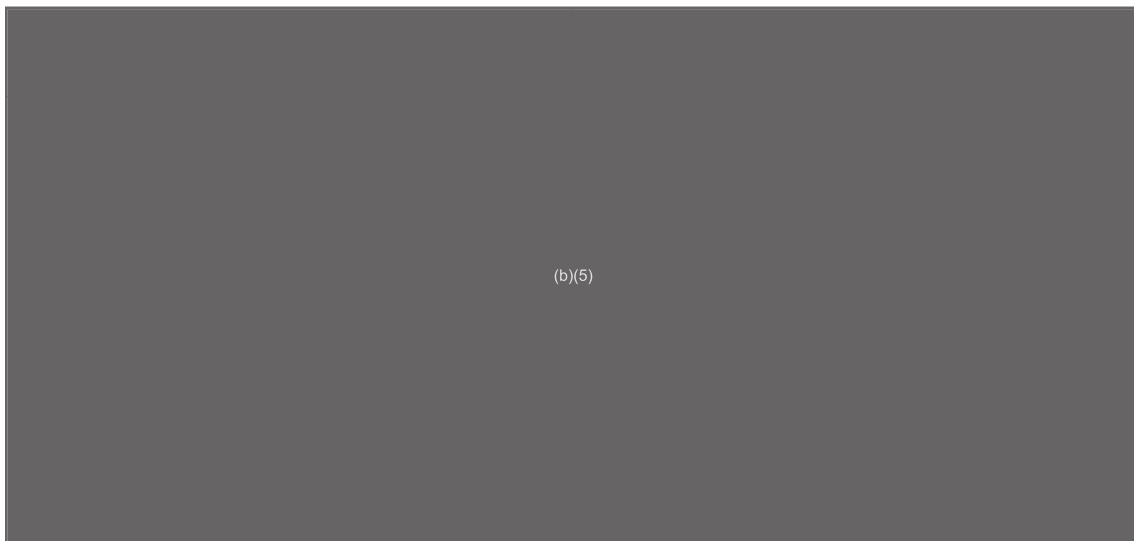
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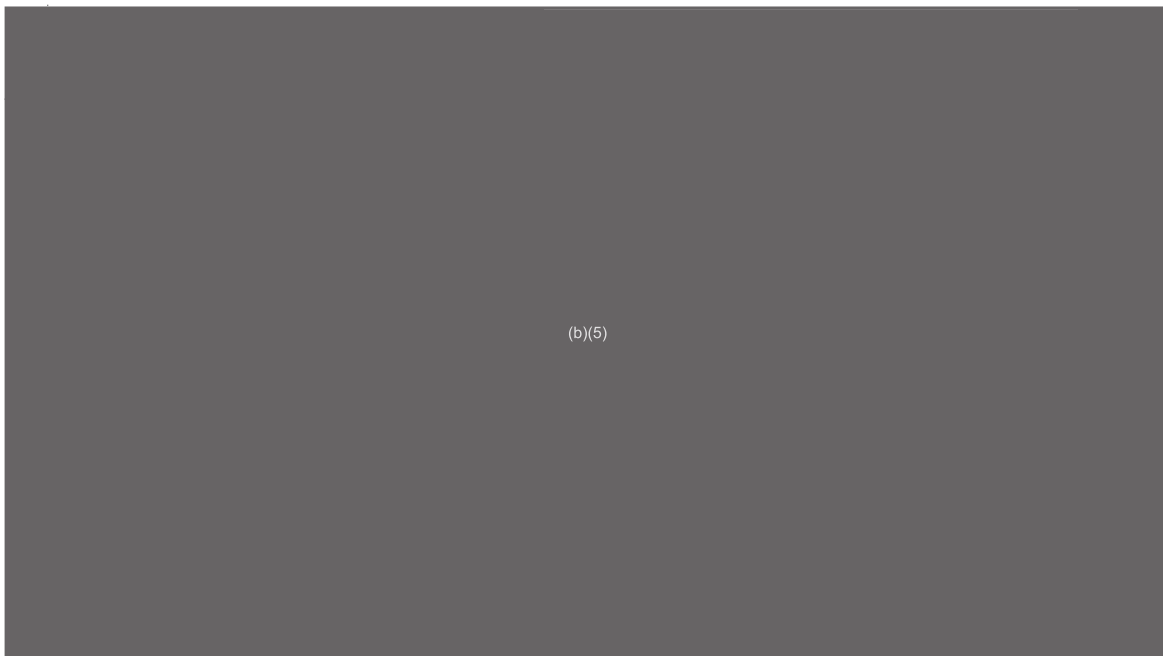


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Mr. Alessandro Amaglio

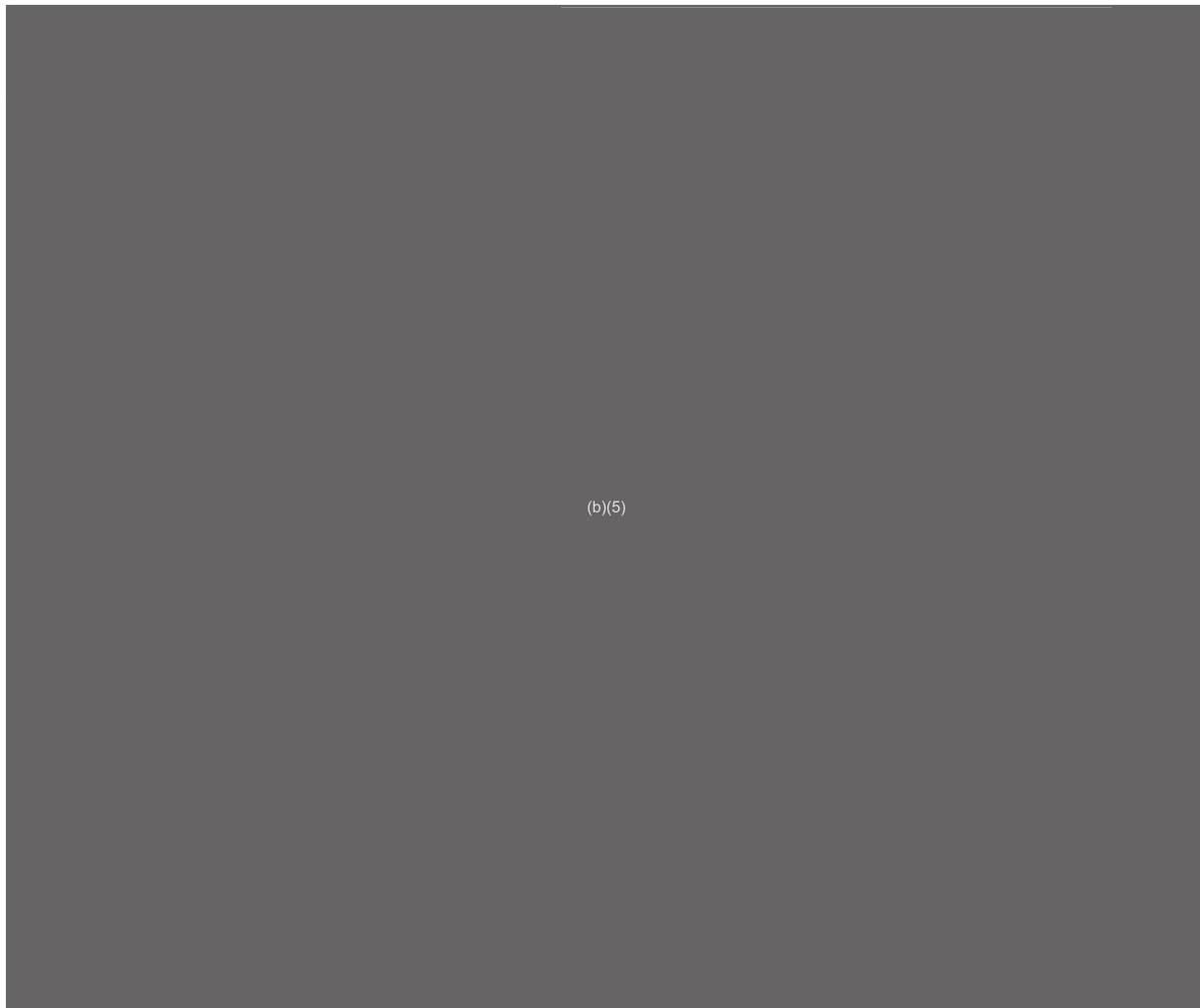
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Mr. Alessandro Amaglio

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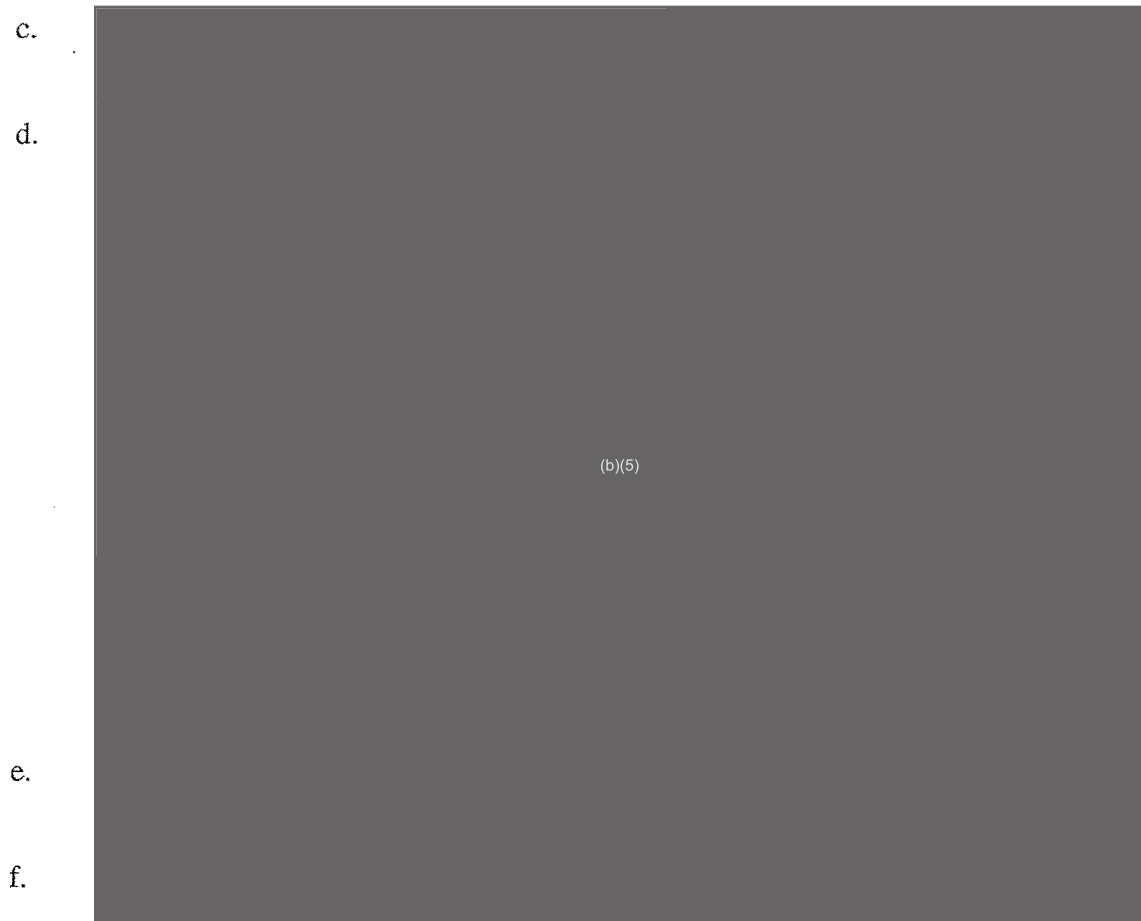
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Mr. Alessandro Amaglio

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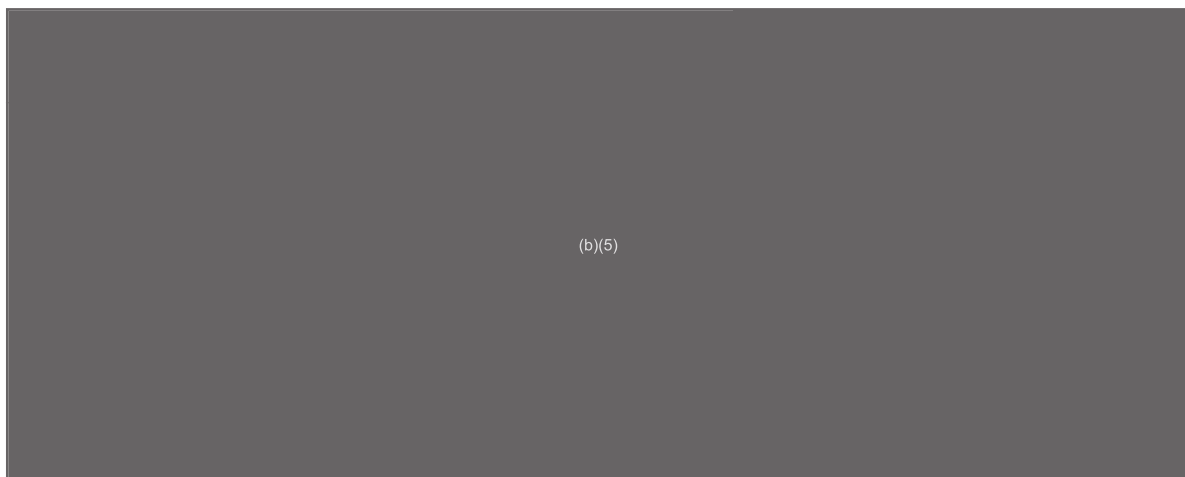


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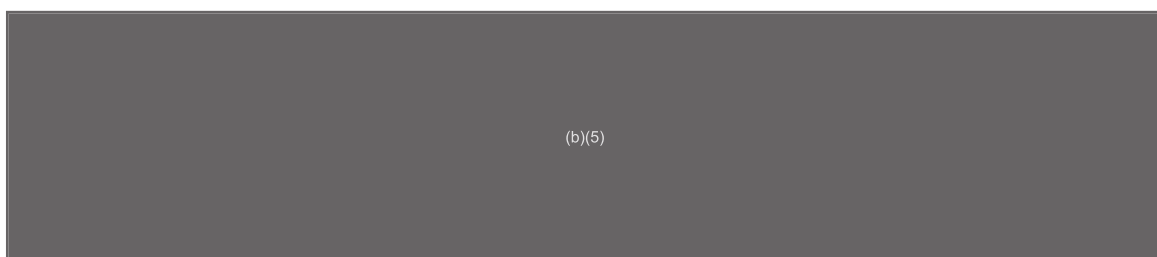
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Mr. Alessandro Amaglio

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Mr. Alessandro Amaglio

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Mr. Alessandro Amaglio

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As program specifics develop, we look forward to maintaining an open dialogue and providing additional comments and guidance on the FEMA Grants Program. If you have any questions or concerns regarding our initial comments and guidance on the proposed Grants Program, please contact [redacted], [redacted], or [redacted] at the letterhead address, telephone [redacted] or electronic mail ([redacted]@fws.gov, [redacted]@fws.gov, or [redacted]@fws.gov).

Sincerely,

(b)(6)

(b)(6)

Enclosure

cc:

[redacted] (b)(6), California Department of Fish and Game, Yountville, California



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
777 Sonoma Ave., Room 325  
Santa Rosa, California 95404-4731

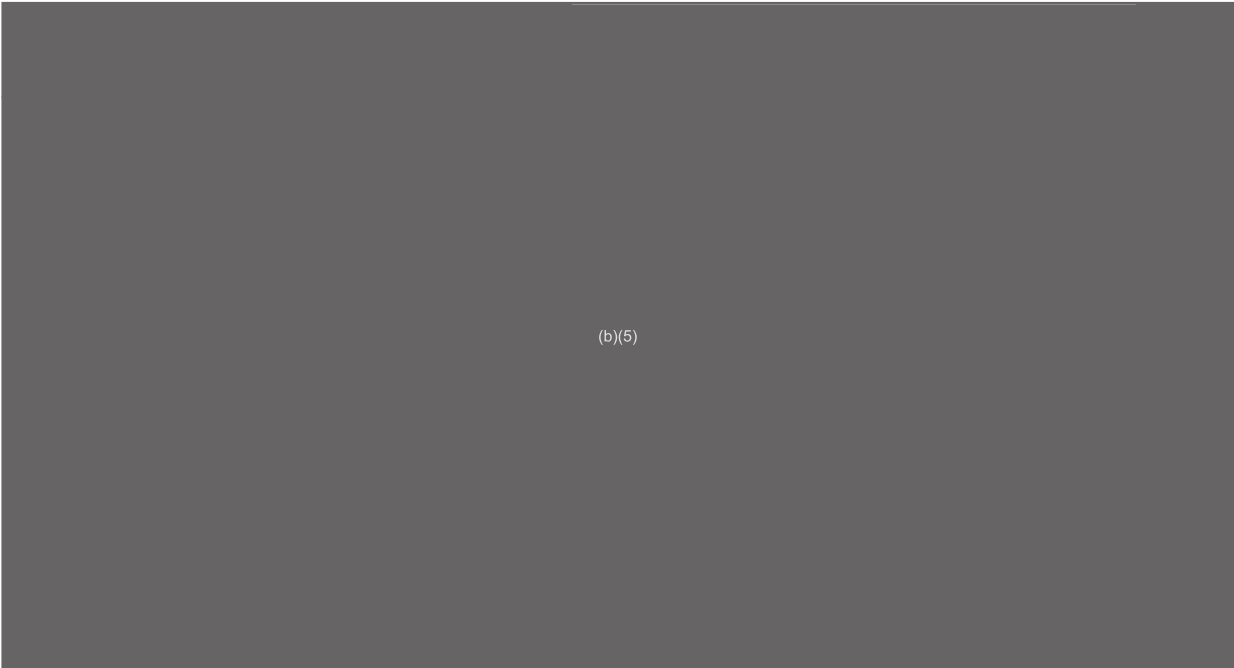
March 23, 2011

In response, refer to:  
SWR/F/SWR3:DH

Alessandro Amaglio  
Deputy Environmental Officer  
Federal Emergency Management Agency  
U.S. Department of Homeland Security  
1111 Broadway, Suite 1200  
Oakland, California 94607-4052

Dear Mr. Amaglio:

Thank you for the opportunity to comment on the Federal Emergency Management Agency's (FEMA) preparation of an Environmental Impact Statement (EIS) for the East Bay Hills Hazardous Fire Risk Reduction Program. FEMA is considering financial support for four wildfire mitigation grant application projects in the Wildland/Urban Interface of the East Bay Hills in Alameda and Contra Costa counties, California. NOAA's National Marine Fisheries Service (NMFS) has agreed to be a cooperating agency, pursuant to the National Environmental Policy Act (NEPA), for FEMA's preparation of this EIS. The EIS will cumulatively assess proposed vegetation management fire risk reduction projects in the East Bay Hills.



(b)(5)



If you have questions concerning these comments, please contact [REDACTED] of my staff at [REDACTED] or [REDACTED]@noaa.gov.

Sincerely,

[REDACTED]  
(b)(6)

[REDACTED]  
(b)(6)

Protected Resources Division

cc: [REDACTED] – NMFS, Long Beach, California  
[REDACTED] - NMFS, Sacramento, California  
[REDACTED] - FWS, Sacramento, California  
Donna Meyer – FEMA, Oakland, CA

**Amaglio, Alessandro**

---

**From:** [REDACTED]@fws.gov  
**Sent:** Monday, March 28, 2011 12:13  
**To:** Amaglio, Alessandro  
**Cc:** Meyer, Donna; [REDACTED]@fws.gov; [REDACTED]@urscorp.com; [REDACTED]  
[REDACTED]@URSCorp.com; [REDACTED]@fws.gov; [REDACTED]@URSCorp.com  
**Subject:** Pallid Manzanita Management Issue

Hi Sandro,

[REDACTED]

(b)(5)

Thank you,

[REDACTED]

[REDACTED]

Recovery Branch  
Sacramento Fish and Wildlife Office  
U. S. Fish and Wildlife Service  
2800 Cottage Way, Room [REDACTED]  
Sacramento, CA 95825-1846  
Phone: [REDACTED]

"Amaglio, Alessandro"  
<alessandro.amaglio@dhs.gov>

03/28/2011 12:19 PM

To <[redacted]@fws.gov>  
cc "Meyer, Donna" <Donna.Meyer@dhs.gov>, <[redacted]@fws.gov>, <[redacted]@urscorp.com>, <[redacted]@URSCorp.com>, <[redacted]@URSCorp.com>, <[redacted]@fws.gov>, <[redacted]@URSCorp.com>  
Subject RE: Pallid Manzanita Management Issue

Thank you, [redacted]

I understand your concerns.

Does the long-term agreed upon management plan affect in any way what is currently proposed under FEMA grant (and USFS-BLM one for that matter)? If so, we need probably to reconcile the two as adjustment to the sow, I think.

I am out of the office this week but generally available, with few exceptions. Why don't you and Lorena set up a call and I will try to call in if available?

Thank you again for all your assistance on this project.

Sandro

**From:** [redacted]@fws.gov [mailto:[redacted]@fws.gov]  
**Sent:** Monday, March 28, 2011 12:13 PM  
**To:** Amaglio, Alessandro  
**Cc:** Meyer, Donna; [redacted]@fws.gov; [redacted]@urscorp.com; [redacted]@URSCorp.com; [redacted]@fws.gov; [redacted]@URSCorp.com  
**Subject:** Pallid Manzanita Management Issue

Hi Sandro,

(b)(5)

Thank you,



**Amaglio, Alessandro**

---

**From:** Rob Griffith [rogriffith@fs.fed.us]  
**Sent:** Thursday, February 03, 2011 12:09  
**To:** [REDACTED]@URSCorp.com  
**Cc:** Amaglio, Alessandro; [REDACTED]@URSCorp.com; Meyer, Donna; [REDACTED]@URSCorp.com  
**Subject:** Re: Statement of Expectations  
**Attachments:** Statement of Expectations 2.3.11.docx

(b)(5)

Thanks,

-- Rob

Rob Griffith  
Assistant Director  
R5 Fire and Aviation Management Staff

(707) 562-8695 office  
[REDACTED] cell



# EXHIBIT K

**DR-1731**

**Hazard Mitigation Grant Program  
East Bay Regional Park District  
Brushing Fuels Management**

**PROJECT  
Instructions  
&  
Application**

***O E S***  
CALIFORNIA



***Governor's Office of  
Emergency Services***

**HAZARD MITIGATION GRANT PROGRAM  
GENERAL INFORMATION  
DR-1731**

Please read the following instructions prior to completing the Hazard Mitigation Grant Program (HMGP) application. Accurate and complete answers are necessary for determining eligibility and expediting the review of your application. If you have additional questions while completing the application, please call the Hazard Mitigation Branch at (916) 845-8150, Monday - Friday, 8:00am - 4:00pm.

### Introduction

As a result of the declaration of a major federal disaster for DR-1731, the State of California is eligible for HMGP funding. Declared counties include Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, and Ventura.

Hazard mitigation activities are aimed at reducing or eliminating future damages. Activities include hazard mitigation plans approvable by the Federal Emergency Management Agency (FEMA) and cost-effective hazard mitigation projects.

Federal funding is provided under the Robert T. Stafford Emergency Assistance and Disaster Relief Act (Stafford Act) through FEMA and the State of California Governor's Office of Emergency Services (OES). OES is responsible for identifying program priorities, reviewing applications and forwarding recommendations for funding to FEMA. FEMA has final approval for activity eligibility and funding.

The federal regulations governing the HMGP are found in Title 44 of the Code of Federal Regulations (44CFR) Parts 201, 206, and 13.

Only activities approved through the Notice of Interest (NOI) process can be submitted as subgrant applications for funding consideration under DR-1731. **The NOI submission deadline was Friday May 30, 2008.** The NOI process identified activities that meet HMGP eligibility criteria and are consistent with the state's pre-established priorities for this program. These priorities are identified in the NOI instruction material.

### Elimination Criteria

All applications must be submitted by 5:00 pm August 29, 2008.

1. Benefit/Cost Ratios: Project with a BCR of less than 1.0 will not be considered.
2. Local Hazard Mitigation Plan (LHMP) Requirement: A FEMA-approved and locally adopted LHMP is required to receive federal funds for any project application activity. Subgrant applicants must have a FEMA approved locally adopted LHMP by the August 29, 2008, application deadline.
3. Federal Requested Share: OES will not accept applications for activities with a requested federal share that exceeds \$4 million for project activities.
4. Performance Period: OES will not accept applications for activities with performance periods exceeding 36 months from date of FEMA application approval.
5. Data Documentation Template: Benefit Cost Analyses must have a completed DDT in order to establish credibility of BCA.
6. OES-Approved NOI: Each application must match with an OES-approved NOI. If you did not receive notification from OES that the activity described in an NOI submitted by the subgrant applicant was approved, do not submit an application for the activity.
7. Copies: Applicant must provide two complete applications, including all attachments, and CD's, as separately grouped packages. One to OES files, one as the submittal to FEMA.

**Other Important Eligibility Considerations:** The following are also important considerations in determining the eligibility of activities.

- A. Completed activities and activities under construction are not eligible for funding.
- B. Applications that are incomplete, do not conform to pre-established priorities, are not consistent with state and federal HMGP regulations, or do not meet elimination criteria will not be considered.
- C. HMGP funds cannot be used as a substitute or replacement to fund activities or programs that are available under other federal authorities.
- D. Funds are provided on a 75/25 cost share basis: 75 percent federal and 25 percent non-federal. Matching funds must be identified and secured in the application when submitted. A match commitment letter must be submitted with to OES with the application and signed by an authorized agent of the subgrant applicant that provides assurance to OES that the subgrant applicant will provide the required matching funds.
- E. HMGP funds cannot be used as matching funds for other federal funds.

## Ranking Criteria

Following state review, applications will be ranked based on the following criteria:

### **1. Project Activities:**

- a. The benefit/cost ratio of the project. Applications with a higher benefit/cost ratio will receive a higher ranking factor. OES will review the Benefit Cost Analysis (BCA), Data Documentation Template, and supporting documentation for accuracy and credibility.
- b. The federal share requested. Applications requesting higher federal share amounts will receive a higher ranking factor.
- c. The time needed to implement the project. Projects that can be completed in the least amount of time will receive a higher ranking. Factors will include the project schedule, the complexity of the environmental review and the current stage of project planning.
- d. The capability of the applicant to complete the project as requested. Applicants that have the best history of completing mitigation grant projects on time and within budget will receive a higher ranking factor.
- e. Number of Community Mitigating Factors, e.g. Community Rating System participant, Firewise Community, Co-operating Technical Partners, International Building Code adoption, National Fire Code Adoption, and Building Code Effectiveness Grading Schedule (BCEGS).
- f. Complete and detailed description of the scope of work. The project description and scope of work includes dimensions, areas, and volumes in enough detail to fully describe the project.
- g. The scope, budget, schedule and BCA are consistent.
- h. The application includes a budget narrative, maps that describe the location and the project site, preliminary engineering drawings, and a maintenance agreement that describes responsibilities for maintaining the project.
- i. Adoption of LHMP as part of General Plan Safety Element (Assembly Bill AB 2140)
- j. All applicable environmental questions have been answered or noted as Not Applicable.

## Application Format

To expedite the review process, OES requires that the following format be used for application submission:

Two complete applications must be submitted to OES. One completed application consists of the following

1. A printed (hard-copy) application.
  - A hard-copy of any documents (clearly labeled) referred to in the application (e.g., maps, environmental or historical reports, etc.).
  - A table of contents for the application and attachments.
  - The application and table of contents on a Compact Disc (CD). Include attachments on the CD if electronically possible.
  - For maps, plans, and documents of varying size, clearly label items and place inside a file folder.

2. Prepare a second complete application as described in 1. above.

Each of the two complete applications with attachments and CD must be separately packaged. One complete copy will be forwarded to FEMA for its review and final determination and the other logged-in to QES files for your protection if FEMA's copy is lost.

Mail or deliver completed applications to:

Governor's Office of Emergency Services  
 Hazard Mitigation Branch  
 Grant Programs Section—Attention 1781  
 3650 Schriever Avenue  
 Mather, CA 95655

## Deadlines

Applications must be received by 5:00 p.m. August 29, 2008, or postmarked by August 29, 2008. Applications postmarked later than August 29, 2008, will not be accepted. Applicants are encouraged to submit applications as soon as they are complete. Eligible applications that meet program priorities will be forwarded to FEMA for final determination.

## Organization of the Application

The application package is organized into eight main sections as follows:

### **PART I: ACTIVITY INFORMATION**

|          |       |                                                    |
|----------|-------|----------------------------------------------------|
| SECTION: | I.    | State Information                                  |
|          | II.   | Subgrant Applicant Information                     |
|          | III.  | Project Information                                |
|          | IV.   | Work Schedule                                      |
|          | V.    | Cost Estimate                                      |
|          | VI.   | Benefit / Cost Effectiveness                       |
|          | VII.  | Project Compliance Assurance (State of California) |
|          | VIII. | Maintenance Assurance Description                  |
|          | IX.   | Public Notice                                      |
|          | X.    | National Flood Insurance Program (NFIP)            |
|          | XI.   | General Comments                                   |

### **PART II: ENVIRONMENTAL QUESTIONNAIRE**

|          |      |                                                       |
|----------|------|-------------------------------------------------------|
| SECTION: | I.   | Regulations                                           |
|          | II.  | Environmental Checklist                               |
|          | III. | Project Conditions and Assurances                     |
|          | IV.  | Other Possible Environmental Laws                     |
|          | V.   | Alternatives                                          |
|          | VI.  | Administrative Documents:                             |
|          |      | Authorization                                         |
|          |      | Match Commitment Letter                               |
|          |      | Subgrantee Assurances                                 |
|          |      | Acquisition / Relocation / Elevation additional Forms |
|          |      | Budget Line-Item Samples                              |



**IMPORTANT ADDITIONAL REQUIREMENTS:**

1. WHEN USING THIS FORM, IMMEDIATELY "SAVE AS" A NEW DOCUMENT IN ORDER TO MAINTAIN THE INTEGRITY OF THE ORIGINAL FORM.
2. SAVE TO A CD ANY DOCUMENTS THAT ARE PERTINENT TO THE APPLICATION. DOCUMENTS MUST BE IN VERSION WORD 97 OR ABOVE, PDF, OR EXCEL.
3. WHEN ATTACHMENTS ARE INCLUDED WITH YOUR APPLICATION, A TABLE OF CONTENTS MUST BE INCLUDED. THE TABLE OF CONTENTS MUST LIST A FILE NAME AND CLEARLY REFERENCE THE QUESTION IT ANSWERS IN THE APPLICATION. THE TABLE OF CONTENTS AND ATTACHMENTS SHOULD BE ADDED AFTER PART II - ENVIRONMENTAL QUESTIONNAIRE.
4. THE STATE IS REQUIRING THAT SUBGRANT APPLICANTS PROVIDE A BENEFIT/COST ANALYSIS (BCA) WITH PROJECT APPLICATIONS ON THE CD. The BCA must be in the original Excel format, not PDF.
5. HARD COPIES OF ANY INFORMATION NOT AVAILABLE ELECTRONICALLY (E.G. MAPS, CONSTRUCTION PLANS, ETC.) MUST BE SENT TO OES WITH THE APPLICATION MATERIALS.
6. CONTACT THE HAZARD MITIGATION BRANCH AT (916) 845-8150 IF YOU HAVE ANY QUESTIONS.
7. MAIL THE COMPLETED APPLICATION, BENEFIT/COST ANALYSIS AND ALL ADDITIONAL ELECTRONIC DOCUMENTS SAVED TO A CD, AND ALL HARD COPY DOCUMENTS TO THE HAZARD MITIGATION BRANCH BEFORE THE APPLICATION DUE DATE. DR-1731 APPLICATIONS ARE DUE AUGUST 29, 2008. INCOMPLETE OR LATE APPLICATIONS WILL NOT BE ACCEPTED.
8. **TEXT AND CHECK BOX INSTRUCTIONS:** THE FOLLOWING APPLICATION CONTAINS TEXT FIELDS REQUIRING EITHER AN ALPHA/NUMERIC RESPONSE OR A BOX TO CHECK. TEXT RESPONSE REQUIRES INSERTION OF YOUR CURSOR ON THE FIELD BOX AND A MOUSE CLICK. CHECK BOXES REQUIRE CURSOR INSERTION AND A DOUBLE CLICK TO OPEN A MENU ALLOWING YOU THE OPTIONS OF NOT CHECKED OR CHECKED. ACTIVATE KEYBOARD NumLock IN ORDER TO ENTER NUMERIC DATA.

**HAZARD MITIGATION GRANT PROGRAM  
APPLICATION INSTRUCTIONS  
DR-1731**

**PART I: ACTIVITY INFORMATION**

**SECTION I: STATE USE ONLY**

**SECTION II: SUBGRANT APPLICANT INFORMATION**

1. **SUBGRANT APPLICANT NAME:** Provide the name of the state or local government, private non-profit, or special district applying for grant funds.
2. **FIPS #:** Provide the Federal Identification Processing System (FIPS) number for the subgrant applicant. If you do not have a FIPS number, contact OES.
3. **DUNS#:** Provide the Data Universal Numbering System (DUNS) number. To obtain your DUNS number call 1-866-705-5711 for additional information.
4. **COUNTY:** Provide the name of the county in which the subgrant applicant is located.
5. **SUBGRANT APPLICANT TYPE:** Select one. Eligible applicants include state and local governments, special districts and private non-profit organizations. If your entity does not fall into one of these categories, you are not eligible to apply for HMGP funding.
6. **POLITICAL DISTRICTS:** Provide the numbers of the political districts for the subgrant applicant main office. If you only know the name of your political representatives, please call their office for the district numbers.
7. **CONTACT:** Provide the name, address, phone number, fax number and e-mail address for the person who will be the point of contact for OES. OES will contact this person with questions and/or requests for information.
8. **NFIP: National Flood Insurance Program Participation.**  
Contact your county or local floodplain administrator for LAST CAV(Community Assistance Visit) DATE
9. **ALTERNATE CONTACT:** Provide the name, address, phone number, fax number and e-mail address for the person who will be the alternate point of contact for OES.
10. **LOCAL HAZARD MITIGATION PLAN REQUIREMENT:** A FEMA-approved Local Hazard Mitigation Plan (LHMP) is required before the August 29, 2008, application due date.  
Cite section and page in the LHMP showing project conformance. Provide the name/title of the LHMP and if the Subgrant Applicant has participated in a multi-jurisdictional LHMP identify the name of the lead agency.

**SECTION III: PROJECT INFORMATION**

11. **PROJECT TITLE:** Must describe the same project as the Project Title in the approved Notice of Interest.
12. **PROJECT location:**
  - A. **Detailed location (include the legal description, latitude and longitude coordinates).** FEMA requires that all projects must be geo-coded using latitude and longitude (lat/long). The lat/long coordinates must be expressed in degrees to six decimal places (e.g., latitude 36.999221, longitude -109.044883.) If more than 10 coordinates are required, provide them on an attached document.

Identify the county where the activity occurs. If the activity occurs in more than one county, list all counties separated by commas.

For structural projects or projects that directly benefit structures, provide coordinates for each structure at either the front door of the structure or the intersection of the public road and driveway that is used to access the property.

For large activity areas, such as detention basins or vegetation management projects, the activity must be described by three or more coordinates that identify the boundaries of the project. The boundaries must include any area of potential environmental, historic or archaeological impact as well as service roads, staging areas, or off-site storage areas that will be utilized during the construction of the project. The polygon created by connecting the coordinates must encompass the entire project area.

13. **MAPPING REQUIREMENTS:** Clearly depict the project location. Include a vicinity map of the general area showing major roads. Aerial photographs may be used as vicinity maps. Prominently mark the project location on the vicinity map. Additionally, provide a detailed project map that clearly identifies the project boundaries. The detailed project map must show all lat/long coordinates previously provided. Both maps must have a north arrow and scale.
14. **DEED RESTRICTIONS THAT LIMIT FEDERAL FUNDING:** Indicate if there is a deed restriction or permanent conservation easement on the property at the project site that would prohibit federal disaster funding (e.g., a previously FEMA funded buy-out of a structure on this property).
15. **PUBLIC ASSISTANCE PROGRAM FUNDING:** List any Public Assistance Disaster Survey Reports (DSR) or Project Worksheets (PW) that were completed at the project location from previous disasters within the last 10 years.
16. **PROJECT DESCRIPTION:** All applications for project activities must be consistent with the sub-applicant's Local Hazard Mitigation Plan (LHMP). Please include at the least a conceptual drawing of your intended project. Sub-applicants must answer all questions 16 A. through G. Provide detailed answers/descriptions for each question. Applications that do not provide detailed descriptions of the proposed activity will not be considered for funding. Refer to Sample in Administrative Documents at end of Application - **THE PROJECT DESCRIPTION OR SOW NEEDS TO EXPLAIN THE FOLLOWING.**
  - A. **PROJECT TYPE:** Sub-Applicant **AT LEAST ONE PROJECT TYPE MUST BE SELECTED**  
 Flood: Elevation – Acquisition – Control (barriers, culverts, basins)  
 Fire : Vegetation Management – Fire Resistant Building Materials  
 Earthquake : Structural - Non-structural – Structural/Non-Structural
  - B. Describe the full scope of work (SOW) of the project in detail: (Provide dimensions, types and sizes of materials. Indicate whether the project is located in existing right-of-ways and/or in a previously disturbed area.
  - C. If the project involves ground disturbance, e.g., enlarging ditches or culverts, building footprints, diversion ditches, detention basins, etc., provide additional information as requested.
  - D. Describe in detail how the project reduces hazard effects and risks.
  - E. Describe any other projects which may be related to the proposed project. FEMA must look at all projects in order to determine a cumulative effect.
  - F. When will the total project be completed? (Indicate from Approval Date plus number of day, weeks, months, etc.)
  - G. Describe the problem you are attempting to solve and the expected outcome.
17. Re-state project county(s) AND Congressional District(s).
18. Use the check boxes to indicate what hazard(s) this project will protect against.
19. **HAZARD AND RISK ANALYSIS:** (1) In this section identify clearly and in detail the hazards and risks that the project will address. (2) Explain how each alternative would affect the risks identified. (3) Explain why the preferred alternative was selected. *The PART 2 - ENVIRONMENTAL QUESTIONNAIRE will require a detailed examination of the proposed project and Alternatives as a requirement of the Code of Federal Regulations and the National Environmental Policy Act (NEPA).*
  1. History (describe the hazards and risks to life, safety and improved property at least during the last 25 years in the PROJECT AREA.)



- 2. Alternatives: Briefly describe alternatives to your proposed project. Alternatives are typically No Action and one Alternative. *(Recommend Return To This Question After Completing PART 2 - ENVIRONMENTAL QUESTIONNAIRE)*
- 3. Proposed Action: Briefly describe your proposed project and why it was selected from the alternatives. *(Recommend Return To This Question After Completing PART 2 - ENVIRONMENTAL QUESTIONNAIRE)*

**SECTION IV: WORK SCHEDULE**

**PROPOSED WORK SCHEDULE:** The schedule must

- 1. Include all significant milestones and tasks (see Sample Milestone Schedule below). The application provides space for ten milestones. If more milestones are required, provide them on an attached document.
- 2. Show activity duration in months. Total duration must not exceed a 36-month performance period.
- 3. Show the duration in months for each milestone.
- 4. Provide a realistic appraisal of the time required to complete the project.

Sample Milestone Schedule for a Project Activity. (The schedule shown below is meant only as an example of the level of detail required for milestones provided.)

| Description                                                                       | Duration              |
|-----------------------------------------------------------------------------------|-----------------------|
| Survey                                                                            |                       |
| Design                                                                            |                       |
| Board Approval                                                                    |                       |
| Right of Way                                                                      |                       |
| Permits                                                                           |                       |
| Inspection                                                                        |                       |
| Site Preparation                                                                  |                       |
| Relocation of people or property                                                  |                       |
| Bidding                                                                           |                       |
| Board Approval                                                                    |                       |
| Construction                                                                      |                       |
| Construction sub-milestones are unique to the type of project. Add as appropriate |                       |
| Project Closeout                                                                  |                       |
| <b>TOTALS</b>                                                                     | <b>&lt; 36 months</b> |

The application provides space for ten milestones. If more milestones are required, provide them on an attached document.

**SECTION V: COST ESTIMATE**

**BUDGET CATEGORIES:** Provide a detailed breakdown of activity costs. Budget items should include project management, engineering and design, site acquisition, force account labor, contracts and construction costs. Typical planning activity categories include contract, mapping, printing, supplies, force account labor, etc. Include only those costs that are directly related to performing the mitigation activity. If additional work, such as remodeling, additions, improvements, are being done concurrently with the mitigation work, please do not include these costs in your budget. **Contingency (for your agency), miscellaneous, or other, are not eligible cost items.**

Contingency IN AN AWARDED CONTRACT IS anticipated. Do not include subgrantee administration fees in the activity budget. They are calculated separately and provided in addition to the costs of approved mitigation activities.

The cost estimate describes all anticipated costs for the proposed activity. Only eligible costs that are included in both the budget and the scope of work will be reimbursed. Any documentation that supports the budget must be attached to the application. Total costs must be consistent with the requested federal share plus the matching funds and must be consistent with the project cost in the Benefit Cost Analysis (BCA).

**Ineligible costs include grant administration, project maintenance, contingency, costs not associated with the scope of work, or any undefined line items such as "other" or "miscellaneous."**

The application provides space for ten budget line items. If more budget line items are required, provide them on an attached document.

Additional Line-Item nomenclature is included in two Samples found at the end of the Administrative Documents Section. The samples are only included to assist you in developing a credible budget.

**OES recommends that sub-applicants provide a budget narrative or justification. Describe in your narrative the line-items in your budget. A narrative often preempts funding agency (FEMA) questions about the project budget, and indicates the applicants careful project planning. This is a Ranking Factor. Enter your Narrative or Justification in the COST ESTIMATE COMMENTS at the end of this SECTION V. or include with this application as a separate document. If your budget includes Force Account Personnel (your agency) include in the narrative those personnel titles, and hourly salary plus benefits for a total hourly cost.**

**FEDERAL/NON-FEDERAL SHARE.** HMGP funding is restricted to a maximum of \$4 million federal share for each project application and \$200,000 for planning applications. FEMA will contribute up to 75 percent of the total project cost. A minimum of 25 percent of the total eligible costs must be provided from a non-federal source. However, a greater than 25 percent non-federal share is allowable. For example, on a \$10,000,000 total project cost, the federal requested share cannot exceed \$4,000,000; therefore, the non-federal match provided must be \$7,000,000. The sum of the non-federal and federal shares must equal the total project cost.

**NON-FEDERAL MATCH SOURCE:** The non-federal source of matching funds must be identified by name and type. If "other" is selected for funding type, provide a description. The words "General Fund" is not sufficient. Provide the date of availability for all matching funds and the date of the Funding Match Commitment Letter (see attached sample form letter at THE Administrative Documents). If there is more than one non-federal funding source, provide the same information for each source on an attached document. Requirements for in-kind (donated) contributions can be found in 44 CFR 13.24.

## SECTION VI: BENEFIT / COST EFFECTIVENESS

A benefit/cost analysis (BCA) is required for all mitigation project applications and must be completed by the applicant using the FEMA-approved software. The Mitigation BCA Toolkit is free and available at [pchelp@hhs.gov](mailto:pchelp@hhs.gov) or toll free at 866-222-3580. Project BCAs must demonstrate cost-effectiveness through a Benefit/Cost Ratio (BCR) of 1.0 or greater. Projects with a BCR of less than 1.0 will not be considered for funding. Once the BCA is completed, enter the net present value of benefits, the total project cost estimate and the BCR in the fields provided. All values used in the BCA must be documented.

ALL BENEFIT COST ANALYSES SUBMITTED MUST HAVE A DATA DOCUMENTATION TEMPLATE (DDT)

DDT's are located in the BCA Toolkit. Each BCA model has its own DDT.

A DATA DOCUMENTATION TEMPLATE IS REQUIRED AND ITS SUBMITTAL AND CREDIBILITY A RANKING FACTOR

## SECTION VII – INTENTIONALLY LEFT BLANK

## SECTION VIII – MAINTENANCE ASSURANCE DESCRIPTION

FEMA must have written assurances that this project activity will be maintained once completed. Sub-applicants must attach a maintenance plan or agreement that identifies the maintenance tasks, work schedule, the associated budget, and the entity or department that will perform the long-term maintenance. Maintenance of projects is not an eligible grant cost but must be included in your BCA.

Please Note: Although a maintenance cost associated with a project is not an eligible budget item, an increased maintenance cost caused by the proposed project must be included in the BCA. Some projects do not have an increased cost and some projects actually decrease maintenance costs. Explain if your maintenance remains the same, increases, or decreases.

## SECTION IX – PUBLIC NOTICE

## SECTION X – NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

Information must be obtained from the floodplain manager in the jurisdiction/community where the project is located.

## SECTION XI – GENERAL COMMENTS

There are three fields to enter any additional information about your project not addressed elsewhere in this application: General Comments, Cost Comments, or Environmental Comments.

## PART II : ENVIRONMENTAL QUESTIONNAIRE

**AFTER COMPLETION OF PART I PROJECT APPLICATION CONTINUE TO PART II, ENVIRONMENTAL QUESTIONNAIRE: THE ENVIRONMENTAL QUESTIONNAIRE PART II MUST BE COMPLETED AND SUBMITTED WITH ALL PROJECT ACTIVITY APPLICATIONS**

### PART II: ENVIRONMENTAL QUESTIONNAIRE

|         |     |                                                       |
|---------|-----|-------------------------------------------------------|
| SECTION | I   | Regulations                                           |
|         | II  | Environmental Checklist                               |
|         | III | Project Conditions and Assurances                     |
|         | IV  | Other Possible Environmental Laws                     |
|         | V   | Alternatives                                          |
|         | VI  | Administrative Documents:                             |
|         |     | Authorization                                         |
|         |     | Match Commitment Letter                               |
|         |     | Subgrantee Assurances                                 |
|         |     | Acquisition / Relocation / Elevation additional Forms |
|         |     | Budget Line-Item Samples                              |
|         |     | Narrative - Who, What, When, Where, Why               |
|         |     | Fire – Vegetation Management Required Letter Sample   |

**END OF INSTRUCTIONS**

## **NEMIS STATE PROJECT APPLICATION**

### **PART 1 APPLICATION INFORMATION**

**THIS IS PART 1 – PROJECT INFORMATION FOR THE NEMIS STATE PROJECT APPLICATION FORM (GENERIC) TO BE USED WHEN SUBMITTING A PROJECT THROUGH THE STATE FOR THE HAZARD MITIGATION GRANT PROGRAM.**

1. **WHEN USING THIS FORM, IMMEDIATELY "SAVE AS" A NEW DOCUMENT IN ORDER TO MAINTAIN THE INTEGRITY OF THE ORIGINAL FORM.**
2. **USE THE MOUSE TO MOVE FROM FIELD TO FIELD WHEN INSERTING DATA.**
3. **SAVE TO A CD THIS APPLICATION AND ANY DOCUMENTS THAT ARE PERTINENT TO THE APPLICATION OR THOSE REQUESTED BY THE STATE OR FEMA.**
4. **CD MUST BE IN VERSION WORD 97 SR-1 OR ABOVE OR WORDPERFECT 6.0 OR ABOVE.**
5. **CONTACT THE STATE HAZARD MITIGATION OFFICE (916) 845-8150 IF YOU HAVE ANY QUESTIONS.**
6. **MAIL TWO CD's , TWO PRINTED APPLICATIONS, AND TWO OF ALL ATTACHMENTS TO THE STATE HAZARD MITIGATION OFFICE WHEN APPLICATION IS COMPLETED. Refer back to Page 3 of Instructions, Application Format, for details.**

**Governor's Office of Emergency Services  
Hazard Mitigation Branch  
Grant Programs Section – Attention 1731  
3650 Schriever Avenue  
Mather, CA 95655**

7. **STATE is APPLICANT and GRANTEE**

**LOCAL AGENCY is SUB-APPLICANT and SUB-GRANTEE**



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**STATE PROJECT APPLICATION FORM**

DR NO **1731**

STATE: **CA**

PROJECT NO. TBD



**SECTION I - STATE INFORMATION**

**GRANTEE INFORMATION (IF APPLICABLE)**

GRANTEE: > **Governor's Office of Emergency Services**

FIPS CODE: > **000-92250**

CONTACT: NAME: > **TBD**

TITLE: > **TBD**

ORGANIZATION: > **Hazard Mitigation Branch**

ADDRESS: > **3650 Schriever Avenue**

CITY: > **Mather**

STATE: > **CA** ZIP CODE: > **95855**

DIRECTIONS: >

LONGITUDE: > **-121.30505W**

LATITUDE: > **39.57100N**

TELEPHONE: > **916-845-8150** FAX NO: > **916-845-8385**

E-MAIL ADDRESS: >

PROJECT CONFORMS TO ITEM > #

in the State's Multi-hazard Mitigation Plan (if necessary also list which annex of the plan in the shaded text box.)

According to the State's Multi-hazard Mitigation Plan, PROJECT IS PRIORITY > #

STATE LEGISLATIVE DISTRICT: > **ALL**

a. Navigate through this form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**THIS PAGE FOR SUB-APPLICANT USE**

**SECTION II - SUB-APPLICANT INFORMATION**

**SUBGRANTEE INFORMATION**

1. SUBGRANTEE: >East Bay Regional Park District

2. FIPS #: >001-91010

3. DUNS #: >076292515

4. COUNTY: >Alameda

5. TYPE: GOVERNMENT  INDIAN TRIBE  PRIVATE NON-PROFIT  OTHER

6. POLITICAL DISTRICT(S): CONGRESSIONAL 7, 10, 9, 13, 11  
 STATE ASSEMBLY 11, 14, 15, 16, 18, 20  
 STATE LEGISLATIVE 7, 9, 10

7. CONTACT NAME Mr / Ms: >Mr First: >Jeff Last: >Rasmussen  
 TITLE: >Grants Manager  
 ORGANIZATION: >East Bay Regional Park District  
 ADDRESS: >P.O. Box 5391  
 CITY: >Oakland  
 STATE: >CA ZIP CODE: >94605  
 LONGITUDE: >37.743523  
 LATITUDE: >-122.144265  
 TELEPHONE: >510-544-2204 FAX NO: >510-569-1417  
 E-MAIL ADDRESS: >rasmussen@ebparks.org

8. NFIP PARTICIPATION  YES  NO LAST CAY DATE:

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**THIS PAGE FOR SUB-APPLICANT USE**

9. ALTERNATE CONTACT

NAME: Mr. / Ms. >  First >  Last >

TITLE: >

ORGANIZATION: >

ADDRESS: >

CITY: >

STATE >

ZIP CODE >

TELEPHONE: >

FAX NO. >

E-MAIL ADDRESS: >

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**STATE USE ONLY**

PLANS: A STATE MULTHAZARD MITIGATION PLAN MUST BE APPROVED ON BEFORE PLAN OR PROJECT FUNDING CAN BE APPROVED:

GRANTEE MULTHAZARD MITIGATION PLAN SUBMITTED:  APPROVED:

GRANTEE ADMINISTRATIVE PLAN SUBMITTED:  APPROVED:

**SUB-APPLICANT**

10. LHMP REQUIREMENT: A FEMA APPROVED and LOCAL AGENCY ADOPTED MULTHAZARD MITIGATION PLAN IS REQUIRED BY THE APPLICATION DUE DATE:

THESE PLANS ARE ALSO REFERENCED AS "LHMP" OR Local Hazard Mitigation Plan :

LHMP's are either Single Jurisdictional or Multi-Jurisdictional

LOCAL MULTI-JURISDICTIONAL MULTHAZARD PLAN:

DATE APPROVED BY FEMA:

DATE ADOPTED BY LOCAL AGENCY:

**OR**

LOCAL SINGLE JURISDICTIONAL MULTHAZARD MITIGATION PLAN: SUBMITTED:  APPROVED:

DATE APPROVED BY FEMA:

DATE ADOPTED BY LOCAL AGENCY:

Lead Agency: Association of Bay Area Governments (for multi-jurisdictional plans only)

Name/Title of your PLAN East Bay Regional Park District Local Hazard Mitigation Plan annexed to the Association of Bay Area Governments, Multi-Jurisdictional Hazard Mitigation Plan

State where in the approved Plan your proposed project is in conformance with the Plan.

CHAPTER: Chapter #1

PAGE: Page 7.

SECTION: Section INFR-c Wildfire



- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD:

**SECTION III - PROJECT INFORMATION**

11. PROJECT TITLE: **>EBRPD Brush & Grassland Fuels Management**

12. PROJECT LOCATION:

DETAILED LOCATION (include the legal description, latitude and longitude coordinates):

**>The project is located in the East Bay Hills of the San Francisco Bay. The project is adjacent to the communities of Richmond, Kensington El Cerrito, Berkeley, Albany, Oakland, San Leandro & Castro Valley. The latitude and longitude coordinates for the project are: 37.722388, 122.076377; 37.716875, 122.104535; 37.957400, 122.329998 and 37.964092, 122.265723. The project is on lands operated by the East Bay Regional Park District. The project is to be conducted in Tilden Regional Park, Wildcat Canyon Sobrante Ridge Regional Park, Sibley Regional Preserve, Huckleberry Regional Preserve, Leona Open Space, Redwood Regional Park, Anthony Chabot and Lake Chabot Regional Park.**

13. Attach or enclose Maps (USGS, City plat maps, aerial photos), photographs and diagrams that clearly depict the exact project location. Maps should be oriented with a North arrow.

**>See attached maps and pictures: Estimated Fuels Management Costs for PDM Brush Reduction Grant August 18, 2008 (File Name: Estimate & Maps, EBRPD Brushing Project, 2008-08-18.pdf)**

14. Is there a deed restriction or permanent conservation easement on the property at the project site that would prohibit federal disaster funding? (Was there a previously FEMA funded buy-out of a structure on this property?)

**>There are no deed restrictions or permanent conservation easements on the property that would prohibit federal funding.**

15. LIST ANY PUBLIC ASSISTANCE DISASTER SURVEY REPORTS (DSRs) or PROJECT WORKSHEETS (PWs) THAT WERE COMPLETED AT THE PROJECT'S LOCATION FROM PREVIOUS DISASTERS (ONLY WITHIN THE LAST 10 YEARS).

**>None**

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD

**16. PROJECT DESCRIPTION: REQUIRED**

**A. PROJECT TYPE:** Double Click the selected box. At least one must be selected.

- |                                                                                                                          |                                            |                                                         |
|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------|
| EQ-Structural <input type="checkbox"/>                                                                                   | EQ-Non-structural <input type="checkbox"/> | EQ Structural & Non_Structural <input type="checkbox"/> |
| Flood-Elevation <input type="checkbox"/>                                                                                 | Flood-Acquisition <input type="checkbox"/> | Flood-Control <input type="checkbox"/>                  |
| * Fire-Vegetation Management <input checked="" type="checkbox"/> Fire-Resistant Bldg. Materials <input type="checkbox"/> |                                            |                                                         |

\* if Veg. Mgmt. see Sample letter in Administrative Documents. This is a requirement if your project is within 1.5 mile of any federal land (BLM, NPS, UFS, etc.)

**B. DESCRIBE THE FULL SCOPE OF WORK (SOW) OF THE PROJECT IN DETAIL.** (Provide dimensions, types and sizes of materials. Indicate whether the project is located in existing right-of-ways and/or in a previously disturbed area. (either describe in 4,000 characters or less or attach/enclose separate WORD document))

**IF ANY DOCUMENTS ARE ATTACHED, STATE ITS EXACT TITLE .**

**> EBRPD would conduct vegetation management within 10 regional parks (Tilden Regional Park, Claremont Canyon Regional Preserve, Sibley Volcanic Regional Preserve, Huckleberry Regional Preserve, Redwood Regional Park, Anthony Chabot Regional Park, Leona Heights Regional Open Space and Lake Chabot).**

**Most of the proposed vegetation management activities would be implemented within smaller action areas within the project sites, so the actual acreage affected would be less than the total acreage of the sites. Types of vegetation management proposed for these sites include hand labor, small tree removal, mechanical treatments, prescribed burning, grazing, and chemical treatments. Most of the vegetation activities focus on removing nonnative species, French broom, and acacia, but shrubs, such as coyote bush and sage, would also be removed or reduced in height**

**See attached: HMGP 1731, Project Approach, EBRPD Brush Fuels Management Project (File Name: Project Approach, Brushing Fuels Management.doc)**

**C. IF THE PROJECT INVOLVES GROUND DISTURBANCE, E.G. ENLARGING DITCHES OR CULVERTS, DIVERSION DITCHES, DETENTION BASINS, STORMWATER IMPROVEMENTS, ETC. PROVIDE THE FOLLOWING ADDITIONAL INFORMATION:**

- a. Attach/enclose studies and preliminary engineering, including any hydrological data.
- b. Attach/enclose original drawings or blueprints that show the footprint and elevations

**IF ANY DOCUMENTS ARE ATTACHED, STATE ITS EXACT TITLE**

- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

➤ In general, work will be conducted outside of avian nesting and fledging season (March 15 – July 30) and outside of the wet season (Nov. 15 – April 15) unless a compelling reason indicated otherwise. For brush nearest the known habitat of the Alameda Whipsnake, the avoidance strategy will involve removal of the brush during the winter when the snakes are hibernating underground, then delaying the skidding of the brush until the following summer, when the snake is active and able to easily avoid and escape the machinery.

Some work may be conducted during avian nesting and fledging season if an avian survey is performed by a qualified biologist and no nesting is found in the area to be cut block, nor within 200 feet.

Some work contracts may be issued over winter allowing the contractor to remove brush by hand over the wet months, but delay skidding operations until the ground has dried. In this region, we often get stretches of dry weather over the winter where such operations are feasible, but it is not guaranteed. The benefit of this contracting approach is that prices can be very attractive when work is issued during normally slow times for the contractors, rather than during their peak work seasons when they can be overloaded with jobs and very selective and expensive.

It is expected that the cut blocks will begin at the bottom of the slope and the project will proceed upward over time. Subsequent cut blocks would be contiguous to those already completed, each with a clear path to the landing area.

See attached: HMGP 1731 Work Detail (File Name: Work Detail, Brushing Fuels Management.doc)

- D DESCRIBE IN DETAIL HOW THE PROJECT REDUCES HAZARD EFFECTS AND RISKS. (Either describe in 4,000 characters or less or attach/enclose separate WORD document.)

➤The goal of a program that is 45% effective is seen as viable. Fires will still occur but their damage will be reduced and the community more resilient. This overall program effectiveness goal accommodates the community members who resist changing their own homes to make them more resistant to ignition, and the areas of high fuel loads where other considerations, such as landslides or endangered species, limit mitigation actions. This 45% goal also recognizes that there are other effective mitigation actions necessary to reduce the potential damage to a community, such as suppression actions and water supplies.

The following effectiveness percentages were identified for each action within the three-prong strategy:

- |    |                                                        |     |
|----|--------------------------------------------------------|-----|
| 1. | Create fire-resistant communities                      | 20% |
| 2. | Create strategic fuel break systems                    | 10% |
| 3. | Reduce heavy vegetative fuel loads and restore forests | 15% |

See attached: Effectiveness of Treatments HMGP 1731 (File Name: Effectiveness of Treatments.doc)

- E DESCRIBE ANY OTHER PROJECTS OR PROJECT COMPONENTS, WHETHER OR NOT FUNDED BY FEMA, WHICH MAY BE RELATED TO THE PROPOSED PROJECT, OR ARE IN OR NEAR THE PROPOSED PROJECT AREA. FEMA MUST LOOK AT ALL INTERRELATED PROJECTS UNDER NEPA REGULATIONS. (Failure to disclose could jeopardize Federal funding.) (Either describe in 4,000 characters or less or attach/enclose separate WORD document.)

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

> Fuel management projects area currently planned by the City of Oakland, University of California at Berkeley and the East Bay Regional Park District has additional plans to conduct vegetation fuels management projects on its land. Funding and clearance for these projects vary. The City of Oakland and UC projects are funded and awaiting final approval before proceeding. East Bay Regional Park District has funding for the maintenance of existing fuel management areas but does not have resources or approvals to add areas of new fuels management.

See attached: Interrelated Fuels Management Projects in the East Bay Hills HMGP 1731 (File Name: Interrelated Fuels Management, HMGP 2008.doc)

F. WHEN WILL THE TOTAL PROJECT BE COMPLETED? (Indicate from Approval Date plus number of days, weeks, months etc.)  
(Either describe in 4,000 characters or less or attach/enclose separate WORD document)



- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

►The project will take three years to complete.

Year 1

Initial brush/weed/ladder fuel reduction using hand labor @ \$2000/acre = \$ 780,000

Initial herbicide application during brush reduction @ \$1000/acre = \$ 390,000

Debris removal by burning, chipping, or hauling off-site @ \$500/acre = \$ 195,000

Reseeding and/or rehab @\$100/acre = \$ 39,000

Year 2

Follow-up herbicide application @\$200/acre = \$ 78,000

Follow-up weed reduction using hand-labor or goats @\$1000/acre = \$ 390,000

Year 3

Follow-up herbicide application @\$100/acre = \$ 39,000

Follow-up weed reduction using hand-labor or goats @\$600/acre = \$ 234,000

Subtotal for 390 of 590 acres = \$2,145,000

For **200 acres** where terrain/access allows mechanical treatment:

Year 1

Initial brush/weed reduction using machinery @ \$1500/acre = \$ 300,000

Ladder fuel reduction @\$1000/acre = \$ 200,000

Reseeding and/or rehab @\$100/acre = \$ 20,000

Year 2

Follow-up herbicide application @\$400/acre = \$ 80,000

Follow-up weed reduction using hand-labor or goats @\$1000/acre = \$ 200,000

Year 3

Follow-up herbicide application @\$200/acre = \$ 40,000

Follow-up weed reduction using hand-labor or goats @\$600/acre = \$ 120,000

Subtotal for 200 of 590 acres = \$ 960,000

- G. DESCRIBE THE PROBLEM YOU ARE ATTEMPTING TO SOLVE AND THE EXPECTED OUTCOME.  
(Either describe in 4,000 characters or less or attach/enclose separate WORD document)

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- Reduce fire hazard on publicly-owned lands in the East Bay's wildland-urban interface to an acceptable level of risk
- Preserve aesthetic landscape values for park users and neighboring communities
- Provide a menu of options for wildfire fuels management and habitat restoration and maintenance to address a variety of topographic situations, vegetation types, available tools and techniques (such as hand removal, mechanical control, herbicide application, prescribed fire and grazing) over time
- Evaluate the environmental effects of various vegetation / fuels management options and describe procedures for maintaining optimal habitat and ecological function, and to minimize or mitigate the effects of vegetation management on defined species of concern

### FEMA USE ONLY

PROJECT TYPE: FEMA will further refine Project Type

### Selection of numerical Project Type is a FEMA Function

PRIMARY - Select the Primary Project Type

- |                       |                                                   |
|-----------------------|---------------------------------------------------|
| 90 SERIES             | <input type="checkbox"/> (press TAB or Highlight) |
| 100 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 200 to 202.4 SERIES   | <input type="checkbox"/> (press TAB or Highlight) |
| 203.1 to 204.4 SERIES | <input type="checkbox"/> (press TAB or Highlight) |
| 205.1 SERIES          | <input type="checkbox"/> (press TAB or Highlight) |
| 300 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 400 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 500 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 600 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 700 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 800 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |

2<sup>ND</sup> Select Secondary Project Type

- |                       |                                                   |
|-----------------------|---------------------------------------------------|
| 90 SERIES             | <input type="checkbox"/> (press TAB or Highlight) |
| 100 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 200 to 202.4 SERIES   | <input type="checkbox"/> (press TAB or Highlight) |
| 203.1 to 204.4 SERIES | <input type="checkbox"/> (press TAB or Highlight) |
| 205.1 SERIES          | <input type="checkbox"/> (press TAB or Highlight) |
| 300 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 400 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 500 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 600 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 700 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |
| 800 SERIES            | <input type="checkbox"/> (press TAB or Highlight) |

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

17. PROJECT COUNTY: >Alameda PROJECT COUNTY: >

PROJECT COUNTY: >Contra Costa

CONGRESSIONAL DISTRICT: >9, 10, 7

18. HAZARD TYPE: REQUIRED (WHAT HAZARD WILL THIS PROJECT PROTECT AGAINST?)

CHECK FROM THE FOLLOWING LIST (MORE THAN ONE CAN BE CHECKED)

- |                   |                                     |                  |                          |
|-------------------|-------------------------------------|------------------|--------------------------|
| BIOLOGICAL        | <input type="checkbox"/>            | CHEMICAL         | <input type="checkbox"/> |
| CIVIL UNREST      | <input type="checkbox"/>            | COASTAL STORM    | <input type="checkbox"/> |
| CROP LOSSES       | <input type="checkbox"/>            | DAM/LEVEE BREAK  | <input type="checkbox"/> |
| DROUGHT           | <input type="checkbox"/>            | EARTHQUAKE       | <input type="checkbox"/> |
| FIRE              | <input checked="" type="checkbox"/> | FISHING LOSSES   | <input type="checkbox"/> |
| FLOOD             | <input type="checkbox"/>            | FREEZING         | <input type="checkbox"/> |
| HUMAN CAUSE       | <input type="checkbox"/>            | HURRICANE        | <input type="checkbox"/> |
| LAND SUBSISTENCE  | <input type="checkbox"/>            | MUD/LANDSLIDE    | <input type="checkbox"/> |
| NUCLEAR           | <input type="checkbox"/>            | SEVERE ICE STORM | <input type="checkbox"/> |
| SEVERE STORM(S)   | <input type="checkbox"/>            | SNOW             | <input type="checkbox"/> |
| SPECIAL EVENTS    | <input type="checkbox"/>            | TERRORIST        | <input type="checkbox"/> |
| TORNADO           | <input type="checkbox"/>            | TOXIC SUBSTANCES | <input type="checkbox"/> |
| TROPICAL CYCLONES | <input type="checkbox"/>            | TSUNAMI          | <input type="checkbox"/> |
| TYPHOON           | <input type="checkbox"/>            | VOLCANO          | <input type="checkbox"/> |

OTHER (SPECIFY IN COMMENTS)

>

19 HAZARD AND RISK ANALYSIS

1. HISTORY (describe the hazards and risks to life, safety and improved property at least during the last 25 years in the project area. (Describe in 4,000 characters or less or Attach/enclose/enclose if WORD document)

- e. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD

> Between 1923 and 1993, 14 major wildfires occurred in the east bay hills, burning over 11,000 acres, destroying 3,500 homes and causing 25 deaths. The 1991 Oakland Tunnel Fire set a tragic record only surpassed in by the Southern California fires. The 1991 fire still stands as the highest destruction of California homes per acre. The East Bay Hills' combination of hot dry summers, wind-conductive topography, flammable vegetation, dense urban development, limited fire-fighting access, and diablo winds comprises these continuing substantial regional fire dangers. Because no significant fire-engendered restrictions have been placed on development, fire safety can only be achieved through rigorous oversight and active management of the regional fuel loads. The project is located on the head slopes of heavily vegetated canyons immediately adjacent to large residential areas. The sites lay adjacent to Oakland and Berkeley, displaying similar fire risk conditions to the catastrophic 1991 Tunnel Fire. The dense non-native eucalyptus forests typical in the project area are extremely productive in terms of fuel load, with year-round shedding of leaves, small branches and bark. Hot winds during fire events can carry such material several miles as burning embers. Secondary spot fires and roof ignitions from these firebrands substantially increase fire range and values at risk. The project location is in the upper reaches of heavy wooded slopes immediately adjacent to the cities of Oakland and Berkeley, near the site of and displaying similar risk conditions to the catastrophic 1991 Tunnel Fire. That fire and its resultant losses were significantly increased by the wind-borne firebrand ignitions described above.

See attached: East Bay Hills Fire Hazard History HMGP 1721 (File Name: East Bay Fire Hazards.doc)

2. **ALTERNATIVES:** Briefly describe alternatives to your proposed project. Recommend return to this question after completing PART 2 - ENVIRONMENTAL QUESTIONNAIRE

>The second alternative to the project is to take no action. This alternative would allow the vegetation and fuel load to continue to increase and therefore increase the risk of catastrophic fire.

The third alternative is the use of cattle grazing to reduce vegetative fuel loads. This alternative involves the removal of brush, the construction of barbed wire fences to contain the cattle and the construction of water troughs and other infrastructure necessary for cattle operations. This alternative can be cost effective and is a popular method of vegetation fuel control in many areas around the Bay Area. However, the introduction of cattle near the homes of the East Bay Hills would be challenged by stiff opposition from neighboring home owners. In addition, the introduction of cattle would be a serious threat to rare plants in area and have significant impacts to water quality.

3. **PROPOSED ACTION:** Briefly describe your proposed project and why it was selected from the alternatives. Recommend return to this question after completing PART 2 - ENVIRONMENTAL QUESTIONNAIRE

>The proposed action was selected because it has the best chance for long term success. Brush removal and conversion to grass land is the best option for long term reduction of hazardous fuels. In addition to the reduction in fire danger the eradication of brush in these critical areas is the best alternative for improving the habitat for native plants and animals. The conversion of these brush fields to a mosaic of brush and grass lands will improve the quality of the environment for native species. This action is the most effective way to reduce fire risk and is very cost effective as documented by the Benefit Cost Analysis.



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

## SECTION IV - WORK SCHEDULE

(Enter proposed work schedule)

DESCRIBE THE MAJOR WORK ELEMENTS AND HOW LONG THEY WILL TAKE TO COMPLETE. Some Project Application examples are : construction, architectural, design, engineering, inspection, testing, permits, project management, mobilization and de-mobilization.

Some Plan Application examples may be deduced from your Scope Of Work

- |     |              |                                                                  |             |           |                         |
|-----|--------------|------------------------------------------------------------------|-------------|-----------|-------------------------|
| 1   | DESCRIPTION: | <u>Project Management</u>                                        | TIME FRAME: | <u>36</u> | (e.g., DESIGN 5 MONTHS) |
| 2.  | DESCRIPTION: | <u>Initial Mechanical Treatment</u>                              | TIME FRAME: | <u>12</u> |                         |
| 2.  | DESCRIPTION: | <u>Initial Brush Removal Using Hand Labor</u>                    | TIME FRAME: | <u>12</u> |                         |
| 4   | DESCRIPTION: | <u>Debris Removal Using Burning, Chipping or Hauling Offsite</u> | TIME FRAME: | <u>12</u> |                         |
| 5   | DESCRIPTION: | <u>Environmental Monitoring</u>                                  | TIME FRAME: | <u>36</u> |                         |
| 6   | DESCRIPTION: | <u>Herbicide Application</u>                                     | TIME FRAME: | <u>12</u> |                         |
| 7   | DESCRIPTION: | <u>Reseeding and Rehabilitation</u>                              | TIME FRAME: | <u>6</u>  |                         |
| 8   | DESCRIPTION: | <u>Follow up Weed Reduction Using Hand Labor &amp; Goals</u>     | TIME FRAME: | <u>12</u> |                         |
| 9   | DESCRIPTION: | <u>Reapplication of Herbicide</u>                                | TIME FRAME: | <u>2</u>  |                         |
| 10. | DESCRIPTION: | <u>Reapplication of Herbicide</u>                                | TIME FRAME: | <u>2</u>  |                         |

SOME OR MANY OF THE ABOVE ELEMENTS MAY OVERLAP.

IN COMBINATION, STATE THE AMOUNT OF TIME YOU ANTICIPATE THIS PROJECT TO TAKE FROM THE DATE OF GRANT APPROVAL. Should be the same as SECTION III, #16.F.

MONTHS: 36

COMMENTS:

EBRPD has demonstrated success in managing similar fuel reduction projects with successful completion of 27 such projects over the past 5 years. Our long term goal is to greatly reduce the fire risk along the entire interface between our parks lands and adjacent high risk developed areas.

- a. Navigate through the form by using the mouse to **HIGHLIGHT AND ENTER DATA IN EACH FIELD.**

**> Budget Narrative, East Hills Fuels Management**

For 390 acres where terrain is steep and/or access is difficult:

Year 1

Initial brush/weed/ladder fuel reduction using hand labor @ \$2000/acre = \$ 780,000

Initial herbicide application during brush reduction @ \$1000/acre = \$ 390,000

Debris removal by burning, chipping, or hauling off-site @ \$500/acre = \$ 195,000

Reseeding and/or rehab @\$100/acre = \$ 39,000

Year 2

Follow-up herbicide application @\$200/acre = \$ 78,000

Follow-up weed reduction using hand-labor or goats @\$1000/acre = \$ 390,000

Year 3

Follow-up herbicide application @\$100/acre = \$ 39,000

Follow-up weed reduction using hand-labor or goats @\$600/acre = \$ 234,000

Subtotal for 390 of 590 acres = \$2,145,000

For 200 acres where terrain/access allows mechanical treatment:

Year 1

Initial brush/weed reduction using machinery @ \$1500/acre = \$ 300,000

Ladder fuel reduction @\$1000/acre = \$ 200,000

Reseeding and/or rehab @\$100/acre = \$ 20,000

Year 2

Follow-up herbicide application @\$400/acre = \$ 80,000

Follow-up weed reduction using hand-labor or goats @\$1000/acre = \$ 200,000

Year 3

Follow-up herbicide application @\$200/acre = \$ 40,000

Follow-up weed reduction using hand-labor or goats @\$600/acre = \$ 120,000

Subtotal for 200 of 590 acres = \$ 960,000

Subtotal All 590 Acres = \$3,105,000

Biological Monitoring (10%) = \$ 310,500

Project Management (10%) = \$ 310,500

Total Project = \$3,726,000

**Project Management** – The project will be developed and administrated by an Administrative Analyst working for the East Bay Regional Park District Fire Department. This analyst will develop the project specifications, mapping and final work program necessary to complete the project. The Administrative Analyst for the East Bay Regional Park District Fire Department is paid \$29.65 per hour in wages and is paid \$29.65 in benefits.

**Environmental Monitoring** - Over the more recent years the U.S. Fish and Wildlife Service has required a full-time biological monitor on site during all construction activities. This practice is common not only on fuels management projects, but other types of construction projects as well. Sometimes the East Bay Regional Park District hires a consultant biologist to monitor projects, but in this case the District has qualified staff to fulfill this role. Biological monitoring for this project will be performed by a staff Biologist. The District's biologist is paid \$40.14 per hour in wages and is paid \$40.14 per hour in benefits.

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

## SECTION V – COST ESTIMATE

*Some categories for projected expenditures are: Project Management, Engineering & Design, (explain in detail under Cost Estimate Comments below), Accounting, Legal, Site Acquisitions, Labor, Materials & Supplies, Equipment, Staffing, Transportation, etc (Contingencies and administrative costs are NOT allowable costs).*

- A. Item name: **Project Management** (i.e. Design & Engineering)  
 Unit Qty: **1** Unit of Measure: .....Lump Sum Unit Cost: **310,500** Cost Estimate: **310,500**
- B. Item name: **Biological Monitoring**  
 Unit Qty: **1** Unit of Measure: .....Lump Sum Unit Cost: **310,500** Cost Estimate: **310,500**
- C. Item name: **Initial Brush/Weed Reduction Using Machinery**  
 Unit Qty: **200** Unit of Measure: .....Acre Unit Cost: **1,500** Cost Estimate: **300,000**
- D. Item name: **Initial Brush/Weed Reduction Using Hand Labor**  
 Unit Qty: **390** Unit of Measure: .....Acre Unit Cost: **2,521** Cost Estimate: **980,000**
- E. Item name: **Debris Removal by Burning, Chipping or Hauling**  
 Unit Qty: **590** Unit of Measure: .....Acre Unit Cost: **330** Cost Estimate: **195,000**
- F. Item name: **Herbicide Application**  
 Unit Qty: **590** Unit of Measure: .....Acre Unit Cost: **1,063** Cost Estimate: **627,000**
- G. Item name: **Reseeding/Rehabilitation**  
 Unit Qty: **1** Unit of Measure: .....Lump Sum Unit Cost: **59,000** Cost Estimate: **59,000**
- H. Item name: **Follow Up Weed Reduction Using Hand Labor or Goats**  
 Unit Qty: **590** Unit of Measure: .....Acre Unit Cost: **1,593** Cost Estimate: **941,000**

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

|   |            |                      |                                       |                                 |                                     |
|---|------------|----------------------|---------------------------------------|---------------------------------|-------------------------------------|
| 6 | Item name: | <input type="text"/> |                                       |                                 |                                     |
|   | Unit:      | <input type="text"/> | Unit of Measure: <input type="text"/> | Unit Cost: <input type="text"/> | Cost Estimate: <input type="text"/> |
| 7 | Item name: | <input type="text"/> |                                       |                                 |                                     |
|   | Unit:      | <input type="text"/> | Unit of Measure: <input type="text"/> | Unit Cost: <input type="text"/> | Cost Estimate: <input type="text"/> |

ENTER TOTAL PROJECT COST ESTIMATE:

**SPECIFY COST BREAKDOWN**

|                                           |                                                  |
|-------------------------------------------|--------------------------------------------------|
| APPLICANT SHARE                           | \$ <input type="text" value="001,500"/>          |
| FEDERAL SHARE (MAX 75% OF ELIGIBLE COSTS) | \$ <input type="text" value="2,794,500"/>        |
| <b>ESTIMATED TOTAL COST</b>               | <b>\$ <input type="text" value="3,726,000"/></b> |

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**MATCH SOURCES (NON-FED SHARE FUNDING)**

TOTAL PROJECT COST ESTIMATE: >\$ 3,726,000

PROPOSED FEDERAL SHARE: >\$ 2,794,500

FEDERAL SHARE PERCENTAGE: > 75 %

PROPOSED NON-FEDERAL SHARE: > 931,500

1. SOURCE AGENCIES: > (Select Local Agency Funding, Other Agency Funding, Private Non Profit or State Agency Funding)

SOURCE NAME: > East Bay Regional Park District Measure C Funding (Project Numbers 541200 through

Project Numbers 541703) and East Bay Regional Park District General Fund (Project Account Number 550000)



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

OTHER FUNDING TYPE DESCRIPTION: >None

FUNDS AVAILABILITY DATE: >August 28, 2006

FUNDS COMMITMENT LETTER DATE: >August 28, 2006



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

---

**NOTE: DOCUMENTATION REQUIRED FOR IN-KIND (Donated) MATCH.**

TOTAL PERCENT OF NON-FED SHARE > **75 %**

- Attach or enclose a **REQUIRED LETTER OF FUNDING COMMITMENT** from Subgrantee (see MISC for sample form).

**COST ESTIMATE COMMENTS:** (Either describe in 4,000 characters or less or Attach/enclose/enclose separate WORD document)

**> EBRPD's experience with completion of other fuels projects with a good working knowledge of the actual costs, which depend on fuel types, fuel loads, accessibility, and topography**



a Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**SECTION VI – BENEFIT / COST EFFECTIVENESS**

Complete the following information:

Most Projects will usually utilize one Benefit Cost Analysis (BCA). Use Enter BCA data # 1

**ALL BENEFIT/COST ANALYSES MUST HAVE A DATA DOCUMENTATION TEMPLATE (DDT)**

For those Projects employing more than one BCA, a Composite BCA is necessary.

The method for a Composite BCA is explained in the BCA Toolkit in Case Studies, Case 1 - Full Flood Data.

If the composite method is employed, enter the data requested for each BCA used for the composite.

For the Composite of those BCA's, enter the data as the last series, use the GRAY box, titling it COMPOSITE.

Enter BCA data # 1 > **Brushing BCA-01.xls**

| ENTER NET PRESENT VALUE OF BENEFITS BELOW: | ENTER TOTAL PROJECT COST ESTIMATE BELOW: | ENTER BENEFIT COST RATIO BELOW: |     |     | ENTER WHO PERFORMED BCA: |
|--------------------------------------------|------------------------------------------|---------------------------------|-----|-----|--------------------------|
| \$44,724,250                               | \$3,726,000                              | 9.731                           | --- | --- | Kenneth A. Goettel       |

Enter BCA data # 2: >

| ENTER NET PRESENT VALUE OF BENEFITS BELOW: | ENTER TOTAL PROJECT COST ESTIMATE BELOW: | ENTER BENEFIT COST RATIO BELOW: |     |     | ENTER WHO PERFORMED BCA: |
|--------------------------------------------|------------------------------------------|---------------------------------|-----|-----|--------------------------|
|                                            |                                          |                                 | --- | --- |                          |

Enter BCA data # 3: >

| ENTER NET PRESENT VALUE OF BENEFITS BELOW: | ENTER TOTAL PROJECT COST ESTIMATE BELOW: | ENTER BENEFIT COST RATIO BELOW: |     |     | ENTER WHO PERFORMED BCA: |
|--------------------------------------------|------------------------------------------|---------------------------------|-----|-----|--------------------------|
|                                            |                                          |                                 | --- | --- |                          |

Enter BCA data # 4: >

| ENTER NET PRESENT VALUE OF BENEFITS BELOW: | ENTER TOTAL PROJECT COST ESTIMATE BELOW: | ENTER BENEFIT COST RATIO BELOW: |     |     | ENTER WHO PERFORMED BCA: |
|--------------------------------------------|------------------------------------------|---------------------------------|-----|-----|--------------------------|
|                                            |                                          |                                 | --- | --- |                          |

Enter BCA data # 5: >

| ENTER NET PRESENT VALUE OF BENEFITS BELOW: | ENTER TOTAL PROJECT COST ESTIMATE BELOW: | ENTER BENEFIT COST RATIO BELOW: |     |     | ENTER WHO PERFORMED BCA: |
|--------------------------------------------|------------------------------------------|---------------------------------|-----|-----|--------------------------|
|                                            |                                          |                                 | --- | --- |                          |

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

INSERT ANSWERS TO THE FOLLOWING QUESTIONS WITHIN THE ACCOMPANYING SHADED FIELDS.

A. If Applicable - DESCRIBE DAMAGE CAUSED BY CURRENT or PREVIOUS DISASTER AND POTENTIAL FOR FUTURE DAMAGE

1. CURRENT/PREVIOUS DAMAGE:

DESCRIBE AS FOLLOWS:

YEAR      FREQUENCY OF EVENT      DAMAGES

>The East Bay hills have a long history of major wildland/urban interface fires. A synopsis of some of the major fires is given below:

### Fires in the Oakland - Berkeley Hills

The October 1991 "Tunnel" fire in the Berkeley- Oakland Hills which burned over 3,000 homes provided the impetus for the development of the Hills Emergency Forum. However, it was not the first major urban-wildland intermix fire in this region. Historically the East Bay has proven prone to wildland fire. The area's recorded fire history shows 16 major fires since the beginning of the twentieth century, along with numerous smaller fires. When mapped it becomes apparent that the fires often reoccur in the same general areas and show similar environmental conditions.

- October 1905 - Berkeley/North Oakland. 2 structures, 2,000 acres. Diablo wind. Ignition: unknown.
- September 1923 - Berkeley / North of UC Berkeley campus. 584 homes destroyed and 3000 acres. Diablo wind. Ignition: smoker.
- November 1931 - Leona. 5 homes destroyed, 1,800 acres burned. Diablo wind. Ignition: unknown.
- November 1933 - Redwood / Joaquin Miller. 1 life, 5 homes, 1,000 acres. Diablo wind. Ignition: smoker.
- September 1937 - Broadway Terrace. 4 homes, 700 acres. West wind. Ignition: backyard fire.
- September 1940 - Broadway Terrace. 30 acres. West wind. Ignition: unknown.
- September 1946 - Buckingham/ Norfolk. 1,000 acres. Diablo wind. Ignition: arson and rekindle.
- November 1955 - Montclair. 10 acres. West wind. Ignition: unknown.
- October 1960 - Leona. 2 homes, 1,200 acres. Diablo wind. Ignition: unknown.
- November 1961 - Tilden, Briones, 2 fires, 75 acres. South-west wind. Ignition: arson.
- November 1961 - Roberts & Chabot 325 Acres Diablo Ignition: arson
- October 1968 - Oak Knoll. 204 acres. West wind. Ignition: unknown.
- September 1970 - Buckingham/ Norfolk. 37 homes destroyed, 21 homes damaged, 240 acres. Diablo wind. Ignition: arson.
- December 1980 - Berkeley/ Wildcat. 5 homes, 8 acres. Diablo wind. Ignition: power line.
- October 1991 - Leona. 200 acres. West wind. Ignition: vehicle accident.

October 1991 - Buckingham/Norfolk (Tunnel Fire). 25 lives, 3,354 homes 456 apartments 3,000 acres, estimated \$1.5 billion damages. Diablo wind. Ignition: rekindle

2. POTENTIAL FOR FUTURE DAMAGE (structure/property within scope of project, i.e., buildings, crops, roads, facilities, etc.). (Enter response in 4,000 characters or less or attach/enclose separate WORD document)

- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD

>The potential for future damage is vividly illustrated by the historical fire data summarized in Section 1 above. Future fires along the very high fire risk wildland/urban interface addressed by the proposed project are almost certain to burn many houses, with individual fires burning several houses or dozens of houses or hundreds or thousands of houses in major fires. Furthermore, as documented by the 1991 Tunnel Fire, which claimed 25 lives, major fires also pose a substantial risk to both residents and fire fighters.

- B. DESCRIBE HOW OFTEN THIS TYPE OF DISASTER OCCURS? (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>The fire history data summarized above show 16 major fires over the past century or about one every six or seven years on average. However, every fire season there are literally hundreds of ignitions, with dozens of fires, which, fortunately, are generally extinguished before they destroy homes or take lives. This historical pattern of numerous fires is certain to continue, given the inherently high fire risk posed by these areas of vegetative fuel loads, steep topography, and climatic conditions which include very long very dry summers with periods of high winds.

The number of ignitions and the number of small fires can be mitigated only partially by continuing education and enforcement of fire safe practices. However, the risk of large fires consuming homes and putting lives at risk can be substantially reduced by continuing aggressive fuels management programs such as the proposed project.

- C. DESCRIBE THE ESTIMATED DOLLAR AMOUNT OF DAMAGE PREVENTED (\$00000) AND A REASONABLE JUSTIFICATION TO SUPPORT/EXPLAIN THE ESTIMATE. Refer to your BCA / Benefit Cost Analysis (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>The wildland/urban interface length for the proposed project's fuel reduction areas is 14 miles. Considering only an 0.5 mile wide interface (which is conservative because large fires have burned two miles or more into the densely developed areas) yields an estimated 22,400 homes affected by the project.

Using local data on average square footage of homes and local building replacement values, these homes have a replacement value of over \$5.8 billion dollars, with contents value estimated (using the FEMA value of 30% of building value) of over \$2 billion dollars.

Based on the number of homes, the population in the 0.5 mile interface area is estimated to be about 53,760, all of whom are at risk from future fires.

SEE: Brushing BCA Data Documentation Template.doc and Brushing BCA Supporting Calcs.xls for data sources and calculations.

Any single fire could result in damages into the tens or hundreds of millions of dollars, while major fires such as the 1991 Tunnel fire could result in damages into the billions. The mitigation project will reduce these future losses by at least 15%.

The BCA results show a net present value of benefits of damages avoided of \$44,724,250 which corresponds to over \$6 million per year in expected average annual (statistical) damages avoided.



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

D. DESCRIBE THE ESTIMATED DOLLAR AMOUNT (\$00000000) OF THE NEGATIVE IMPACT(S) ON THE AREA IF THE PROJECT IS NOT APPROVED. At a minimum the dollar amount is the same as above although the amount may be larger when other factors not captured in your BCA are considered. If larger, explain.

>The avoided damages summarized above in Section C would not be achieved if the mitigation project is not approved. Actually, the negative impacts of not approving this project would be significantly higher than those calculated in the BCA, because the BCA was a conservative lower-bound type analysis in several important regards:

- The area affected may be significantly wider than the 0.5 mile assumed in the BCA,
- The BCA did not consider infrastructure damages, fire suppression costs or timber values.
- The useful lifetime of the mitigation project will be longer than the 10 years assumed in the BCA, because EBRPD is committed to long term maintenance of the fuels reduction projects.

E. DESCRIBE THE NUMBER OF PEOPLE AND AMOUNT OF PROPERTY TO BE PROTECTED BY THE PROJECT AS FOLLOWS:

PEOPLE: \_\_\_\_\_ PROPERTY SIZE: \_\_\_\_\_ VALUE of Improvements and Contents: \_\_\_\_\_ \$  
 Refer to your BCA / Benefit Cost Analysis  
 (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>A lower-bound type estimate of the value property and people protected (assuming an affected width of only 0.5 miles from the interface) includes: \$6.8 billion buildings, \$2 billion in contents and over 53,000 people.

F. DISCUSS COST OF PROJECT vs VALUE OF BENEFITS: COST (any cost associated with the project)

>As documented by the BCA, the benefits of this project (over \$44 million) are nearly 10 times the costs of this project (\$3,726,000), with a benefit-cost ratio of 9.731.

1. DESCRIBE THE USEFUL LIFE OF PROJECT.  
 Refer to your DDT / Data Documentation Template  
 (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>For the BCA, we followed FEMA's BCA guidance for wildland/urban interface fire projects and assumed a useful lifetime of 10 years. In reality, the useful lifetime will be much longer, because EBRPD is committed to long term maintenance of the fuels reduction projects.

2. EXPLAIN IF THE PROJECTS BENEFITS ARE "LONG" or "SHORT" TERM AND WHY?  
 FEMA will only fund LONG term projects. Answer accordingly.

a Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD

(Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>The useful lifetime of the project is reality, the useful lifetime will be much longer, because EBRPD is committed to long term maintenance of the fuels reduction projects. Thus, benefits are likely to continue to accrue for 20 years or longer (indefinitely).

3. DESCRIBE AND EXPLAIN THE FREQUENCY OF REQUIRED MAINTENANCE.

(Either describe in 4,000 characters or less or attach/enclose separate WORD document)

> Based on recent experience with differing vegetation management alternatives, staff has estimated the range of costs for annual maintenance that the District is likely to incur. These per-acre estimates are based on past experience and will vary in future years, however, they will be updated annually. Costs for fuels maintenance projects depend on the following factors:

- desired vegetation conversion and management objectives
- specific site conditions such as accessibility, steepness, soil stability
- appropriateness of treatment type based, on regulations and interest groups
- need for multiple treatment types on the same site (accumulative costs)
- amount of planning, monitoring, and follow-up

Below are the approximate cost ranges for different types of treatments, including the cost of materials and equipment:

|                            |                             |
|----------------------------|-----------------------------|
| mechanical brush reduction | (\$800 - \$1,400 per acre)  |
| manual brush reduction     | (\$500 - \$2,500 per acre)  |
| grass mowing               | (\$50 - \$200 per acre)     |
| weed-eating                | (\$500 to \$3,000 per acre) |
| herbicide application      | (\$100 - \$2,000 per acre)  |
| hydro-seeding              | (cost varies)               |
| tree planting              | (cost varies)               |
| erosion control            | (cost varies)               |
| animal grazing             | (\$100 - \$600 per acre)    |
| applied fire               | (\$100 to \$4,000 per acre) |
| site monitoring            | (\$50 per acre)             |

At a minimum all site will require at least annual maintenance and monitoring. Because treatments may be necessary more than once per year on any given site and costs of multiple treatments can be cumulative, it is difficult to project total costs without knowing the specific management prescriptions. In addition, individual site prescriptions will likely change over time.

4. ANNUAL COST OF MAINTENANCE BEFORE MITIGATION AND WHAT THE MAINTENANCE WILL INCLUDE.

(not needed if project is not tied to an existing capital improvement)  
(Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>This project is not an existing capital project. No maintenance has been performed on the sites prior to this proposed project.

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

5 IF YOU ARE SUPPLYING A BENEFIT COST RATIO, BE SURE TO INCLUDE A COMPLETE DESCRIPTION IN DETAIL OF THE METHOD YOU USED. (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>The Benefit-cost analysis for this project was conducted with the latest version of the FEMA Wildland Fire BCA software (Version 6.1, March 6, 2006), from the latest version of the FEMA BCA Toolkit CD (Version 3.0). All of the data inputs and assumptions conform to the FEMA BCA guidance for wildland/urban interface fire projects, per the BCA Toolkit CD.

Benefit-cost analyses for this project are in the following file: Brushing BCA 01.xls.

This benefit-cost analysis is a conservative BCA, which is a lower bound analyses in several important regards. For example, user-entered burn recurrence interval was adjusted upwards by 15% (reflecting lower fire probabilities and resulting in a lower BCR) than the burn recurrence intervals calculated using the FEMA standard method. The burn recurrence interval was adjusted to reflect the risk reduction from already implemented fuel reduction measures.

The BCA considers the benefits of reduced damages to buildings and contents and reduced displacement costs but is a lower-bound type analysis because the following benefits were not considered: reduced damages to infrastructure, reduced fire suppression costs, and reduces timber value lost. Furthermore, the project useful life time and the project effectiveness percentage are both conservative: using higher (credible) lifetime and effectiveness would result in even higher calculated benefits.

Full documentation of all of the inputs into the BCA is provided in the following files, which are attached as supporting documentation:

- Brushing BCA Supporting Calcs.xls
- Brushing BCA Data Documentation Template.doc
- Brushing, BCA Executive Summary.doc
- Brushing Project Scope 8-18-00.doc
- Alameda LRA map.pdf
- Contra Costa LRA map.pdf

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**SECTION VII - INTENTIONALLY LEFT BLANK**

**SECTION VIII - MAINTENANCE ASSURANCE DESCRIPTION:**

(Enter 4,000 characters or less or attach/enclose a WORD document)

REMINDER: Maintenance of HMGP completed projects is not an eligible grant cost. Increased maintenance cost due to your project must be included in your Benefit Cost Analysis.

Identify any maintenance required to preserve the long-term mitigation effectiveness of the project. Attach or enclose Maintenance Schedule, Estimate Costs, and Identified Entity responsible for completing maintenance.

➤ Based on recent experience with differing vegetation management alternatives, staff has estimated the range of costs for annual maintenance that the District is likely to incur. These per-acre estimates are based on past experience and will vary in future years, however, they will be updated annually. Costs for fuels maintenance projects depend on the following factors:

- desired vegetation conversion and management objectives
- specific site conditions such as accessibility, steepness, soil stability
- appropriateness of treatment type based, on regulations and interest groups
- need for multiple treatment types on the same site (accumulative costs)
- amount of planning, monitoring, and follow-up

Below are the approximate cost ranges for different types of treatments, including the cost of materials and equipment:

|                            |                             |
|----------------------------|-----------------------------|
| mechanical brush reduction | (\$800 - \$1,400 per acre)  |
| manual brush reduction     | (\$500 - \$2,500 per acre)  |
| grass mowing               | (\$50 - \$200 per acre)     |
| weed-eating                | (\$500 to \$3,000 per acre) |
| herbicide application      | (\$100 - \$2,000 per acre)  |
| hydro-seeding              | (cost varies)               |
| tree planting              | (cost varies)               |
| erosion control            | (cost varies)               |
| animal grazing             | (\$100 - \$600 per acre)    |
| applied fire               | (\$100 to \$4,000 per acre) |
| site monitoring            | (\$50 per acre)             |

Because treatments may be necessary more than once per year on any given site and costs of multiple treatments can be cumulative, it is difficult to project total costs without knowing the specific management prescriptions. In addition, individual site prescriptions will likely change over time.

See attached Maintenance Assurance Description (File Name: Maintenance Cost, Fuel Management.doc)

**SECTION IX - PUBLIC NOTICE**

B. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

---

ARE YOU REQUIRED TO PROVIDE PUBLIC NOTICE OF THIS PROJECT? YES  NO

IF YES, PLEASE PROVIDE THE FOLLOWING INFORMATION:

DOCUMENT OF RECORD: >

POINT OF CONTACT: >

TELEPHONE NUMBER: >



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**SECTION X - NATIONAL FLOOD INSURANCE PROGRAM (NFIP)**

INSERT ANSWERS TO THE FOLLOWING QUESTIONS WITHIN THE ACCOMPANYING SHADED FIELDS.

A. Is the jurisdiction/community where project is located participating in the NFIP? If "YES", are they in good standing? (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>No

Is the jurisdiction/community under "investigation" for or suspected of non-compliance issues, which if verified, could result in the jurisdiction/community being place on "probation" or "suspension" with the NFIP? (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>No

B. Is this project located in a floodplain or floodway designated on a FEMA Flood Insurance Rate Map (FIRM) or Flood Boundary/Floodway Map (FB/FWM)? If "YES", MARK THE PROJECT LOCATION ON THE FIRM OR FB/FWM and attach/enclose to application. (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>No

C. Provide the following:

1. FIRM (FB/FWM) PANEL NUMBER: > 0600250075, 0650440001, 0600250250, 0600250265
2. FIRM ZONE Designations: > B, B, C, B
3. NFIP COMMUNITY ID NUMBER: > 060025, 065044, 060025, 060025

e. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

c. Is the applicant also applying for a Flood Mitigation Assistance (FMA) grant for this or any other project in the area of the proposed project? (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

If "YES" provide pertinent information as to current status of the application and a point of contact. (Either describe in 4,000 characters or less or attach/enclose separate WORD document)

>No

**SECTION XI - GENERAL COMMENTS**

**GENERAL COMMENTS**

(Enter 4,000 characters or less or attach/enclose a WORD document)

The project areas are in very high fire severity areas as determined by the current Cal Fire - Fire Hazard Severity Maps for State Responsibility Areas (SRA) and Local Responsibility Areas (LRA). See the Alameda LRA map.pdf and Contra Costa map.pdf files, which are attached to the application as supporting documentation.

The consequences of no action are painfully illustrated by the 1991 fire which burned over 3,000 homes and killed 25 people. East Bay Regional Park District is deeply committed to systematically reducing fire risk along the entire interface of its park lands with residential areas. This project is an important step and its implementation is urgently required to reduce fire risks.

**COST COMMENTS**

(Enter 4,000 characters or less or attach/enclose a WORD document)

>EBRPD has experience with completion of other fuels projects with a good working knowledge of the actual costs, which depend on fuel types, fuel loads, accessibility, and topography.

**ENVIRONMENTAL COMMENTS**

(Enter 4,000 characters or less or attach/enclose a WORD document)

> EBRPD is sensitive to environmental issues, knowledge of all necessary measures and precautions and dedication to ensuring the all aspects of the projects conform fully to all environmental protection requirements.

- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**THE ENVIRONMENTAL QUESTIONNAIRE PART II MUST BE COMPLETED AND SUBMITTED WITH THE PROJECT.**

**COMPLETENESS OF THE ENVIRONMENTAL QUESTIONNAIRE IS A RANKING FACTOR.**

## PART II – ENVIRONMENTAL QUESTIONNAIRE

**ENVIRONMENTAL DATA IS REQUIRED FOR PROJECT APPLICATIONS WHEN SUBMITTING A PROJECT TO THE STATE FOR THE FEMA HAZARD MITIGATION GRANT PROGRAM.**

### **SECTION I - REGULATIONS**

#### **FEMA ENVIRONMENTAL REGULATIONS FOR HMGP PROJECTS**

The Council on Environmental Quality (CEQ) has developed regulations to implement the National Environmental Policy Act (NEPA). Those regulations, as set forth in Title 40, Code of the Federal Regulations (CFR) Parts 1500-1508, require an investigation of the potential environmental impacts of a proposed federal action, and an evaluation of alternatives as part of the environmental assessment process. The FEMA regulations that establish the agency-specific process for implementing NEPA are set forth in 44 CFR Subpart 10.

Following are excerpts from FEMA's regulations for implementing NEPA for funding of HMGP projects:

#### 44 CFR 10.4 (a) POLICY

FEMA shall act with care to assure that, in carrying out its responsibilities, including disaster planning, response and recovery and hazard mitigation and flood insurance, it does so in a manner consistent with national environmental policies. Care shall be taken to assure, consistent with other considerations of national policy, that all practical means and measures are used to protect, restore, and enhance the quality of the environment, to avoid or minimize adverse environmental consequences.

FEMA shall:

- (1) Assess environmental consequences of FEMA actions;
- (2) Use a systematic, interdisciplinary approach that will ensure the integrated use of the natural and social sciences, and environmental considerations, in planning and decision-making where there is a potential for significant environmental impact;
- (3) Insure that presently unmeasured environmental amenities are considered in the decision-making process;
- (4) Consider reasonable alternatives to recommended courses of action in any proposal that involves conflicts concerning alternative uses of resources;
- (5) Make available to States, counties, municipalities, institutions, and individuals advice and information useful in restoring, maintaining, and enhancing the quality of the environment.

#### 44 CFR 10.7 (c) (2) RESPONSIBILITIES OF THE APPLICANT

The Applicant (State) shall:

- (1) Contact FEMA Region IX as early as possible in the planning process for guidance on the scope and level of environmental information required to be submitted in support of their application;
- (2) Conduct any studies which are deemed necessary and appropriate by FEMA to determine the impact of the proposed action on the human environment;
- (3) Consult with appropriate Federal, regional, State, and local agencies and other potentially interested parties during preliminary planning stages to ensure that all environmental factors are identified;

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- (4) Submit applications for all Federal, regional, State, and local approvals as early as possible in the planning process;
- (5) Notify FEMA Region IX as early as possible of all other Federal, regional, State, local, and Indian tribal actions required for project completion so that FEMA may coordinate all Federal environmental reviews; and
- (6) Notify FEMA Region IX of all known parties potentially affected by or interested in the proposed action.

## SECTION II – ENVIRONMENTAL CHECKLIST

### ENVIRONMENTAL CHECKLIST

- (1) Double click a box in the YES NO N/A columns
- (2) Menu will appear
- (3) ✓ Check box enabled,
- (4) Use radio button for Not checked or Checked

**REVIEW YOUR PROPOSED PROJECT BY IDENTIFYING WHICH ENVIRONMENTAL LAWS AND EXECUTIVE ORDERS APPLY TO YOUR PROJECT.**

*Coordinating Agency is included for your information and to assist you.*

**IF APPLICABLE CONTACT THE APPROPRIATE AGENCY AND ATTACH ANY CONSULTATION LETTERS TO THE APPLICATION.**

| YES                      | NO                                  | N/A                      | <u>NATIONAL HISTORIC PRESERVATION ACT</u>                                                          |
|--------------------------|-------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Are any structures involved in the project? (If so, provide construction dates of all structures.) |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Was consultation with the State Historic Preservation Officer (SHPO) conducted?                    |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | If applicable, was consultation with the Tribal Historic Preservation Officer (THPO) conducted?    |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Are comments attached?                                                                             |

Coordinating Agency: The State Historic Preservation Officer, the appropriate Tribal Historic Preservation Officer

| YES                                 | NO                                  | N/A                      | <u>ARCHEOLOGICAL &amp; HISTORICAL PRESERVATION ACT</u>         |
|-------------------------------------|-------------------------------------|--------------------------|----------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Will there be any ground disturbance?                          |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Will there be any potential disturbance to cultural resources? |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Was consultation with SHPO/THPO conducted?                     |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Are comments attached?                                         |

Coordinating Agency: The State Historic Preservation Officer, the appropriate Tribal Historic Preservation Officer

| YES                                 | NO                                  | N/A                      | <u>ENDANGERED SPECIES ACT</u>                                         |
|-------------------------------------|-------------------------------------|--------------------------|-----------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> | Will there be any disturbance to the physical environment?            |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Are any threatened or endangered species present in the project area? |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Has critical habitat been identified in the project area?             |



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD

- Was consultation with U.S. Fish and Wildlife Service (USFWS) and State Wildlife Agency conducted?
- Are comments attached?

Coordinating Agency: The State Historic Preservation Officer, the appropriate Tribal Historic Preservation Officer

**YES NO N/A FISH AND WILDLIFE COORDINATION ACT**

- Is the project located in or near a waterway or body of water?
- Will the project cause any modification to the waterway or body of water?
- Was consultation with USFWS and State Wildlife Agency conducted?
- Are comments attached?

Coordinating Agency: U.S. Fish and Wildlife Service and State Wildlife Agency

**YES NO N/A FARMLANDS PROTECTION POLICY ACT**

- Is the project located in or near designated prime and unique farmlands?
- Will the project convert any designated prime and/or farmlands?
- Was consultation with Natural Resources Conservation Service (NRCS) conducted?
- Are comments attached?

Coordinating Agency: U.S. Dept. of Agriculture's Natural Resources Conservation Service

**YES NO N/A CLEAN AIR ACT**

- Will the project result in temporary or permanent air emissions?
- Was consultation conducted?
- Are comments attached?

Coordinating Agency: State Environmental Agency or State Health Department

**YES NO N/A CLEAN WATER ACT (Section 404)  
RIVERS AND HARBORS ACT (Section 10)**

- Will the project involve dredging or disposal of dredged material, excavation, adding fill material or result in any modification to "waters" of the U.S.?
- Will the project involve bank stabilization or installing transmission in "waters" of the U.S.?
- Will the project be near or in navigable waters?
- Was consultation with the U.S. Army Corps of Engineers (USACE) conducted?
- Are comments attached?
- Will a permit be required?
- Have you submitted an application to the USACE?
- Is a copy of the application attached?
- Does a NATIONWIDE PERMIT apply?

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

Does a GENERAL PERMIT apply?

**COMMENT:** "WATERS" includes waters subject to ebb and flow of tide; wetlands; lakes, rivers, streams, mudflats, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, impoundments, tributaries, territorial seas, and wetlands adjacent to waters previously identified.

Coordinating Agency: U.S. Army Corps of Engineers

**YES NO N/A WILD AND SCENIC RIVERS ACT**

Is the project located near or in a designated wild and scenic river?  
   Was consultation conducted?  
   Are comments attached?

Coordinating Agency: U.S. Fish and Wildlife Service and the U.S. Forest Service within their jurisdiction.

**YES NO N/A WILDERNESS ACT**

Is the project located near or in a designated wilderness or coastal wildlife area?  
   Was consultation conducted?  
   Are comments attached?

Coordinating Agency: U.S. Fish and Wildlife Service, National Park Service and the Bureau of Land Management

**YES NO N/A OTHER RELEVANT LAWS AND ENVIRONMENTAL REGULATIONS**

Do any other laws and/or regulations apply to the project? If so, please reference and provide appropriate documentation.

Coordinating Agency: Applicable State Statutory Requirements, Executive and Administrative Orders and any local environmental requirements.

**EXECUTIVE ORDERS**

**YES NO N/A E.O. 11988 - FLOODPLAINS**

Is the project located in a FEMA-identified 100-year or 500-year floodplain?  
   Is the project located in a FEMA-identified floodway?  
   Is the project depicted on a FEMA FIRM map?  
   Is the map attached?  
   Was consultation with local floodplain administrator and state water control agency conducted?  
   Are comments attached?

Coordinating Agencies: Local community floodplain administrator and the state water control agency. A letter is required from the State Community Assistance Program Coordinator indicating the community is in good standing with the NFIP.

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD

| YES                                 | NO                       | N/A                                 | E.O. 11990 - WETLANDS                                                                                                                                |
|-------------------------------------|--------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | Is the project in an area that is inundated or saturated by surface or ground water (swamps, marshes, bogs, etc.) or in or near identified wetlands? |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Is the project depicted on a NWI map?                                                                                                                |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Is the map attached?                                                                                                                                 |
| <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Are agency comments attached?                                                                                                                        |

**COMMENT:** Wetlands are identified by obtaining a National Wetlands Inventory (NWI) map from the U.S. Fish and Wildlife Service, the Army Corps of Engineers, or their websites. The Natural Resource Conservation Service also has wetland maps for agricultural land.

Coordinating Agencies: U.S. Fish and Wildlife Service, Army Corps of Engineers, and Natural Resources Conservation Service

| YES                      | NO                                  | N/A                                 | E.O. 12898 - ENVIRONMENTAL JUSTICE                                                 |
|--------------------------|-------------------------------------|-------------------------------------|------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Is the project in an area of low income or minority populations?                   |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Will the project disproportionately impact any low income or minority populations? |
| <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Is any socio-economic data attached?                                               |

**COMMENT:** If the project would disproportionately adversely affect low income or minority individuals, or would disproportionately assist higher income individuals at the exclusion of lower income or minority individuals, then E.O. 12898 must be addressed.

Coordinating Agency: Local census office

**EXTRAORDINARY CIRCUMSTANCES (FEMA 44 CFR §10.8 (d)(3))**

If Extraordinary Circumstances exist within an area affected by an action, such that an action that is categorically excluded from NEPA compliance may have a significant adverse environmental impact, an environmental assessment shall be prepared. Please answer yes or no to the questions below:

| YES                                 | NO                                  |       |                                                                                                                                                   |
|-------------------------------------|-------------------------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (i)   | Greater scope or size than normally experienced for a particular category of action.                                                              |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (ii)  | Actions with a high level of public controversy;                                                                                                  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (iii) | Potential for degradation, even though slight, of already existing poor environmental conditions;                                                 |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (iv)  | Employment of unproven technology with the potential adverse effects or actions involving unique or unknown environmental risks;                  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (v)   | Presence of endangered or threatened species or their critical habitat, or archaeological, cultural, historical or other protected resources;     |
| <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (vi)  | Presence of hazardous or toxic substances at levels which exceed Federal, state, or local regulations or standards requiring action or attention; |

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- 
- (vii) Actions with the potential to affect special status areas adversely or other critical resources such as wetlands, coastal zones, wildlife refuge and wilderness areas, wild and scenic rivers, sole or principal drinking water aquifers;
  - (viii) Potential for adverse effects on health or safety; and
  - (ix) Potential to violate a federal, state, local, or tribal law or requirement imposed for the protection of the environment.
  - (x) Potential for significant cumulative impact when the proposed action is combined with other past, present and reasonably foreseeable future actions, even though the impacts of the proposed action may not be significant by themselves.



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**SECTION III - PROJECT CONDITIONS AND ASSURANCES**  
**PROJECT CONDITIONS AND ASSURANCES**

Indicate by checking each box below that you will adhere to these listed project conditions and assurances.

- If during implementation of the project, ground-disturbing activities occur and artifacts or human remains are uncovered, all work will cease and FEMA and SHPO will be notified.
- If deviations from the approved scope of work result in design changes, the need for additional ground disturbance, additional removal of vegetation, or will result in any other unanticipated changes to the physical environment, FEMA will be contacted and a re-evaluation under NEPA and other applicable environmental laws will be conducted.
- If wetlands or waters of the U.S. are encountered during implementation of the project, not previously identified during project review, all work will cease and FEMA will be notified.

East Bay Regional Park District  
Name of Subgrantee

August 28, 2008  
Date

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

SECTION IV – OTHER ENVIRONMENTAL LAWS  
**OTHER POSSIBLE ENVIRONMENTAL LAWS**

Other environmental laws may apply depending on the type of project you submit. This is a sample list of other environmental laws, but is not all inclusive. If not applicable, enter N/A.

EPA-Section 402 of the Federal Clean Water Act-Sewage Disposal Discharge Permits. (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Section 313 of the Federal Clean Water Act-Stormwater Mgt. and Erosion Sediment Control-33-U.S.C.-1251-1387 (Either describe in 4,000 characters or less or attach separate Word document)

**The project has the potential to increase storm water runoff. Project will require storm water pollution control best management practices to protect the environment.**

EPA-Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Hazardous Waste-42 U.S.C. 9601-9675 (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Underground Storage Tank Regulations. (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Federal Safe Drinking Water Act (SDWA)-42 U.S.C. 3001-3007-26. (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Resource Conservation and Recovery Act (RCRA)-42 U.S.C. 6901-6992k (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Toxic Substances Control Act (TSCA)-15 U.S.C.-2601-2892 (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Pollution Prevention Act (PPA)-42 U.S.C.-13101-13109. (Either describe in 4,000 characters or less or attach separate Word document)

N/A

EPA-Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA)- 42 U.S.C. 11001-11050. (Either describe in 4,000 characters or less or attach separate Word document)

N/A

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

Section 4(f) of the Dept. of Transportation Act-Recreational Area/ Parkland/ Protected Land. (Either describe in 4,000 characters or less or attach separate Word document)

**N/A**

Section 10 of the Rivers and Harbors Act-Navigable Waters. (Either describe in 4,000 characters or less or attach separate Word document)

**N/A**

Native American Graves Protection & Repatriation Act of 1990. (Either describe in 4,000 characters or less or attach separate Word document)

**Project will disturb ground on parkland open space. EBRPD will consult with Native American Heritage Commission**

Applicable State & Local Requirements and Laws. (Either describe in 4,000 characters or less or attach separate Word document)

**Project will need to comply with State CEQA and State water quality permits.**

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

SECTION V - ALTERNATIVES

**ALTERNATIVES**

Information for at least three alternatives must be evaluated in this section. Give equal treatment to all alternatives considered to the extent that information is available.

**IDENTIFY AT LEAST 3 ALTERNATIVES:**

ALTERNATIVE #1 – the No Action alternative evaluates the consequences of taking no action and leaving conditions as they currently exist. (Either describe in 4,000 characters or less or attach separate Word document)

**Under this alternative, vegetation management activities would not occur on EBRPD property within the Hills. In absence of these activities, exotic, high-ignition-potential vegetation would not be removed, and the existing high-fire hazard would continue.**

ALTERNATIVE #2 (Proposed Action) – is the applicant's preferred project to solve the problem. Explain why the proposed action is the preferred alternative. Identify how the preferred alternative would solve a problem, why the preferred alternative is the best solution for the community, why and how the alternative is environmentally preferred and why the project is the economically preferred alternative. (Either describe in 4,000 characters or less or attach separate Word document)

**In the project locations, EBRPD purpose to reduce the threat of property damage, personal injury, and other impacts to public health and safety caused by future fires in the Hills. Project will remove French broom and annual grasses, forbs, and shrubs within the project sites that represent a significant fire danger to adjacent property owners. Project will create defensible space and safe fire-fighting access routes to better protect the urban/wildland interface.**

**Types of vegetation management proposed for these sites include hand labor, small tree removal, mechanical treatments, prescribed burning, goat grazing, and chemical treatments. Most of the vegetation activities focus on removing nonnative species, French broom, and acacia, but shrubs, such as coyote bush and sage, would also be removed or reduced in height**

ALTERNATIVE #3 - is a second action alternative that would also solve the problem. It must be a viable project that could be substituted in the event the proposed action is not chosen. (Either describe in 4,000 characters or less or attach separate Word document)

**The third alternative is the use of cattle grazing to reduce vegetative fuel loads. This alternative involves the removal of brush, the construction of barbed wire fences to contain the cattle and the construction of water troughs and other infrastructure necessary for cattle operations. This alternative can be cost effective and is a popular method of vegetation fuel control in many areas around the Bay Area. However, the introduction of cattle into the East Bay Hills would be met with strong criticism from the community. Many park neighbors would not like the potential of having cattle escape into their property or on to local roadways. In addition, concerns regarding native plant species and the impacts cattle have on water quality would make the introduction of cattle problematic.**

**AFFECTED ENVIRONMENTS AND POTENTIAL IMPACTS OF THE ALTERNATIVES CONSIDERED**

1 Geology and Soils

Brief description of the geology and soils at the proposed project areas:



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

The Hills are part of the Northern California Coast Ranges. The Coast Ranges are characterized by northwest-trending ridges and valleys that parallel major strike-slip faults of the San Andreas fault system. The strata are complexly folded and faulted. Fold axes generally trend northwest reflecting northeast-southwest compressional tectonic stresses. Geologic deposits in the area are susceptible to landslides and soil erosion to varying degrees.

- How would Alternative 1 impact or be impacted by geology and soils. (Either describe in 4,000 characters or less or attach separate Word document)

No action Alternative. No impact.

- How would Alternative 2 impact or be impacted by geology and soils. (Either describe in 4,000 characters or less or attach separate Word document)

Removal of the brush would cause some temporary ground disturbance. The use of heavy equipment necessary to handle certain brush on flat terrain would have a temporary impact on the soil and geology. The removal of brush would expose the soil to possible erosion. Best management practices would be employed to reduce impacts. Cut logs would be used on site as natural water diversion barriers to minimize soil loss.

- How would Alternative 3 impact or be impacted by geology and soils. (Either describe in 4,000 characters or less or attach separate Word document)

The introduction of cattle grazing to the area could have a significant impact on the soil and geology of the area. Over grazing in local areas around troughs and gates could create erosion problems and the loss of top soil. The action and depressions cause by cattle hooves in the soil can increase water penetration of the soil and encourage over saturated soils to move. In addition, compaction from cattle can reduce soil productivity.

- Describe any measures that could be undertaken to mitigate the anticipated impacts from implementing the various alternatives described above (e.g. Best Management Practices to reduce the potential for soil erosion, etc.). (Either describe in 4,000 characters or less or attach separate Word document)

The use of best management practices to control storm water run off the use of brush and chips from the brush removal process would help mitigate the impact to the soils. Extremely bare areas of soil would be restored by reseeding with mixture of native grasses and grass seed good at resisting erosion.

2. Land Use and Planning

- Description of the existing land use and planning in the project area. (Either describe in 4,000 characters or less or attach separate Word document)

The area is part of the East Bay Regional Park District. The areas are designated as park land and will remain so after completion of the project.

a. Zoning

- Brief description of the zoning and/or planning at the proposed project areas. (Either describe in 4,000 characters or less or attach separate Word document)

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

The area is part of the East Bay Regional Park District. The areas are designated as park land and will remain so after completion of the project. The East Bay Regional Park District's Master Plan and the Land Use Development Plans for the parks examine the planning and operational constraints of this park land. These park land use plans contain provision for fuels management and the management of dangerous brush.

- How would Alternative 1 impact or be impacted by zoning and/or planning. (Either describe in 4,000 characters or less or attach separate Word document)

No Action Alternative. Activities undertaken as part of this alternative would not adversely affect the planning or zoning of the project areas.

- How would Alternative 2 impact or be impacted by zoning and/or planning. Would it be consistent with planning and zoning in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

Activities undertaken as part of this alternative would not adversely affect the planning or zoning of the project areas.

- How would Alternative 3 impact or be impacted by zoning and/or planning. Would it be consistent with planning and zoning in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

Activities undertaken as part of this alternative would not adversely affect the planning or zoning of the project areas.

- Describe any measures that could be implemented to mitigate the anticipated impacts of any of the alternatives. (Either describe in 4,000 characters or less or attach separate Word document)

Work in the project areas is consistent with the planning and zoning of the area. No mitigation is required.

b. Prime Farm Land

Brief description of any prime farmlands located in the project areas. (Either describe in 4,000 characters or less or attach separate Word document)

No prime farmland is affected by this project.

- How would Alternative 1 impact or be impacted by prime farmland. (Either describe in 4,000 characters or less or attach separate Word document)

No prime farmland is affected by this project.

- How would Alternative 2 impact or be impacted by prime farmland. (Either describe in 4,000 characters or less or attach separate Word document)

No prime farmland is affected by this project.

- How would Alternative 3 impact or be impacted by prime farmland. (Either describe in 4,000 characters or less or attach separate Word document)

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**No prime farmland is affected by this project.**

- Describe any measures that can be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

**No prime farmland is affected by this project. No impacts are anticipated.**

c. Floodplain Encroachment

Are any of the alternatives located in the floodplain or floodway designated on a FEMA Flood Insurance Rate Map (FIRM) or Flood Boundary/Floodway Map? If yes, designate the project locations on a FEMA flood map and attach to the application. (Either describe in 4,000 characters or less or attach separate Word document)

**No project areas are located in floodplain or floodways designated on a FEMA Flood Insurance Rate Map.**

Is the community where the project is located participating in the NFIP and are they in good standing? (Either describe in 4,000 characters or less or attach separate Word document)

**N/A**

Would any of the alternatives impact the FEMA map? (Either describe in 4,000 characters or less or attach separate Word document)

**None of the project alternatives would impact the FEMA map.**

How would Alternative 1 impact the floodplain? (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact a floodplain.**

How would Alternative 2 impact the floodplain? (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact a floodplain.**

How would Alternative 3 impact the floodplain? (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact a floodplain.**

3. Traffic Circulations, Volume, and Parking Access

Brief description of traffic circulation, volume and parking access in the project areas. (Either describe in 4,000 characters or less or attach separate Word document)

**The project areas are not open to vehicular traffic. There is no traffic circulation, volume or parking access in the project areas.**

- How would Alternative 1 impact or be impacted by traffic circulation, volume and parking access. (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact or be impacted by traffic circulation, volume and parking access.**



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- How would Alternative 2 impact or be impacted by traffic circulation, volume and parking access? (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact or be impacted by traffic circulation, volume and parking access.**

- How would Alternative 3 impact or be impacted by traffic circulation, volume and parking access? (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact or be impacted by traffic circulation, volume and parking access.**

- Describe any measures that could be implemented to mitigate any identified impacts. (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would not impact or be impacted by traffic circulation, volume and parking access.**

4 Public Health and Safety

Brief description of any health and safety issues in the project areas. This involves a brief discussion of federal and state standards, if applicable. (Either describe in 4,000 characters or less or attach separate Word document)

**Public safety in the Hills would likely be improved by the removal of highly flammable vegetation. The resulting reduction in fire hazard would decrease the potential damage to businesses and homes in the event of a fire. In addition to promoting fire prevention, the removal of large brush in the project area could provide benefits to public safety. In the event of high winds, wind throw could cause breakage of branches or bushes. The removal of large brush can reduce the potential damage associated with wind throw. The U.S. Geological Survey reports that the overall probability of an earthquake of magnitude greater than or equal to 6.7 on the Hayward-Rodgers Creek Fault system before the year 2030 is 32 percent (Association of Bay Area Governments 2000). The proposed project would provide benefits by removing fuels near residences and roadways and thereby reduce the potential impacts from fire caused by gas line breakage during an earthquake.**

**The use of herbicide to control the resprouts of cut brush is a concern to the community. Garlon 4 herbicide would be applied to the cambium of freshly cut brush and Garlon 4 would be reapplied to any resprouts to promote the conversion to a native forest.**

- How would Alternative 1 impact public health and safety issues? (Either describe in 4,000 characters or less or attach separate Word document)

**No Action Alternative. If the high fuel loads in these parks are not managed a catastrophic fire storm would spread from the brush into the urban interface.**

- How would Alternative 2 impact public health and safety issues? (Either describes in 4,000 characters or less or attach separate Word document)

**In addition to promoting fire prevention, the removal of large brush in the project area could provide benefits to public safety. In the event of high winds, wind throw could cause breakage of branches or topple entire bushes. The removal of large trees can reduce the potential damage associated with wind throw. The proposed project would provide benefits by removing fuels near residences and roadways and thereby reduce the potential impacts from fire caused by gas line breakage during an earthquake.**

**The application of herbicide could potentially have adverse impacts public health and safety in the form of skin and eye irritation from the herbicide.**



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- How would Alternative 3 impact public health and safety issues? (Either describe in 4,000 characters or less or attach separate Word document)

The use of cattle grazing could be effective in managing the some of the brush in the project areas. However, the introduction of cattle into the brush could escape the fenced fields and cause damage to public property and vehicular traffic.

- Describe any measures that could be implemented to mitigate any of the anticipated impacts: (Either describe in 4,000 characters or less or attach separate Word document)

Noise associated with clearing and planting activities would be kept within legal limits residential areas. Garlon 4 would be used according to the prescribed indications for the product. The area would be posted prior to the application of herbicide. In addition, only a small amount of herbicide is applied directly on to the cut tree stumps and resprouts. Signs would also be posted for follow up treatments and they would be timed for best effectiveness and fastest possible drying times. The work areas and other public hazards would be barricaded and properly marked. Trucks traveling through the area would maintain legal and safe speeds.

b. Socio-Economic Issues

Brief description of affected populations in the project areas. Census data should be used, if appropriate. Include a description and distribution (if any) of minority, elderly and low-income populations. (Either describe in 4,000 characters or less or attach separate Word document)

The project areas span Alameda and Contra Costa Counties. Alameda County has approximately 1,443,741 residents (U.S. Bureau of the Census 2000). Contra Costa County has approximately 948,816 residents (U.S. Bureau of the Census 2000). The unemployment rate for Alameda County as of June 2000 is 3.3 percent; Contra Costa County's unemployment rate is 3.0 percent (Employment Development Department 2000). Approximately 19 percent of Alameda County's population is of Hispanic origin, and 51 percent identified themselves as nonwhite (U.S. Bureau of the Census 2000). Approximately 18 percent of Contra Costa County's population is of Hispanic origin, and 34.5 percent identified themselves as nonwhite (U.S. Bureau of the Census 2000).

The project sites are within the bounds of recreational parklands; adjacent lands are principally residential and open space. Most of the project vicinity does not have a disproportionate number of minority persons, low-income persons, persons with few years of formal education, or persons with limited English-speaking ability. However, most impacts from the project would be beneficial. Reduction of fire hazard would minimize the potential damage to businesses and homes in the event of a fire. The implementation of the proposed project would provide a limited number of job opportunities to the community through the use of local logging contractors. No roads would be closed during project activities; therefore, local businesses, and residents would not be adversely affected. Any adverse impacts would be temporary. Measures would be taken to ensure the safety of the community during the implementation of the proposed project.

- How would Alternative 1 impact any populations described above? (Either describe in 4,000 characters or less or attach separate Word document)

**No Action Alternative. No impact although the increased risk of fire danger could threaten the community.**

- How would Alternative 2 impact any populations described above? (Either describe in 4,000 characters or less or attach separate Word document)

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**The project will be conducted in park land outside of population areas. The project will not have any socio-economic issues. Most of the project vicinity does not have a disproportionate number of minority persons, low-income persons, persons with few years of formal education, or persons with limited English-speaking ability.**

- How would Alternative 3 impact any populations described above? (Either describe in 4,000 characters or less or attach separate Word document)

**The project will be conducted in park land outside of population areas. The project will not have any socio-economic issues. Most of the project vicinity does not have a disproportionate number of minority persons, low-income persons, persons with few years of formal education, or persons with limited English-speaking ability.**

- Describe any measures that could be implemented to mitigate the anticipated impacts. (Either describe in 4,000 characters or less or attach separate Word document)

**The project will be conducted in park land outside of population areas. The project will not have any socio-economic issues. Most of the project vicinity does not have a disproportionate number of minority persons, low-income persons, persons with few years of formal education, or persons with limited English-speaking ability.**

6. Air Quality

- Brief description of air quality standards in the project areas and any local or state requirements, if applicable. Impacts should address short-term (during construction) and long-term (operational) impacts on air quality. (Either describe in 4,000 characters or less or attach separate Word document)

**Impacts to air quality associated with the sites proposed for brushing by either mechanized and/or hand clearing would include a temporary increase in PM10 from exposed soil, prescribed fires, brush clearing and chipping activities as well as negligible increases of PM10, CO, NO2, SO2, and O3 precursors from mechanical equipment exhaust. The removal of brush from the fuels management area will only have temporary impacts to air quality from the equipment and trucks used to remove the brush.**

- How would Alternative 1 impact air quality in the project areas? (Either describe in 4,000 characters or less or attach separate Word document)

**No Action Alternative. If a large scale wildfire were to erupt, the air quality impacts would be significant.**

- How would Alternative 2 impact air quality in the project areas? (Either describe in 4,000 characters or less or attach separate Word document)

**This alternative would have only temporary impacts to air quality.**

- How would Alternative 3 impact air quality in the project areas? (Either describe in 4,000 characters or less or attach separate Word document)

**The introduction of cattle would have minor impacts to air quality from truck and equipment needed to transport the cattle to and from the site.**

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**Temporary impact to air quality could be mitigated by conducting brush removal in the spring and other seasonal times when an air inversion is not present. Prescribed fires would be conducted be regional air quality standards at times when air quality impacts would be reduced. The use of low emission equipment could further mitigate anticipated impacts.**

**A. Noise**

- Brief description of any noise ordinances and sensitive receptors that may exist in the project areas. (Either describe in 4,000 characters or less or attach separate Word document)

**The project sites are located in regional parks open space. There are no specific noise ordinances in these areas. In addition, few people live in or near the project sites therefore there would be few societal receptors. Wildlife in the area such as raptors and mammals could be affected by the noise of the logging operations.**

- How would Alternative 1 impact ambient noise levels in the project areas? (Either describe in 4,000 characters or less or attach separate Word document)

**No Action Alternative. There would be no impact from not completing the project.**

- How would Alternative 2 impact ambient noise levels in the project areas? (Either describe in 4,000 characters or less or attach separate Word document)

**The noise level from tree removal operations can be quite loud. Fortunately, these operations will be conducted in open space parkland relatively far away from people. However, park users any wildlife in the park could be impacted by noise.**

- How would Alternative 3 impact ambient noise levels in the project areas? (Either describe in 4,000 characters or less or attach separate Word document)

**The introduction of cattle into the area would have minimal impact to ambient noise levels. Some cattle have been know to disturb park visitor, but these noise complaints are infrequent.**

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

**The work would be conducted after birds have left their nests. In addition, these areas of the park would be temporarily closed to park visitors to mitigate any disturbance to their experience in the parks. Noise levels would be kept within legal limits.**

**B. Public Services and Utilities**

- Brief description of the public services and utilities provided in the project areas. This should include, but not be limited to, water, sanitation, solid waste disposal, storm water drainage, electric power, natural gas, telephone/television service, law enforcement, fire protection, public transit system and emergency medical and hospitals. (Either describe in 4,000 characters or less or attach separate Word document)

**The project areas contain park trails and open space used by park visitors. Further, driving logging trucks and equipment on trails can the trails dusty. High voltage power lines often cross through these areas.**

- How would Alternative 1 impact public services and utilities in the project area? (Either describe in 4,000 characters or less or attach separate Word document)



- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**No Action Alternative.** This alternative could increase the size and strength of wildfires in the areas surrounding power lines. Dense vegetation surrounding the trails could make them less desirable to park users because they reduce sight lines, encroach on the trails and make people feel confined by the dense vegetation.

- How would Alternative 2 impact public services and utilities in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The project could result in the temporary closure of park trails. P, G & E already manages vegetation close to its power lines. This alternative would further reduce the vegetation near any power lines and improve the reliability and operation of the utility.

- How would Alternative 3 impact public services and utilities in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

This alternative would have limited impact on public services and utilities. Park visitors often are allowed in parks with cattle grazing. Some visitors are nervous about the cattle's presents, but EBRPD has few reported incidents between cattle and park visitors.

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

Signs and a public information campaign could be used to reduce impacts to trail users. Alternative routes could be established to route trail users around the temporarily closed areas. In addition, a water truck could be used to reduce the amount of dust on the trail making less of an impact on trail users.

## 7. Water Quality/Water Resources

Brief description of any water quality/water resource issues relative to the project area.

Average annual precipitation in the project area ranges from 16 inches around the Port of Oakland to 26 inches in the Montclair area of the Hills (Miller and Koh 1993). Due to the steep topography of the Hills, much of the precipitation is transformed into surface-water runoff. However, as the surface water passes over areas with sandy or highly porous soils, some of it percolates into the groundwater aquifer through recharge areas. The local aquifer consists of scattered unconnected pockets of water, or lenses, of various sizes. The depth to the water table varies, but tends to increase in bands parallel to the Bay shoreline approaching the Hills. In the Hills and upper portions of the East Bay Plain, depth to the water table often exceeds 20 feet (Miller and Koh 1993). All of the parks proposed for vegetation management activities contain water resources in the form of perennial creeks, streams, springs, ponds, or intermittent water sources.

- How would Alternative 1 impact water quality and/or water resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

**No Action Alternative. No impact.**

- How would Alternative 2 impact water quality and/or water resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The removal of brush could expose the area to increased erosion and therefore increased storm water pollution. The use of machinery could introduce fuel and other petroleum spills in the park land. The use of goats for grazing could impact water quality. Grazing goats can negatively impact water supplies and riparian areas if these areas are unprotected.

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- How would Alternative 3 impact water quality and/or water resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The introduction of cattle into these areas could have a significant impact to water quality. Cattle greatly disturb the upper layer of top soil making it susceptible to erosion. In addition cattle eliminations can run directly into creeks and streams.

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. Impacts should address short-term (during construction) and long-term impacts on water quality. (Either describe in 4,000 characters or less or attach separate Word document)

Best management practices would be used to prevent pollution from storm water run off. Logs and chips would be place to prevent erosion. Bare areas would be hydro-seeded and erosion control material would be used where needed to prevent storm water pollution. Machinery could be inspected daily and any leaks immediately repaired and no equipment would be fueled within fifty feet of a stream or creek. Animal managers should ensure that livestock are moved promptly out of areas showing signs of overgrazing and/or excessive hoof traffic.

B. Biological Resources

a. Wetlands

Consult a National Wetlands Inventory Map to determine if wetlands are located in the project areas.

None of the project sites are in wetland areas. However, some of the project sites are near wetlands, see attached maps in the project scoping document. The project proposes no filling or direct impact to the wetlands. Soil erosion from exposed soil could wash into the wetlands and impact water quality.

Several creeks, reservoirs, and intermittent drainages are located within the parks proposed for vegetation management activities. However, all of the proposed project sites have been selected to avoid area waterways.

- How would Alternative 1 impact wetlands in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

No Action Alternative. No impact.

- How would Alternative 2 impact wetlands in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

None of the project sites are in wetland areas. However, some of the project sites are near wetlands, see attached maps in the project scoping document. The project proposes no filling or direct impact to the wetlands. Soil erosion from exposed soil could wash into the wetlands and impact water quality.

Several creeks, reservoirs, and intermittent drainages are located within the parks proposed for vegetation management activities. However, all of the proposed project sites have been selected to avoid area waterways.

- How would Alternative 3 impact wetlands in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The introduction of cattle into the project areas could impact wetlands creating run off and erosion problems near wetlands. In addition cattle can escape cattle fenced areas going into and destroying wetlands. Cattle fencing must be established to exclude cattle from wetland areas.

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

Proper delineation of wetlands and clear marking of the wetlands prior to construction could reduce direct impacts to the wetlands. Best management practices such as rehabilitation of disturbed areas, reseeding of bare ground, the installation of barrier logs and sediment control basin along with the application of chips and mulch could reduce storm water pollution from washing into the wetlands. Animal managers must construct temporary goat fences to exclude goats from wetland areas.

b. Threatened or Endangered Species (animal, plant or aquatic)

Contact state and federal agencies to determine if any threatened, endangered, or sensitive species (animal, plant, and aquatic) or their habitats are located in or near the proposed project areas.

Alameda whipsnake (*Masticophis lateralis euryxanthus*), a federally threatened species may occur. *Presidio clarkia*. The federally endangered plant *Presidio clarkia* (*Clarkia franciscana*) may occur. Santa Cruz tarplant (*Holocarpha macradenia*) may be present in the project areas. Pallid manzanita (*Arctostaphylos pallida*) is known to occur at Tilden. Callippe silverspot butterfly (*Speyeria callippe callippe*) have the potential to occur in the project areas. See attached map of potential threatened, endangered or sensitive species in the area.

- How would Alternative 1 impact any threatened, endangered, or sensitive species or their habitat in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

No Action Alternative. No Impact.

- How would Alternative 2 impact any threatened, endangered or sensitive species or their habitat in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The project area could potentially impact Alameda Whipsnake, Red Legged Frog as well as nesting raptors in the trees. Threatened Santa Cruz tar plant is also known to occur in areas near the project sites. The project could result in mortality to individual animals or impact reproductions.

- How would Alternative 3 impact any threatened, endangered or sensitive species or their habitat in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The project area could potentially impact Alameda Whipsnake, Red Legged Frog as well as nesting raptors in the trees. Threatened Santa Cruz tar plant is also known to occur in areas near the project sites.

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

Conducting brush removal operation in habitat for Alameda Whipsnake and Red Legged Frogs could kill individuals and have a short term impact on their habitat. However, brushing operations could be conducted in the winter months when the whip snakes are most likely to be underground. The project would create a mosaic of brush and grassland that is the preferred habitat for the whip snake. No brushing would occur around ponds know to contain red legged frogs.

c. Vegetation, Wildlife, and Aquatic Resources



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- Describe other vegetation, wildlife, and aquatic resources in the project areas. (Either describe in 4,000 characters or less or attach separate Word document)

The proposed project areas include the following vegetation communities: Grasslands, North Coastal Scrub (wet and dry), Successional Scrub, Mixed Hardwood Woodland and Forest, Brush Forest (1- to 5-year, 20-year, and mature), Monterey Pine Forest (mature stands and plantations), Mixed Mature Monterey Pine/Brush Forest, Riparian Forest, Cypress Forest, and Redwood/Douglas Fir Forest. All of these vegetation communities have the potential to be impacted by vegetation management activities except for Riparian Forest and Redwood/Douglas Fir Forest, which are uncommon in the project areas.

Wildlife species that are known to utilize Grasslands of the Hills include black-tailed deer (*Odocoileus hemionus*), coyote (*Canis latrans*), sharp-tailed snake (*Contia tenuis*), Western skink (*Eumeces skiltonianus*), Southern alligator lizard (*Gerrhonotus multicarinatus*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), and white-crowned sparrow (*Zonotrichia leucophrys*).

Mammals common to the North Coastal Scrub community include black-tailed deer, gray fox, bobcat, brush rabbit (*Sylvilagus bachmani*), and striped skunk (*Mephitis mephitis*). Bird species that occur in this habitat include California quail (*Callipepla californica*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), and Western scrub jay (*Aphelocoma californica*). Reptiles in this community include the Northwestern fence lizard (*Sceloporus occidentalis occidentalis*), western skink, and northern Pacific rattlesnake (*Crotalus viridis oreganus*).

- How would Alternative 1 impact resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

No Action Alternative. A catastrophic wildfire could destroy the habitat for many type of wildlife.

- How would Alternative 2 impact resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

Vegetation management activities to thin brush trees, small trees, and acacia would require the use of heavy equipment to access, cut, and remove the brush. Hand-removal of other shrubs would require equipment such as chainsaws, handsaws, brush cutters, and weed eaters. Hand labor would also be utilized to remove small-diameter trees. Excess slash of brush, acacia and small trees would be chipped and left on site. These mechanical and manual actions could impact vegetation through accidental crushing, breaking, uprooting, trampling, soil compaction, or otherwise damaging the plants. Heavy equipment could cause soil erosion or soil compaction, especially if work is scheduled for the rainy season. Soil compaction greater than approximately 80 percent could prevent the growth of vegetation. Excessive soil compaction could also destroy the mycorrhizal fungi that native plants rely on for establishment and growth. The long-term impacts to vegetation and wildlife of the proposed removal of exotic, high-fire-hazard vegetation and the encouragement of lower-fire-hazard native species would be beneficial.

Further, many of the project sites contain dense canopies of brush that shade out native species, thereby diminishing species diversity. Opening the canopy and removing competitive, exotic species would aid in reestablishing native species in these areas. Certain brush species produce a litter layer of debris that inhibits understory vegetation and reduces wildlife habitat. Removing the thick litter layer would allow herbaceous understory vegetation to become reestablished, thereby providing cover and forage areas for avian and small mammal populations.

z. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- How would Alternative 3 impact resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

The introduction of cattle into the project areas could impact vegetation, wildlife and aquatic resources by creating run off and erosion problems near creeks and riparian areas. In addition cattle can escape cattle fenced areas going into and destroying sensitive areas. Cattle fencing must be established to exclude cattle from sensitive areas.

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

Prior to the removal of any large brush that could support nesting raptors, EBRPD would ensure that a qualified biologist surveys each area for signs of birds or threaten and endangered species. If any species are located, the area would be retained and a 100-foot buffer zone would be established around the area's perimeter. All nests would be allowed to proceed through fledging and dispersal of young before brushing activity commences; however, brush supporting nests of sensitive species would remain permanently undisturbed unless the brush represents an immediate threat to public safety. All hand-clearing of brush would avoid appropriate avian nesting seasons, as determined by the type of bird/nest to be protected. In whip snake habitat brushing operation could be conducted in the winter months when the snakes are more likely to be underground.

5 Cultural Resources

a. Historic Properties

- Identify any historic properties in the project areas by determining the age of the property and consulting with the State Historic Preservation Officer. (Either describe in 4,000 characters or less or attach separate Word document)

For other fuel projects in the East Bay Hills EBRPD contacted California Native American Heritage Commission (NAHC) to request a review of its Sacred Lands Files and a list of individuals or groups it believes should be contacted for information or concerns related to the project area. The NAHC responded on with a negative search of its Sacred Lands Files. EBRPD consulted with the individuals and groups recommended by NAHC; no legitimate concerns about the those projects or indications of traditional cultural properties were noted during this consultation. For other projects, EBRPD has initiated consultation with the California State Historic Preservation Officer (SHPO) for these other fuels management projects. From information provided by EBRPD, the SHPO concurred with EBRPD's determination that no properties eligible for the National Register of Historic Places would be affected by those projects. If cultural resources are revealed during project activities, work in the vicinity of the discovery would be halted and EBRPD would immediately take all reasonable measures to avoid or minimize harm to the discovered resource until EBRPD further consults with the SHPO.

- How would Alternative 1 impact historic properties in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

No Action Alternative: No impact.

- How would Alternative 2 impact historic properties in the project area? (Either describe in 4,000 characters or less or attach separate Word document)



- a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**There is always the possibility that previously unidentified archaeological resources could be discovered during fuel management construction. EBRPD will stop the project in the immediate vicinity of the any discovery, and to retain a qualified archaeologist to validate any unanticipated discovery. EBRPD shall report to SHPO any discoveries that appear to be eligible to the National Register, and will take all reasonable measures to avoid or minimize harm to the property until it completes consultation with the SHPO. Should human remains be encountered, work in the vicinity will be halted and the County Coroner will be notified immediately. If the remains are determined to be Native American, the coroner will contact the NAHC.**

- How would Alternative 3 impact historic properties in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

**There is always the possibility that previously unidentified archaeological resources could be discovered during fuel management construction. EBRPD will stop the project in the immediate vicinity of the any discovery, and to retain a qualified archaeologist to validate any unanticipated discovery. EBRPD shall report to SHPO any discoveries that appear to be eligible to the National Register, and will take all reasonable measures to avoid or minimize harm to the property until it completes consultation with the SHPO. Should human remains be encountered, work in the vicinity will be halted and the County Coroner will be notified immediately. If the remains are determined to be Native American, the coroner will contact the NAHC.**

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

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b. Archeological Resources:

Identify any potential archeological resources in the project areas by consulting with the State Historic Preservation Officer. You may be asked to perform a records search and/or a pedestrian survey of the proposed project areas.

**For other fuel projects in the East Bay Hills EBRPD contacted California Native American Heritage Commission (NAHC) to request a review of its Sacred Lands Files and a list of individuals or groups it believes should be contacted for information or concerns related to the project area. The NAHC responded on with a negative search of its Sacred Lands Files. EBRPD consulted with the individuals and groups recommended by NAHC; no legitimate concerns about the proposed project or indications of traditional cultural properties were noted during this consultation. EBRPD initiated consultation with the California State Historic Preservation Officer (SHPO) for these other fuels management project. From information provided by EBRPD, the SHPO concurred with EBRPD's determination that no properties eligible for the National Register of Historic Places would be affected by those projects. If cultural resources are revealed during project activities, work in the vicinity of the discovery would be halted and EBRPD would immediately take all reasonable measures to avoid or minimize harm to the discovered resource until EBRPD further consults with the SHPO.**

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- How would Alternative 1 impact archeological resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

**No Action Alternative. No impact.**

- How would Alternative 2 impact archeological resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

**There is always the possibility that previously unidentified archaeological resources could be discovered during fuel management construction. EBRPD will stop the project in the immediate vicinity of the any discovery, and to retain a qualified archaeologist to validate any unanticipated discovery. EBRPD shall report to SHPO any discoveries that appear to be eligible to the National Register, and will take all reasonable measures to avoid or minimize harm to the property until it completes consultation with the SHPO. Should human remains be encountered, work in the vicinity will be halted and the County Coroner will be notified immediately. If the remains are determined to be Native American, the coroner will contact the NAHC.**

- How would Alternative 3 impact archeological resources in the project area? (Either describe in 4,000 characters or less or attach separate Word document)

**There is always the possibility that previously unidentified archaeological resources could be discovered during fuel management construction. EBRPD will stop the project in the immediate vicinity of the any discovery, and to retain a qualified archaeologist to validate any unanticipated discovery. EBRPD shall report to SHPO any discoveries that appear to be eligible to the National Register, and will take all reasonable measures to avoid or minimize harm to the property until it completes consultation with the SHPO. Should human remains be encountered, work in the vicinity will be halted and the County Coroner will be notified immediately. If the remains are determined to be Native American, the coroner will contact the NAHC.**

- Describe any measures that could be implemented to mitigate the anticipated impacts described above (Either describe in 4,000 characters or less or attach separate Word document)

**There is always the possibility that previously unidentified archaeological resources could be discovered during fuel management construction. EBRPD will stop the project in the immediate vicinity of the any discovery, and to retain a qualified archaeologist to validate any unanticipated discovery. EBRPD shall report to SHPO any discoveries that appear to be eligible to the National Register, and will take all reasonable measures to avoid or minimize harm to the property until it completes consultation with the SHPO. Should human remains be encountered, work in the vicinity will be halted and the County Coroner will be notified immediately. If the remains are determined to be Native American, the coroner will contact the NAHC.**

10 Hazardous Materials and Wastes (to be used if hazardous materials and wastes issues are identified)

The American Society of Testing and Materials (ASTM) (1994) Standard E 1527-94 defines a recognized environmental condition as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property." This can include releases from waste sites, disposal sites, dump pits, etc.

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

- Brief description of any hazardous materials and waste issues involved in the project areas. This involves a brief discussion of federal and state standards, if applicable. (Either describe in 4,000 characters or less or attach separate Word document)

The areas to be treated are largely undisturbed woodlands and open space. Hazardous materials and / or hazardous waste are not anticipated to be discovered at the sites. The chemical herbicide Garlon 4 to be used treat the cut brush is a low toxicity herbicide.

- How would Alternative 1 impact or be impacted by these issues? (Either describe in 4,000 characters or less or attach separate Word document)

No Action Alternative. No impact.

- How would Alternative 2 impact or be impacted by these issues? (Either describe in 4,000 characters or less or attach separate Word document)

There is the potential to uncover hazardous material in the wilderness during brush removal operations. Potential negative effects from using Garlon 4 on project site vegetation include mortality, morbidity, or negative reproductive effects as a result of over-spraying Garlon 4 onto non-target species and the potential for vegetation or wildlife to come into contact with Garlon 4 through area soil or runoff.

- How would Alternative 3 impact or be impacted by these issues? (Either describe in 4,000 characters or less or attach separate Word document)

There is the potential to uncover hazardous materials sites during prescribed fire operations. Due to the nature of using prescribed fire it may not be possible to discover these prior to firing operations, thereby exposing these sites to heat and smoke during the firing operations. The exposure of these sites to fire could increase the risk of a hazardous materials release or increase the risk of exposure to fire personnel.

- Continue for the rest of the alternatives, if applicable. (Either describe in 4,000 characters or less or attach separate Word document)

- Describe any measures that could be implemented to mitigate the anticipated impacts described above. (Either describe in 4,000 characters or less or attach separate Word document)

Only licensed pest control applicators will be hired to apply Garlon herbicide. EBRPD staff used to apply Garlon will be trained to EBRPS standards and work under supervision of EBRPD's Integrated Pest Management Coordinator. Contractor will be required to inspect their equipment daily and repair any leaks prior to conducting and work with the equipment. Any suspicious container or spills encountered during the project will be reported immediately.



a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

11. Permits

- List the type of permits typically required for your project, such as a 404 permit from the Army Corps of Engineers, building permit, permit for storm water or sediment and erosion control, floodplain permit, etc. State whether you have applied for the required permit, or, if not, when will you apply. (Either describe in 4,000 characters or less or attach separate Word document)

**Project could require a 404 permit from the Army Corps of Engineers and / or a permit from the State's Regional Water Quality Control Board for storm water, sediment and erosion control. Project could require a Section 7 biological opinion from the U.S Fish and Wildlife Service for impacts to threatened and endangered species.**

12. Public Notice Coordination

- Provide the name of the most widely circulated newspaper where the proposed project is located, the address, phone and fax numbers and the publication deadlines. (Either describe in 4,000 characters or less or attach separate Word document)

**Oakland Tribune  
 The Tribune Tower  
 401 13th Street  
 Oakland, CA 94612**

**Mailing Address:  
 P.O. Box 28884  
 Oakland, CA 94604**

**Main Switchboard.....(510) 208-8300  
 Online Fax.....(510) 293-2712**

a. Navigate through the form by using the mouse to HIGHLIGHT AND ENTER DATA IN EACH FIELD.

**SECTION VI – ADMINISTRATIVE DOCUMENTS**

Please print this page – original signatures are REQUIRED.

**Authorization**

The undersigned does hereby submit this application for financial assistance in accordance with the Federal Emergency Management Agency's Hazard Mitigation Grant Program and the State Hazard Mitigation Administrative Plan and certifies that the applicant (i.e., organization, city, or county) will fulfill all requirements of the program as contained in the program guidelines and that all information contained herein is true and correct to the best of our knowledge.

Signature  Date 8/25/08  
Applicants' Agent

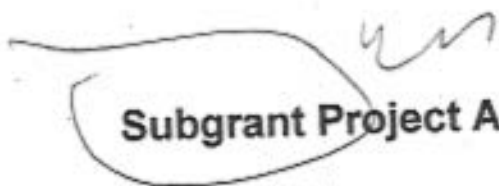
Davo Collins Type name

Signature  Date 8-28-08  
Chief Executive Officer

Pat O'Brien Type name

Organization East Bay Regional Park District  
Type name of organization

# EXHIBIT L



# Subgrant Project Application

**Application Title:** Oakland Regional Fuel Management Project  
**Subgrant Applicant:** Oakland Fire Department  
**Application Number:** PDMC-PJ-09-CA-2008-004  
**Application Year:** 2008  
**Grant Type:** Project Application  
**Address:** 150 Frank H. Ogawa Plaza #3354, Oakland, CA 94612-0000

### Applicant Information

|                                                                                                     |                                          |
|-----------------------------------------------------------------------------------------------------|------------------------------------------|
| Name of Applicant                                                                                   | Oakland Fire Department                  |
| State                                                                                               | CA                                       |
| Congressional District                                                                              | 9th                                      |
| Type of Applicant                                                                                   | Local Government                         |
| Legal status, function, and facilities owned:                                                       |                                          |
| State Tax Number:                                                                                   |                                          |
| Federal Tax Number:                                                                                 |                                          |
| Other type name:                                                                                    |                                          |
| Federal Employer Identification Number(EIN). If Indian Tribe, this is Tribal Identification Number. | 94-6000384                               |
| What is your DUNS Number?                                                                           | 137137977 -                              |
| Are you the application preparer?                                                                   | Yes                                      |
| Is the application preparer the Point of Contact?                                                   | Yes                                      |
| Is application subject to review by Executive Order 12372 Process?                                  | No. Program is not covered by E.O. 12372 |
| Is the applicant delinquent on any Federal debt?                                                    | No                                       |
| Explanation:                                                                                        |                                          |

- Where is the money coming from?  
 - what's the status of the EIR?  
 - city council approved?  
 - different agencies - who owns what?  
 - Grant fees remove everything

Contact Information  
Point of Contact Information

Title  
First Name  
Middle Initial  
Last Name  
Title  
Agency/Organization  
Address 1  
Address 2  
City  
State  
ZIP  
Phone  
Fax  
Email

Ms.  
Nina  
  
Morris  
Fire Personnel Operations Specialist  
Oakland Fire Department  
150 Frank H. Ogawa Plaza #3354  
  
Oakland  
CA  
94612  
510-238-4055 Ext.  
  
nmorris@oaklandnet.com

Alternate Point of Contact Information

Title  
First Name  
Middle Initial  
Last Name  
Title  
Agency/Organization  
Address 1  
Address 2  
City  
State  
ZIP  
Phone  
Fax  
Email

Mr.  
Leroy  
  
Griffin  
Assistant Fire Marshal  
Oakland Fire Department  
250 Frank H. Ogawa Plaza  
Third Floor  
Oakland  
CA  
94612  
510-238-7759 Ext.  
510-238-7924  
lgriffin@oaklandnet.com



Community Information

Please provide the name of each community that will benefit from this mitigation activity.

| State | County Code      | Community Name           | CID Number | CRS Community | CRS Rating | State Legislative District | US Congressional District |
|-------|------------------|--------------------------|------------|---------------|------------|----------------------------|---------------------------|
| CA    | 065048_QBM070HVV | <u>OAKLAND, CITY OF</u>  | 065048     | N             |            | 065048                     | 9                         |
| CA    | 060004_QBM020HJ1 | <u>BERKELEY, CITY OF</u> | 060004     | N             |            | 060004                     | 2                         |

Enter Community Profile information below.

[Help](#)

The communities benefiting from the proposed project are the city of Oakland (pop. 411,600) and the city of Berkeley (pop. 105,000). Oakland is the eighth largest city in California. In 2003, there were 145,992 households in Oakland, with an average household size of 2.62 people. The city of Oakland is a uniquely diverse and mature city that strives to maintain a balance between old and new by preserving historical structures and constructing new buildings. The Claremont Hotel and Resort is a historical site that will benefit from the proposed project because it will be better protected from threat of catastrophic fire. Oakland and Berkeley are densely populated urban centers, bordered by residential neighborhoods extending to an interface with forested wildlands. These wildlands, a treasured recreational resource of the community, are held by the City of Oakland, East Bay Regional Park District, East Bay Municipal Utility District, and the University of California at Berkeley. The project is located at the headslope of a heavily-vegetated canyon, near residential neighborhoods of Oakland and Berkeley, the Lawrence Berkeley National Laboratory, the University of California, and thousands of small-to-medium-sized businesses throughout 12 distinct business districts located in the Claremont, College, Hiller Highlands, Rockridge, and Montclair neighborhoods of Oakland. It is also located immediately adjacent to the Caldecott Tunnel, which a major transportation corridor for the San Francisco Bay Area. In addition there are several critical communication facilities located in the project impact area.

Comments

Attachments

|                                        |                  |                      |
|----------------------------------------|------------------|----------------------|
| State                                  | CA               |                      |
| Community Name                         | OAKLAND, CITY OF |                      |
| County Name                            | CALIFORNIA       |                      |
| County Code                            | ALAMEDA COUNTY   |                      |
| City Code                              | 065048           |                      |
| <u>FIPS Code</u>                       | 001              | <a href="#">Help</a> |
| <u>CID Number</u>                      | 065048           | <a href="#">Help</a> |
| <u>CRS Community</u>                   | N                |                      |
| <u>CRS Rating</u>                      |                  |                      |
| State Legislative District             | 065048           |                      |
| US Congressional District              | 9                |                      |
| <u>FIRM or FHBM available?</u>         | Yes              |                      |
| <u>Community Status</u>                | PARTICIPATING    | <a href="#">Help</a> |
| Community participates in <u>NFIP?</u> | Yes              |                      |
| Date entered in NFIP                   | 12-04-1970       |                      |

|                                                              |                   |                      |
|--------------------------------------------------------------|-------------------|----------------------|
| <u>Date of most recent Community Assistance Visit (CAV)?</u> | 01-16-2007        | <a href="#">Help</a> |
| State                                                        | CA                |                      |
| Community Name                                               | BERKELEY, CITY OF |                      |
| County Name                                                  | CALIFORNIA        |                      |
| County Code                                                  | ALAMEDA COUNTY    |                      |
| City Code                                                    | 060004            |                      |
| <u>FIPS Code</u>                                             | 001               | <a href="#">Help</a> |
| <u>CID Number</u>                                            | 060004            | <a href="#">Help</a> |
| <u>CRS Community</u>                                         | N                 |                      |
| <u>CRS Rating</u>                                            |                   |                      |
| State Legislative District                                   | 060004            |                      |
| US Congressional District                                    | 2                 |                      |
| <u>FIRM</u> or <u>FHRM</u> available?                        | Yes               |                      |
| <u>Community Status</u>                                      | PARTICIPATING     | <a href="#">Help</a> |
| Community participates in <u>NFIP</u> ?                      | Yes               |                      |
| Date entered in NFIP                                         | 10-22-1971        |                      |
| <u>Date of most recent Community Assistance Visit (CAV)?</u> | 11-24-2004        | <a href="#">Help</a> |

Mitigation Plan Information

Is the entity that will benefit from the proposed activity covered by a current FEMA-approved multi-hazard mitigation plan in compliance with 44 CFR Part 201? Yes

If Yes, please answer the following:

What is the name of the plan? Taming Natural Disasters  
 What is the type of plan? Local MultiJurisdictional Multihazard Mitigation Plan  
 When was the current multihazard mitigation plan approved by FEMA? 01-24-2006

Describe how the proposed activity relates to or is consistent with the FEMA-approved mitigation plan.

*native/  
non native  
is irrelevant  
NO*

Wildland/urban interface fire is second only to earthquake as the most damaging threat to life, safety, property, and other values at risk in the East Bay communities. The proposed project implements strategies identified in both the Safety Element of the City of Oakland's General Plan and the Multi-Jurisdictional Local Government Hazard Mitigation Plan for the San Francisco Bay Area. Specifically, the Housing Mitigation Strategy, section G element 9 calls for the expansion of vegetation management programs in wildland communities to effectively manage the fuel load, which is the primary objective of this proposed project. Fuel load reduction within the 350 acres of the project will be achieved by removal of non-native species. The Infrastructure Mitigation Strategies, section C, element 3, addresses the development of defensible spaces by clearing or thinning non-fire resistive vegetation or all non-native species within 30 feet of access, enhancing egress and ingress routes to critical facilities, and developing staging areas, which are also objectives of the current proposal. The proposed project will enhance a significant portion of the regional fuel break identified by the regional fire service agencies as an important part of all hazard mitigation plans because these efforts will protect neighborhoods and cities from rapidly moving firestorms.

If No or Not Known, please answer the following:

Does the entity have any other mitigation plans adopted? No

If Yes, please provide the following information.

| Plan Name | Plan Type | Date Adopted | Attachment |
|-----------|-----------|--------------|------------|
|-----------|-----------|--------------|------------|

Does the State/Tribe in which the entity is located have a current FEMA-approved mitigation plan in compliance with 44 CFR Part 201? Yes

If Yes, please answer the following:

What is the name of the plan? State of California Multihazard Mitigation Plan  
 What is the type of plan? Standard State Multi-hazard Mitigation Plan  
 When was the current multihazard mitigation plan approved by FEMA? 10-21-2004

Describe how the proposed activity relates to or is consistent with the State/Tribe's FEMA-approved mitigation plan.

The State of California Multi-Hazard Mitigation Plan addresses wildfire in its Fire Plan, which calls for "an innovative, proactive approach that includes stakeholders in identifying the risks that citizens face and appropriate community-based solutions that lessen the cost and damage from wildfires while improving public and firefighter safety and contributing to ecosystem health". The proposed project is in alignment with this plan, in that it enhances fuel breaks which has been proven as effective in mitigation strategy for slowing the spread of wildfire, and

reducing the risk of lost life and property in the event of a wildland fire. Additionally, the scope of work for the project is environmentally sensitive, and promotes a forest conversion within the project area. Environmental Impact Reports will be completed as required.

If you would like to make any comments, please enter them below.

To attach documents, click the *Attachments* button below.

[hazard mitigation pdf](#)

[Plans Approval Letter 01 26 06.pdf](#)

## Mitigation Activity Information

What type of activity are you proposing?

[Help](#)

300.2 - Vegetation Management - Wildfire

If you selected Other or Miscellaneous, above, please specify:

Title of your proposed activity:

Oakland Regional Fuel Management Project

Are you doing construction in this project?

No

If you would like to make any comments, please enter them below.

The proposed project is a collaboration between the City of Oakland, UC Berkeley, and East Bay Regional Park District (EBRPD) to reduce heavy fuel loads, enhance the strategic fuel break system and egress and ingress routes and defensible spaces in order to reduce the risk of future catastrophic wildland fires such as the 1991 firestorm that remains one of the top 10 most costly fire disasters in national history according to the National Fire Protection Handbook. Moreover, the proposed pre-disaster project reduces the risk of loss of property and lives and takes into consideration the preservation of the environment, and will enhance the goal of creating fire-resistant communities across America.

Attachments:

[Oakland Regional Project Map 2006.pdf](#)

## Problem Description

Please describe the problem to be mitigated. Include the geographic area in your description.

The Oakland/Berkeley East Bay Hills area is one of the highest risk areas in the country for devastating wildland/urban interface fires. This area has a 100+ year history of damaging wildland/urban interface fires, including the 1991 fire which destroyed over 3,400 dwellings and killed 25 people. The hazard of wildland fire in the area could be potentially caused by a number of sources, including: acts of nature (earthquake), terrorism, arson, or human negligence. The proposed project is the culmination of over a decade's work in fire risk reduction planning and design, enhancing the public's awareness of the fire risk, and building wide-spread public support for fire risk reduction measures. Since the devastating 1991 fire, regional public agencies have been meeting monthly to forge consensus plans to systematically and permanently reduce and manage vegetative fuel loads to significantly reduce the risk of future major fires. Previous mitigation efforts have resulted in substantial progress in creating defensible fire breaks and reducing the heavy fuel loads along the 25 mile wildland/urban interface zone. Without completion of this portion of the regional risk reduction measures, the effectiveness of measures already implemented over the past decade will be compromised because the proposed project continues mitigation efforts along a critical 8.5 mile section of the wildland/urban interface zone. That is, this project is a critical component of the fire mitigation work that has been taking place in the region, because of its proximity to many critical facilities and the thousands of homes, businesses and lives it will serve to protect in the event of a catastrophic fire. There are more than 13,000 residences in the impact area representing a current market value of over \$10 billion.

Enter the Latitude and Longitude coordinates for the project area.

Latitude: 37.8648  
 Longitude: 122.2280

WJ  
 37° 51.018'  
 122° 13.304'

Attachments:

[WJI - Fire Threat.pdf](#)  
[Fire History Map Oakland Regional.pdf](#)  
[ABAG Hazard Mitigation Plan and Council Report.pdf](#)  
[WJI - Fire Threatened Communities.pdf](#)

## Hazard Information

Select hazards to be mitigated

Fire

If other hazards, please specify

If you would like to make any comments, please enter them below.

The live fuel load in the project area is extremely high. After the work, the live fuel load will dramatically decrease. The fire break created in 1991 needs to be improved and enhanced in order to provide protection to the resident, homes and values at risk, which are conservatively estimated at over \$10 billion.

Attachments:

[Oakland Regional Project Map - Vegetation Types.pdf](#)  
[CA Fire Plan.pdf](#)

## FIRM Information

Is the project located within a hazard area:

No

If other identified high hazard area, please

specify:

Is there a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM) available for your project area? No

Enter FIRM Panel Number:

Is the project site marked on the map? Not Applicable

Select Flood Zone Designation



### Scope of Work

What are the goals and objectives of this activity?

The primary goal for this project is to reduce fuel loads and promote the growth of less fire prone fuels within the project area. Enhanced fire breaks, as well as ingress and egress routes are also goals within the scope of this project. Additionally, the project will provide areas for the staging of fire suppression equipment in the event of a wildfire.

Briefly describe the need for this activity.

The East Bay Hills' combination of hot dry summers, wind-conducive topography, flammable vegetation, dense urban development, limited fire-fighting access, and Diablo winds comprises this continuing substantial regional fire danger. The dense, non-native eucalyptus forests typical of the project area are extremely productive in terms of fuel load, with year-round shedding of leaves, small branches, and bark. Hot winds during fire events can carry such material several miles as burning embers, as witnessed in the 1991 firestorm, which destroyed over \$1.5 billion worth of personal property, and killed 25 people. Secondary spot fires and roof ignitions from these firebrands substantially increase fire range and risk. It has been proven that fire safety is best achieved through rigorous oversight and active management of regional fuel loads. This strategy is supported and recommended in both the State and the Local Hazard Mitigation Plans that recognize the extreme threat that wildland/urban interface fires pose to the area.

Describe the problems this activity will address.

The Oakland/Berkeley East Bay Hills area is one of the highest risk areas in the country for devastating wildland/urban interface fires. This area has a 100+ year history of damaging wildland/urban interface fires, including the 1991 fire which destroyed over 3,400 dwellings and killed 25 people. The proposed project is the culmination of over a decade's work in fire risk reduction planning and design, enhancing the public's awareness of the fire risk, and building wide-spread public support for fire risk reduction measures. Since the devastating 1991 fire, regional public agencies have been meeting monthly to forge consensus plans to systematically and permanently reduce and manage vegetative fuel loads to significantly reduce the risk of future major fires. Wildland/urban interface fire is second only to earthquake as the most damaging threat to life, safety, property, and other values at risk in the East Bay communities. Mitigation plans call for both vegetation treatment near and around structures, as well as creating and maintaining regional fuel breaks to protect neighborhoods and cities from rapidly moving firestorms. The proposed project reduces fuel, enhances fuel/fire breaks, provides defensible space, provides space for staging areas, and enhances ingress and egress routes within the project area. Local agencies have contributed substantial local funds and resources, which in combination with previous FEMA support, have resulted in substantial progress in creating defensible fire breaks and reducing the heavy fuel loads along the 25 mile wildland/urban interface zone. The proposed project continues this effort along a critical 8.5 mile section of the wildland/urban interface zone. Without completion of this portion of the regional risk reduction measures, the effectiveness of measures already implemented over the past decade will be compromised. That is, this project is an essential part of the long-term regional solution to the threat of urban/wildland interface fires. All of the local agencies and the affected public are deeply committed to long term ongoing maintenance of the fire break and vegetation control programs to permanently reduce the threat of major fires along this heavily populated high risk area.

Describe the methodology for implementing this activity.

In the project location, the under story is a rich assembly of native tree and shrub species growing beneath a canopy overwhelmingly comprised of resprouted eucalyptus trees. The eucalyptus reproduces rapidly from nuts and resprout, increasing the fuel load and density. Additionally, a small percentage of the canopy assemblage comprises exotic acacia species, which also spread rapidly and produce flammable litter. The management strategy proposed by this project promotes a forest conversion: the emerging native forest of California bay, oak, maple, buckeye, redwood and hazelnut will be retained and the existing eucalyptus-dominated exotic canopy forest will be eradicated. The native species produce either considerably lesser fuel loads or are most fuel-productive well before the peak of the regional fire season. During the project, the native under story will be protected, while the exotic trees will be removed and their stump will be chemically or mechanically treated to prevent re-sprouting, according to all EIR specifications and best management practices. Felled eucalyptus and acacia will be either removed - most will then be chipped - or lopped and scattered or chipped and scattered on the project site. Logs will be placed and retained as a component of the sediment/erosion control measures that are planned to be employed and additionally will serve as habitat supporting a variety of wildlife. Protection of the native species, and ongoing management after project completion, will ensure a successful conversion protective of natural and recreational resource values, including but not limited to habitat, hydrology, soils and geology, and air quality. All cut tree stumps shall receive follow-up treatment using current best management practices on any emerging stump sprouts to ensure the permanent elimination of eucalyptus from the project area. Follow up treatment of resprout will be conducted until 100% resprout suppression is obtained. Additionally, eucalyptus seedlings emerging from the latent seed stock present in the project area will be managed over time to prevent re-colonization of this invasive

not a valid reason - outcome - what about pike?

> unacceptable fire risk

species. The total project duration is anticipated to be 36 months, with 12 to 24 months of actual vegetation removal work, depending on type of treatment and season of the year. Follow-up treatment will occur monthly, and long term, ongoing maintenance will be conducted as an ongoing operation beyond the scope of the proposed grant (and is not included in the project costs). Follow-up efforts required for successful eradication of all eucalyptus resprout and seedlings are anticipated to be 7 to 10 years. By implementing these pre-disaster mitigation measures, the risk to the over 13,000 residences with an estimated value of over \$10 billion will be significantly reduced.

If you would like to make any comments, please enter them below.

The removal of invasive exotic eucalyptus and acacia species will serve to support the reemergence of native plants which both pose a much lower fire risk than the eucalyptus, as well as present a high value to natural watershed processes, to natural food chains, to habitat, and to the conservation community. The City of Oakland, UC Berkeley, and the East Bay Regional Park District continue to be regional leaders in cost-productivity of their fire management projects. We enjoy high production ratios (low unit costs) as members of the regional Hills Emergency Forum. This is due to institutional experience and intellectual resources.

Attachments:

[Oakland Regional Project Map - Relief Map.pdf](#)  
[Fire History Map Oakland Regional.doc](#)

#### Enter Work Schedule

| Description Of Task                                                       | Starting Point | Unit Of Time | Duration | Unit Of Time | Work Complete By                                                                                   |
|---------------------------------------------------------------------------|----------------|--------------|----------|--------------|----------------------------------------------------------------------------------------------------|
| Project pre-planning: define scope, collaborative approach, timing, costs | 1              | MONTHS       | 6        | MONTHS       | Regional Collaboration Fire Committee                                                              |
| Environmental Compliance                                                  | 3              | MONTHS       | 12       | MONTHS       | Fire Committee, OFD Vegetation Mgt. Unit, UCB Env. Planning, EBRPD, Project Mgr., Env. Consultant, |
| Contract Planning                                                         | 6              | MONTHS       | 18       | MONTHS       | Project Mgr., UCB, EBRPD, OFD Vegetation Mgt.                                                      |
| Award Bidding and Process                                                 | 8              | MONTHS       | 22       | MONTHS       | Project Mgr., UCB, EBRPD, OFD Veg. Mgt.                                                            |
| Project Management and Treatment Work                                     | 10             | MONTHS       | 24       | MONTHS       | Project Mgr., UCB, EBRPD, OFD Veg. Mgt.                                                            |
| Contract Work Period                                                      | 10             | MONTHS       | 24       | MONTHS       | Contractors                                                                                        |
| On-site Evaluation                                                        | 11             | MONTHS       | 25       | MONTHS       | Project Mgr., UCB, EBRPD, OFD Veg. Mgt.                                                            |
| End of Year Project Evaluation                                            | 12             | MONTHS       | 1        | MONTHS       | Project Mgr. will do this at the end of each year                                                  |
| Project Close Out                                                         | 34             | MONTHS       | 2        | MONTHS       | Project Mgr.                                                                                       |
| Grant Close Out                                                           | 35             | MONTHS       | 1        | MONTHS       | Project Mgr., OFD Grants Admin., OFD Accounting, UCB, EBRPD,                                       |
| Estimate the total duration of the proposed activity:                     |                |              | 36       | MONTHS       |                                                                                                    |

**Vegetation Management - Wildfire (300.2)**

Property Information Not Applicable

| Property Owner's Name | Damaged Property Address | City | State | ZIP | Repetitive Loss | Action |
|-----------------------|--------------------------|------|-------|-----|-----------------|--------|
|-----------------------|--------------------------|------|-------|-----|-----------------|--------|

### Decision Making Process

Describe the process you used to decide that this project is the best solution to the problem.

18 major fires have been recorded in the Oakland/Berkeley area since 1923. Each fire occurred in the same general area, under similar environmental conditions. The 1991 Oakland Hills Tunnel fire burned over 1,600 acres, taking 25 lives, and destroying an estimated 3,354 structures, with an estimated value of \$1.5 billion. The 1991 firestorm brought to forefront the need for aggressive fuel reduction efforts in the high fire risk Oakland hills. As such, the Mayor of Oakland, its City Council, and the Fire Department committed to aggressively pursue programs and projects that would effectively mitigate the risk of wildland fires and reduce the loss of lives and property following wildland fires. Several local agencies, including UC Berkeley and East Bay Regional Park District, share this commitment. The proposed project is the culmination of planning within the regional Hills Emergency Forum (HEF), the City of Oakland, Fire Department/Vegetation Management Program, UC Berkeley Fire Mitigation Committee, and The East Bay Regional Park District Fire Department, and combines the wildland fire mitigation efforts of the City of Oakland, UC Berkeley, and East Bay Regional Park District in a partnership that will maximize resources to achieve mutual fire mitigation goals. Each partnering agency owns parcels of land within the project area. Further, the scope of work for the project was decided following extensive research by City of Oakland, UC Berkeley, and East Bay Regional Park District staff. A report was published in January 2004, by the National Academy of Public Administration (NAPA) recommending three landscape scale actions to diminish wildfire hazards by reducing community vulnerability and fuel buildup: 1) Create fire-resistant communities and defensible spaces; 2) Create strategic fuel break systems; and 3) Reduce heavy fuel loads and restore forests. To that end the scope of work for this proposed project encompasses these recommendations and calls for: 1) the elimination of exotic vegetation in the Oakland Hills to create fuel breaks; 2) promote the growth of native species; 3) provide defensible space; and 4) enhance ingress and egress routes and provide space for staging areas within the approximate 360 acre project area.

Explain why this project is the best alternative.

The proposed project is the best balance of all factors, including environmental, biological, hydrological, air, land, and safety, aesthetic, programmatic. The project has been designed to minimize disturbance and increase value of many of the factors shown above. Staff also considered the practice of annual maintenance, which is not the same as permanent removal of exotic species. It was determined that this repetitive method did not provide optimal risk reduction, and was not as cost effective as removal. Additionally, taking no action was considered, and discarded, because the risk to life and property is too great to ignore. The eradication of the eucalyptus forest, as a goal, is the best method to cost-effectively control the vegetation management problem. Previous efforts have targeted the eucalyptus for reduction, but had not eradicated the plant, so the trees grew back rapidly, up to 15 feet per year! The plan to allow the native plant species to succeed the invasive eucalyptus is thought to promote a sustainable, cost-effective approach that has won broad acceptance from the community, including environmental activists and native plant societies.

Comments: *maybe*      *no*      *yes*

The City of Oakland, UC Berkeley, and the East Bay Regional Park District are highly qualified and experienced in both the operational management of large-scale vegetation management projects and in the accounting and reporting processes required in the administration of federal grant funds. The UC Fire Management Program has, since 1998, executed ten large vegetation management projects, totaling 102 acres and 7,500 trees removed. In 2003, the City of Oakland residents approved an assessment to ensure residential vegetation management compliance and support fuel management projects in the high fire hazard area within the City of Oakland. UC Berkeley was awarded a FEMA Hazard Mitigation Grant and the City of Oakland was awarded a FEMA Project Impact Hazard Mitigation Grant. All projects have been completed on time, on budget, and completed regulatory/environmental compliance. The FEMA grant process was fully implemented and the final report and audit were completed. No regulatory challenges have been made to any of the City of Oakland or UC Berkeley fire management projects in the past ten years. The City of Oakland's project has since become a national model.

Attachments:

HEF Letter of Support for Oakland Regional Project 2006.pdf

*untwe*

*not these projects*

300.2 - Vegetation Management - Wildfire

Federal Share: \$ 3,000,000.00

| Item Name                                        | Subgrant Budget Class | Unit Quantity | Unit of Measure | Unit Cost (\$)    | Cost Estimate (\$)     |
|--------------------------------------------------|-----------------------|---------------|-----------------|-------------------|------------------------|
| Mitigation Measures                              | Contractual           | 1.00          | Each            | \$ 40,000.00      | \$ 40,000.00           |
| Project pre-Planning, Define Scope, Timing, etc. | Personnel             | 1.00          | Each            | \$ 65,000.00      | \$ 65,000.00           |
| Environmental Compliance                         | Contractual           | 1.00          | Each            | \$ 35,000.00      | \$ 35,000.00           |
| Evaluation                                       | Personnel             | 1.00          | Each            | \$ 7,000.00       | \$ 7,000.00            |
| Vegetation Mgt.- Treatment Work - Tree Removal   | Contractual           | 350.00        | Acre            | \$ 9,740.00       | \$ 3,409,000.00        |
| Contract Planning                                | Personnel             | 1.00          | Each            | \$ 25,000.00      | \$ 25,000.00           |
| Project Close Out, Grants Mgt. Close Out         | Personnel             | 1.00          | Each            | \$ 15,000.00      | \$ 15,000.00           |
| Construction Management and Veg. Treatment       | Personnel             | 1.00          | Each            | \$ 404,000.00     | \$ 404,000.00          |
|                                                  |                       |               |                 | <b>Total Cost</b> | <b>\$ 4,000,000.00</b> |

**Total Project Cost Estimate: \$ 4,000,000.00**

Match Sources

|                              |                 |            |
|------------------------------|-----------------|------------|
| Activity Cost Estimate       | \$ 4,000,000.00 |            |
| Federal Share Percentage     | 75%             |            |
| Non-Federal Share Percentage | 25%             |            |
|                              | Dollars         | Percentage |
| Proposed Federal Share       | \$ 3,000,000.00 | 75%        |
| Proposed Non-Federal Share   | \$ 1,000,000.00 | 25%        |

Matching Funds

| Source Agency        | Name of Source Agency              | Funding Type   | Amount (\$)            | Action                       |
|----------------------|------------------------------------|----------------|------------------------|------------------------------|
| Local Agency Funding | City of Oakland                    | Administration | \$ 662,280.00          | <a href="#">View Details</a> |
| Local Agency Funding | University of California, Berkeley | Administration | \$ 220,550.00          | <a href="#">View Details</a> |
| Local Agency Funding | East Bay Regional Park District    | Administration | \$ 117,170.00          | <a href="#">View Details</a> |
| <b>Grand Total</b>   |                                    |                | <b>\$ 1,000,000.00</b> |                              |

If you would like to make any comments, please enter them below.

Attachments

- [City of Oakland match letter.doc](#)
- [Wildfire District Commitment and Support Letter.doc](#)
- [UCB Matching Cost Certification.doc](#)

Funding Source: Local Agency Funding  
 Name of Funding Source: City of Oakland  
 Funding Type: Administration  
 Amount: \$ 662,280.00  
 Date of availability: 02-03-2006  
 Funds commitment letter date: 02-01-2006  
 Attachment (funds commitment letter)

Funding Source: Local Agency Funding  
 Name of Funding Source: University of California, Berkeley  
 Funding Type: Administration  
 Amount: \$ 220,550.00  
 Date of availability: 02-03-2006  
 Funds commitment letter date: 12-10-2005  
 Attachment (funds commitment letter)

Funding Source: Local Agency Funding

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Name of Funding Source               | East Bay Regional Park District |
| Funding Type                         | Administration                  |
| Amount                               | \$ 117,170.00                   |
| Date of availability                 | 02-03-2006                      |
| Funds commitment letter date         | 01-30-2006                      |
| Attachment (funds commitment letter) |                                 |



# EXHIBIT M

*Claremont*

### Subgrant Project Application

**Application Title:** University of California Fire Mitigation Project - Claremont Canyon

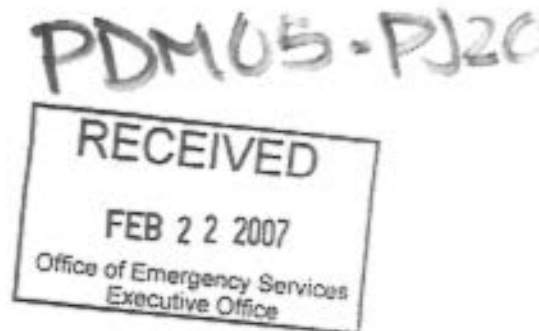
**Subgrant Applicant:** The Regents of the University of California

**Application Number:** PDMC-PJ-09-CA-2005-003

**Application Year:** 2005

**Grant Type:** Project Application

**Address:** Sponsored Projects Office 336 Sproul Hall, Berkeley, CA 94720-5940



#### Applicant Information

|                                                                                                     |                                               |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Name of Applicant                                                                                   | The Regents of the University of California   |
| State                                                                                               | CA                                            |
| Congressional District                                                                              | 9                                             |
| Type of Applicant                                                                                   | State Government                              |
| Legal status, function, and facilities owned:                                                       |                                               |
| State Tax Number:                                                                                   |                                               |
| Federal Tax Number:                                                                                 |                                               |
| Other type name:                                                                                    |                                               |
| Federal Employer Identification Number(EIN). If Indian Tribe, this is Tribal Identification Number. | 94-6002123                                    |
| What is your DUNS Number?                                                                           | 124726725 -                                   |
| Are you the application preparer?                                                                   | Yes                                           |
| Is the application preparer the Point of Contact?                                                   | No                                            |
| Is application subject to review by Executive Order 12372 Process?                                  | No. Program is not covered by E.O. 12372      |
| Is the applicant delinquent on any Federal debt?                                                    | No                                            |
| Explanation:                                                                                        |                                               |
| Community:                                                                                          | University (University of California) (81246) |
| Is this a small, impoverished community?                                                            | No                                            |

## Contact Information

## Point of Contact Information

|                     |                                             |
|---------------------|---------------------------------------------|
| Title               | Ms.                                         |
| First Name          | Susan                                       |
| Middle Initial      |                                             |
| Last Name           | Hedley                                      |
| Title               | Senior Research Administrator               |
| Agency/Organization | The Regents of the University of California |
| Address 1           | Sponsored Projects Office                   |
| Address 2           | 336 Sproul Hall                             |
| City                | Berkeley                                    |
| State               | CA                                          |
| ZIP                 | 94720 - 5940                                |
| Phone               | 510-642-8119 Ext.                           |
| Fax                 |                                             |
| Email               | shedley@berkeley.edu                        |

## Alternate Point of Contact Information

|                     |                                  |
|---------------------|----------------------------------|
| Title               | Mr.                              |
| First Name          | Thomas                           |
| Middle Initial      | E                                |
| Last Name           | Klatt                            |
| Title               | Manager - Emergency Preparedness |
| Agency/Organization | Police Dept.                     |
| Address 1           | 1 Sproul Hall                    |
| Address 2           | University of California         |
| City                | Berkeley                         |
| State               | CA                               |
| ZIP                 | 94720 - 1199                     |
| Phone               | 510-642-1258 Ext.                |
| Fax                 | 510-642-6434                     |
| Email               | tklatt@berkeley.edu              |

Community Information

Please provide the name of each community that will benefit from this mitigation activity.

| State | County Code      | Community Name   | CID Number | CRS Community | CRS Rating | State Legislative District | US Congressional District |
|-------|------------------|------------------|------------|---------------|------------|----------------------------|---------------------------|
| CA    | 065048_QBM0Z0HVV | OAKLAND, CITY OF | 065048     | N             |            | 065048                     | 9                         |

Enter Community Profile information below.

[Help](#)

The communities immediately adjacent to the project location are the City of Oakland ( pop. 472,000) and the City of Berkeley (pop. 105,000) These cities of the East Bay Area, are densely populated urban centers, bordered by residential neighborhoods extending to an interface with forested wildlands. These wildlands -- a treasured recreational resource of the community -- are held by the East Bay Regional Park District, East Bay Municipal Utility District and the University of California. Between 1923 and 1993, 14 major wildfires occurred in the East Bay Hills, burning over 11,000 acres, destroying 3,500 homes and causing 25 deaths. The 1991 Oakland Tunnel Fire set a tragic record for loss of homes to California wildfire only surpassed by the 2003 Southern California fires. The 1991 fire still stands as the highest destruction of California homes per acre. The project is located at the headslope of a heavily vegetated canyon adjacent to the Lawrence Berkeley National Laboratory, the University of California, residential neighborhoods of Berkeley and Oakland and thousands of small to medium sized businesses throughout 12 distinct business districts.

Comments

Attachments

|                                                              |                  |                      |
|--------------------------------------------------------------|------------------|----------------------|
| State                                                        | CA               |                      |
| Community Name                                               | OAKLAND, CITY OF |                      |
| County Name                                                  | CALIFORNIA       |                      |
| County Code                                                  | ALAMEDA COUNTY   |                      |
| City Code                                                    | 065048           |                      |
| <u>FIPS Code</u>                                             | 001              | <a href="#">Help</a> |
| CID Number                                                   | 065048           | <a href="#">Help</a> |
| CRS Community                                                | N                |                      |
| CRS Rating                                                   |                  |                      |
| State Legislative District                                   | 065048           |                      |
| US Congressional District                                    | 9                |                      |
| FIRM or FHBM available?                                      | Yes              |                      |
| Community Status                                             | PARTICIPATING    | <a href="#">Help</a> |
| Community participates in NFIP?                              | Yes              |                      |
| Date entered in NFIP                                         | 12-04-1970       |                      |
| Date of most recent <u>Community Assistance Visit (CAV)?</u> | 01-16-2007       | <a href="#">Help</a> |



Mitigation Plan Information

Is the entity that will benefit from the proposed activity covered by a current FEMA-approved multihazard mitigation plan in compliance with the Disaster Mitigation Act of 2000? Yes

If Yes, please answer the following:

What is the name of the plan? State of California Multi-Hazard Mitigation Plan  
 What is the type of plan? Local MultiJurisdictional Multihazard Mitigation Plan  
 When was the current multihazard mitigation plan approved by FEMA? 10-21-2004  
 Describe how the proposed activity relates to or is consistent with the FEMA-approved mitigation plan. Wildland urban interface fire is second only to earthquake as the most damaging threat to life, safety, property and other values at risk in the east bay communities. Mitigation plans call for both vegetation treatment near and around structures, as well as creating and maintaining regional fuel breaks to protect neighborhoods and cities from rapidly moving firestorms. The proposed project will develop a large portion of the regional fuelbreak identified as needed in all mitigation plans.

If No or Not Known, please answer the following:

Does the entity have any other mitigation plans adopted? Yes

If Yes, please provide the following information.

| Plan Name                                         | Plan Type       | Date Adopted | Attachment |
|---------------------------------------------------|-----------------|--------------|------------|
| 2020 Hill Area Fire Fuels Management Program      | FMA or CRS Plan | 10-01-2003   |            |
| Earthquake Loss Reduction for UC Berkeley         | FMA or CRS Plan |              |            |
| Seismic Action Plan Facilities Enhncmnt & Renewal | FMA or CRS Plan |              |            |
| Strategic Plan for Loss Reduction & Risk Mgmt.    | FMA or CRS Plan |              |            |
| UC Berkeley Business Resumption Plan              | FMA or CRS Plan |              |            |
| UC Berkeley EOC Plan                              | FMA or CRS Plan |              |            |

Does the State/Tribe in which the entity is located have a current FEMA-approved mitigation plan in compliance with the Disaster Mitigation Act of 2000? Yes

If Yes, please answer the following:

What is the name of the plan? Multi-Hazard Mit Plan, Addendum dated 2/25/2000  
 What is the type of plan? Standard State Multi-hazard Mitigation Plan  
 When was the current multihazard mitigation plan approved by FEMA? 10-21-2004  
 Describe how the proposed activity relates to or is consistent with the State/Tribe's FEMA-approved mitigation plan. Wildland urban interface fire is second only to earthquake as the most damaging threat to life, safety, property and other values at risk in the east bay communities. Mitigation plans call for both vegetation treatment near and around structures, as well as creating and maintaining regional fuel breaks to protect neighborhoods and cities from rapidly moving firestorms. The proposed project will develop a large portion of the regional fuelbreak

identified as needed in all mitigation plans.

If you would like to make any comments, please enter them below.

To attach documents, click the *Attachments* button below.



## Mitigation Activity Information

[Help](#)

What type of activity are you proposing?

300.2 - Vegetation Management - Wildfire

If you selected Other or Miscellaneous, above, please specify:

Title of your proposed activity:

University of California Fire Mitigation Project - Claremont Canyon

Are you doing construction in this project?

No

If you would like to make any comments, please enter them below

The University of California, Berkeley, has an active fire mitigation program and substantial experience in designing and executing fire management projects. A limiting factor in our progress is funding. The attached progress report detailing activities over the past few work seasons demonstrates our progress, policies, and accomplishments.

Attachments:

Biannual Report 2003-2004 ver 9.doc

Problem Description

Please describe the problem to be mitigated. Include the geographic area in your description.

Between 1905 and 1993, 16 major wildfires occurred in the East Bay Hills, burning over 14,000 acres, destroying 3,500 homes and causing 25 deaths. The 1991 Oakland Tunnel Fire set a tragic record for loss of homes to California wildfire only surpassed by the 2003 Southern California fires. The 1991 fire still stands as the highest destruction of California homes per acre. The East Bay Hills' combination of hot dry summers, wind-conducive topography, flammable vegetation, dense urban development, limited fire-fighting access, and Diablo winds comprises this continuing substantial regional fire danger. Because no significant fire-engendered restrictions have been placed on development, fire safety can only be achieved through rigorous oversight and active management of regional fuel loads. The project is located at the headslope of a heavily vegetated canyon immediately adjacent to the Lawrence Berkeley National Laboratory, University of California, and several large residential areas. The site lies within the cities of Oakland and Berkeley, displaying similar fire risk conditions to the catastrophic 1991 Tunnel Fire. The dense, non-native eucalyptus forests typical of the project area are extremely productive in terms of fuel load, with year-round shedding of leaves, small branches, and bark. Hot winds during fire events can carry such material several miles as burning embers. Secondary spot fires and roof ignitions from these firebrands substantially increase fire range and values at risk. The project location is a southwest-facing slope in the upper reaches of a heavily vegetated canyon immediately adjacent to the cities of Oakland and Berkeley, near the site of -- and displaying similar fire risk conditions to -- the catastrophic 1991 Tunnel Fire. That fire and its resultant losses were significantly increased by the wind-borne firebrand ignitions described immediately above.

Enter the Latitude and Longitude coordinates for the project area.

Latitude: 37.8689 37° 52' 38.05"  
 Longitude: 122.2214 122° 13' 17.04"  
 Attachments:

Hazard Information

Select hazards to be mitigated

Fire, Mud/Landslide

If other hazards, please specify

If you would like to make any comments, please enter them below.

The live fuel load in the project area is high. After the work, the live fuel load will dramatically decrease. As the resprouted eucalyptus are particularly susceptible to freezes, their elimination will mitigate the risk of a freeze-induced firestorm.

Attachments:

FIRM Information

Is the project located within a hazard area:

Other identified high hazard area

If other identified high hazard area, please specify:

East Bay Hills - State High Fire Hazard Areas

Is there a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM) available for your project area?

No

Enter FIRM Panel Number

Is the project site marked on the map?

Select Flood Zone Designation



## Scope of Work

*What are the goals and objectives of this activity?*

In the project location, the understory is a rich assembly of native tree and shrub species growing beneath a canopy overwhelmingly comprised of resprouted eucalyptus trees. The eucalyptus reproduces rapidly from nuts and resprouts, increasing the fuel load and density. Additionally, a small percentage of the canopy assemblage comprises exotic acacia species, which also spread rapidly and produce flammable litter. The management strategy promotes a forest conversion: the emerging native forest of California Bay, Oak, Maple, Buckeye, Redwood and Hazelnut will be retained and the existing eucalyptus-dominated exotic canopy forest will be eradicated. The native species produce either considerably lesser fuel loads or are most fuel-productive well before the peak of the regional fire season. During the project, the native understory will be protected, while the exotic trees will be removed and their stump cambium chemically treated with herbicide to prevent re-sprouting. Felled eucalyptus and acacia will be either removed -- most will then be chipped -- or lopped and scattered or chipped and scattered on the project site. Logs will be placed and retained as a component of the sediment/erosion control measures to be employed and will serve as habitat supporting a variety of wildlife. Protection of the native species, and ongoing management after project completion, will ensure a successful conversion protective of natural and recreational resource values, including but not limited to habitat, hydrology, soils and geology, and air quality. All cut tree stumps shall receive annual follow-up treatment of herbicides (Garlon 4, Stalker) on any emerging stump sprouts, to ensure the permanent elimination of eucalyptus from the project area. Follow up treatment of resprouts will be conducted until 100% resprout suppression is obtained. Additionally, eucalyptus seedlings emerging from the latent seed stock present in the project area will be managed over time to prevent re-colonization of this invasive species. The project duration is anticipated to be 18 - 24 months, with 12 to 24 weeks of actual vegetation removal work. Follow-up treatment will occur at least quarterly, and will be conducted as an ongoing maintenance operation beyond the scope of the proposed grant. Follow-up efforts required for successful eradication of all eucalyptus resprouts and seedlings are anticipated to be 7 to 10 years.

Briefly describe the need for this activity.

Refer to the response for Question 1

Describe the problems this activity will address.

Refer to the response for Question 1

Describe the methodology for implementing this activity.

Refer to the response for Question 1

If you would like to make any comments, please enter them below.

Attachments:

## Enter Work Schedule

| Description Of Task                                  | Starting Point | Unit Of Time | Duration | Unit Of Time | Work Complete By                                                            |
|------------------------------------------------------|----------------|--------------|----------|--------------|-----------------------------------------------------------------------------|
| Project Pre planning: define scope, approach, timing | 1              | MONTHS       | 3        | MONTHS       | Fire Mitigation Manager, Program Committee                                  |
| Environmental Compliance                             | 4              | MONTHS       | 8        | MONTHS       | UC: Environmental Planning, Environment, Health and Safety, Program Manager |
| Contract Planning                                    | 9              | MONTHS       | 1        | MONTHS       | Program Manager                                                             |
| Award Bid                                            | 10             | MONTHS       | 1        | WEEKS        | Program Manager                                                             |
| Project Management                                   | 11             | MONTHS       | 12       | MONTHS       | Program Manager                                                             |
| Contract Work Period                                 | 11             | MONTHS       | 12       | MONTHS       | Contractors                                                                 |
| Project Close Out/ Punch List                        | 23             | MONTHS       | 1        | MONTHS       | Program Manager                                                             |
| Photo Journal/ Success Story                         | 23             | MONTHS       | 2        | MONTHS       | Program Manager and staff                                                   |

Development

Grant Close Out

25 MONTHS

2

MONTHS

Program Manager, Accounting,  
Sponsored Projects Office

Estimate the total duration of the proposed activity:

26

MONTHS

**Vegetation Management - Wildfire (300.2)**

Property Information Not Applicable

Property Owner's Name

Address

City

State

ZIP

Action

### Decision Making Process

Describe the process you used to decide that this project is the best solution to the problem.

The proposed project is the culmination of planning within the regional Hills Emergency Forum ( HEF) and within the internal campus Fire Mitigation Committee. Participants in the planning of the project include the members of the Hills Emergency Forum (HEF): City of Berkeley, City of Oakland, City of El Cerrito, East Bay Municipal Utility District, East Bay Regional Park District, Lawrence Berkeley National Laboratory and California Department of Forestry and Fire Protection (CDF). Public-sector and non-profit private-sector participants in the concept planning include the Claremont Canyon Conservancy, members of the Berkeley and Oakland Fire Commission, and the North Hills Phoenix Association. In order to employ adaptive management techniques and to work within limited budgets, the complete canyon conversion project has been undertaken in phases. Four annual work phases totaling 47 acres and 4200 stems, have been completed to date (2001 - 2004). Planning for phase 5 is currently underway. The originally envisioned phases 6, 7 & 8 & 9 – representing the final segment of the work – are submitted for funding within the scope of this project, and will be consolidated to two work seasons (July 2006 - June, 2008). Environmental compliance was completed prior to execution of all previous phases of the project through approval of CEQA documentation and consultations with the San Francisco Regional Water Quality Control Board, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. No permits were required, and it is anticipated that – due to the similarity in conditions for the final 4 phases – CEQA and permitting reviews for Phases 6 through 9 will be nearly identical to the already-completed phases. Should Federal funding be granted, NEPA review would be conducted per statute. However, based on previous review and consultations, no significant and/or cumulative negative impacts to aesthetics, agricultural resources, air quality, biological resources, cultural/historical resources, geology, hydrology, land use, noise, public services, recreational resources, transportation or utilities are anticipated. UC has coordinated its efforts in developing the East Bay fuel break project with the largest landholder, the East Bay Regional Park District. Both agencies have worked together on the planning and documentation for these projects.

Explain why this project is the best alternative.

CEQA environmental review and compliance is fully complete: the campus has an approved programmatic Environmental Impact Report, including an approved, CEQA-mandated Mitigation Monitoring and Reporting Program covering the vegetation project under submission. The proposed project is the best balance of all environmental factors, including biological, hydrological, air, land, safety, aesthetic, programmatic. The project has been designed to minimize disturbance and increase value of many of the factors shown above. Other options, including NO PROJECT, have been reviewed and discarded in the environmental review process. The eradication of the eucalyptus forest – as a goal – is the best method to cost-effectively control the vegetation management problem. Previous efforts have targeted the eucalyptus for removal, but had not eradicated the plant, so the trees grew back rapidly – up to 15 feet per year! The plan to allow the native plant species to succeed the invasive eucalyptus is thought to promote a sustainable, cost-effective approach, that has won broad acceptance from the community, including environmental activists and native plant societies.

Comments:

Attachments:

## Vegetation Management - Wildfire

| Item Name                                      | Grant Budget Class | Subgrant Budget Class | Unit Quantity | Unit of Measure | Unit Cost (\$)    | Cost Estimate (\$)   |
|------------------------------------------------|--------------------|-----------------------|---------------|-----------------|-------------------|----------------------|
| Project Pre-planning                           | Contractual        | Personnel             | 1.00          | Each            | \$ 12,791.00      | \$ 12,791.00         |
| Environmental Compliance                       | Contractual        | Personnel             | 1.00          | Each            | \$ 10,466.00      | \$ 10,466.00         |
| Contract Planning                              | Contractual        | Personnel             | 1.00          | Each            | \$ 4,070.00       | \$ 4,070.00          |
| Project Management                             | Contractual        | Personnel             | 1.00          | Each            | \$ 24,420.00      | \$ 24,420.00         |
| Project Close Out                              | Contractual        | Personnel             | 1.00          | Each            | \$ 2,326.00       | \$ 2,326.00          |
| Photo documentation, success story development | Contractual        | Personnel             | 1.00          | Each            | \$ 4,070.00       | \$ 4,070.00          |
| Construction - tree removal operations         | Contractual        | Contractual           | 45.00         | Acre            | \$ 8,000.00       | \$ 360,000.00        |
|                                                |                    |                       |               |                 | <b>Total Cost</b> | <b>\$ 418,143.00</b> |

**Total Project Cost Estimate: \$ 418,143.00**



Match Sources

|                              |               |              |
|------------------------------|---------------|--------------|
| Activity Cost Estimate       | \$ 418,143.00 |              |
| Federal Share Percentage     | 69.59341661%  |              |
| Non Federal Share Percentage | 30.40658339%  |              |
|                              | Dollars       | Percentage   |
| Proposed Federal Share       | \$ 291,000.00 | 69.59341661% |
| Proposed Non-Federal Share   | \$ 127,143.00 | 30.40658339% |

Matching Funds

| Source Agency        | Name of Source Agency                   | Funding Type | Amount (\$)          | Action                       |
|----------------------|-----------------------------------------|--------------|----------------------|------------------------------|
| State Agency Funding | Fire Program Annual Operating Budget    | Cash         | \$ 84,200.00         | <a href="#">View Details</a> |
| State Agency Funding | Office of Emergency Preparedness Budget | Cash         | \$ 42,943.00         | <a href="#">View Details</a> |
| <b>Grand Total</b>   |                                         |              | <b>\$ 127,143.00</b> |                              |

If you would like to make any comments, please enter them below.

CLARIFICATION: The source of matching funds for the proposed grants are entirely composed of State funds and do not include any waived indirect costs. The justification to the UC Presidents Office requesting a waiver of indirect costs did state that waived indirect costs MAY be used, but in the final application, these were NOT USED as a component of the match. The matching funds noted above are budgeted and in place for the proposed project. The Fire Program funds will be used toward contracting costs, supplies and materials and the Emergency Preparedness Budget will pay for Force Account labor to conduct necessary planning, management, documentation of the contact work. Grant Administration and reporting is excluded in both the work scope and the project budget.

Attachments

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| Funding Source                       | State Agency Funding                 |
| Name of Funding Source               | Fire Program Annual Operating Budget |
| Funding Type                         | Cash                                 |
| Amount                               | \$ 84,200.00                         |
| Date of availability                 | 07-01-2006                           |
| Funds commitment letter date         | 01-15-2005                           |
| Attachment (funds commitment letter) | Matching Cost Certification.doc      |

|                                      |                                         |
|--------------------------------------|-----------------------------------------|
| Funding Source                       | State Agency Funding                    |
| Name of Funding Source               | Office of Emergency Preparedness Budget |
| Funding Type                         | Cash                                    |
| Amount                               | \$ 42,943.00                            |
| Date of availability                 | 07 01 2006                              |
| Funds commitment letter date         | 01-15-2005                              |
| Attachment (funds commitment letter) |                                         |



# Subgrant Project Application

**Application Title:** University of California Fire Mitigation Project - Strawberry Canyon

**Subgrant Applicant:** The Regents of the University of California

**Application Number:** PDMC-PJ-09-CA-2005-011

**Application Year:** 2005

**Grant Type:** Project Application

**Address:** Sponsored Projects Office 336 Sproul Hall, Berkeley, CA 94720-5040

PDM05-PJ19



*Strawberry*

## Applicant Information

Name of Applicant: The Regents of the University of California  
 State: CA  
 Congressional District: 9  
 Type of Applicant: State Government

Legal status, function, and facilities owned:  
 State Tax Number:  
 Federal Tax Number:

Other type name:

Federal Employer Identification Number(EIN). If Indian Tribe, this is Tribal Identification Number. 94-6002123

What is your DUNS Number? 124726725 -

Are you the application preparer? Yes

Is the application preparer the Point of Contact? No

Is application subject to review by Executive Order 12372 Process? No. Program is not covered by E.O. 12372

Is the applicant delinquent on any Federal debt? No

Explanation:  
 Community: University (University of California) (81246)

Is this a small, impoverished community? No

## Contact Information

## Point of Contact Information

|                     |                                             |
|---------------------|---------------------------------------------|
| Title               | Ms.                                         |
| First Name          | Susan                                       |
| Middle Initial      |                                             |
| Last Name           | Hedley                                      |
| Title               | Senior Research Administrator               |
| Agency/Organization | The Regents of the University of California |
| Address 1           | Sponsored Projects Office                   |
| Address 2           | 336 Sproul Hall                             |
| City                | Berkeley                                    |
| State               | CA                                          |
| ZIP                 | 94720 - 5940                                |
| Phone               | 510-642-8119 Ext.                           |
| Fax                 |                                             |
| Email               | shedley@berkeley.edu                        |

## Alternate Point of Contact Information

|                     |                                  |
|---------------------|----------------------------------|
| Title               | Mr.                              |
| First Name          | Thomas                           |
| Middle Initial      | E                                |
| Last Name           | Klatt                            |
| Title               | Manager - Emergency Preparedness |
| Agency/Organization | Police Dept.                     |
| Address 1           | 1 Sproul Hall                    |
| Address 2           | University of California         |
| City                | Berkeley                         |
| State               | CA                               |
| ZIP                 | 94720 - 1199                     |
| Phone               | 510-642-1258 Ext.                |
| Fax                 | 510-642-6434                     |
| Email               | tklatt@berkeley.edu              |

Community Information

Please provide the name of each community that will benefit from this mitigation activity.

| State | County Code      | Community Name   | CID Number | CRS Community | CRS Rating | State Legislative District | US Congressional District |
|-------|------------------|------------------|------------|---------------|------------|----------------------------|---------------------------|
| CA    | 065048_QBM0Z0HVV | OAKLAND, CITY OF | 065048     | N             |            | 065048                     | 9                         |

Enter Community Profile information below.

[Help](#)

The communities immediately adjacent to the project location are the City of Oakland ( pop. 472,000) and the City of Berkeley (pop. 105,000). Most of the residential homes near the project location are in Berkeley. These cities of the East Bay Area, are densely populated urban centers, bordered by residential neighborhoods extending to an interface with forested wildlands. These wildlands – a treasured recreational resource of the community – are held by the East Bay Regional Park District, East Bay Municipal Utility District and the University of California. Between 1923 and 1993, 14 major wildfires occurred in the East Bay Hills, burning over 11,000 acres, destroying 3,500 homes and causing 25 deaths. The 1991 Oakland Tunnel Fire set a tragic record for loss of homes to California wildfire only surpassed by the 2003 Southern California fires. The 1991 fire still stands as the highest destruction of California homes per acre. The project is located at the headslope of a heavily vegetated canyon adjacent to the Lawrence Berkeley National Laboratory, the University of California, residential neighborhoods of Berkeley and Oakland.

Comments

The Department of Energy Lawrence Berkeley National Laboratory operates on an adjacent 120 acre parcel and would be a direct beneficiary of the proposed project as well. LBNL employs 5000 staff and operates 67 buildings on its site. LBNL houses numerous national science endeavors including the Advanced Light Source, the National Center for Electron Microscopy and the National Research Scientific Computing Center.

Attachments

|                                                       |                  |                      |
|-------------------------------------------------------|------------------|----------------------|
| State                                                 | CA               |                      |
| Community Name                                        | OAKLAND, CITY OF |                      |
| County Name                                           | CALIFORNIA       |                      |
| County Code                                           | ALAMEDA COUNTY   |                      |
| City Code                                             | 065048           |                      |
| FIPS Code                                             | 001              | <a href="#">Help</a> |
| CID Number                                            | 065048           | <a href="#">Help</a> |
| CRS Community                                         | N                |                      |
| CRS Rating                                            |                  |                      |
| State Legislative District                            | 065048           |                      |
| US Congressional District                             | 9                |                      |
| FIRM or FHBM available?                               | Yes              |                      |
| Community Status                                      | PARTICIPATING    | <a href="#">Help</a> |
| Community participates in NFIP?                       | Yes              |                      |
| Date entered in NFIP                                  | 12-04-1970       |                      |
| Date of most recent Community Assistance Visit (CAV)? | 01-16-2007       | <a href="#">Help</a> |



Mitigation Plan Information

Is the entity that will benefit from the proposed activity covered by a current FEMA-approved multihazard mitigation plan in compliance with the Disaster Mitigation Act of 2000? Yes

If Yes, please answer the following:

|                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| What is the name of the plan?                                                                          | State of California Multi-Hazard Mitigation Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| What is the type of plan?                                                                              | Local MultiJurisdictional Multihazard Mitigation Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| When was the current multihazard mitigation plan approved by FEMA?                                     | 10-21-2004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Describe how the proposed activity relates to or is consistent with the FEMA-approved mitigation plan. | Wildland urban interface fire is second only to earthquake as the most damaging threat to life, safety, property and other values at risk in the east bay communities. Mitigation plans call for both vegetation treatment near and around structures, as well as creating and maintaining regional fuel breaks to protect neighborhoods and cities from rapidly moving firestorms. The proposed project will develop a large portion of the regional fuelbreak identified as needed in all mitigation plans. |

If No or Not Known, please answer the following:

Does the entity have any other mitigation plans adopted? Yes

If Yes, please provide the following information.

| Plan Name                                         | Plan Type       | Date Adopted | Attachment |
|---------------------------------------------------|-----------------|--------------|------------|
| Earthquake Loss Reduction for UC Berkeley         | FMA or CRS Plan |              |            |
| Seismic Action Plan Facilities Enhncmnt & Renewal | FMA or CRS Plan |              |            |
| Strategic Plan for Loss Reduction & Risk Mgmt.    | FMA or CRS Plan |              |            |
| UC Berkeley Business Resumption Plan              | FMA or CRS Plan |              |            |
| UC Berkeley EOC Plan                              | FMA or CRS Plan |              |            |

Does the State/Tribe in which the entity is located have a current FEMA-approved mitigation plan in compliance with the Disaster Mitigation Act of 2000? Yes

If Yes, please answer the following:

|                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| What is the name of the plan?                                                                                        | Multi-Hazard Mit Plan, Addendum dated 2/25/2000                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| What is the type of plan?                                                                                            | Standard State Multi-hazard Mitigation Plan                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| When was the current multihazard mitigation plan approved by FEMA?                                                   | 10-21-2004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Describe how the proposed activity relates to or is consistent with the State/Tribe's FEMA-approved mitigation plan. | Wildland urban interface fire is second only to earthquake as the most damaging threat to life, safety, property and other values at risk in the east bay communities. Mitigation plans call for both vegetation treatment near and around structures, as well as creating and maintaining regional fuel breaks to protect neighborhoods and cities from rapidly moving firestorms. The proposed project will develop a large portion of the regional fuelbreak identified as needed in all mitigation plans. |

If you would like to make any comments, please enter them below.

UC Berkeley also has a Fire Plan: UC Berkeley 2020 Hill Area Fire Management Program Plan

To attach documents, click the *Attachments* button below.

2020 Fire Plan---FINAL.pdf



Mitigation Activity Information

What type of activity are you proposing?

[Help](#)

300.2 - Vegetation Management - Wildfire

If you selected Other or Miscellaneous, above, please specify:

Title of your proposed activity:

University of California Fire Mitigation Project - Strawberry Canyon

Are you doing construction in this project?

No

If you would like to make any comments, please enter them below.

This is the overall detail map used in the benefit cost analysis.

Attachments:

### Problem Description

Please describe the problem to be mitigated. Include the geographic area in your description.

Between 1905 and 1993, 16 major wildfires occurred in the East Bay Hills, burning over 14,000 acres, destroying 3,500 homes and causing 25 deaths. The 1991 Oakland Tunnel Fire set a tragic record for loss of homes to California wildfire only surpassed by the 2003 Southern California fires. The 1991 fire still stands as the highest destruction of California homes per acre. Near the proposed project location, in 1923 a major wildfire raced through the city of Berkeley destroying 564 homes in just over 2 hours. Until 1991, this was the most destructive fire in California history. The East Bay Hills' combination of hot dry summers, wind-conductive topography, flammable vegetation, dense urban development, limited fire-fighting access, and Diablo winds comprises this continuing substantial regional fire danger. Because no significant fire-ongenerated restrictions have been placed on development, fire safety can only be achieved through rigorous oversight and active management of regional fuel loads. The project is located at the headslope of a heavily vegetated canyon immediately adjacent to the Lawrence Berkeley National Laboratory, University of California, and the hill residential area of the City of Berkeley. The site lies within the city of Oakland, displaying similar fire risk conditions to the catastrophic 1991 Tunnel Fire. The dense, non-native eucalyptus forests typical of the project area are extremely productive in terms of fuel load, with year-round shedding of leaves, small branches, and bark. Hot winds during fire events can carry such material several miles as burning embers. Secondary spot fires and roof ignitions from these firebrands substantially increase fire range and values at risk. The project location is a southwest-facing slope in the upper reaches of a heavily vegetated canyon immediately adjacent to the cities of Oakland and Berkeley, near the site of -- and displaying similar fire risk conditions to -- the catastrophic 1923 Berkeley and 1991 Tunnel Fire. Those fires and their resultant losses were significantly increased by the wind-borne firebrand ignitions described immediately above.

Enter the Latitude and Longitude coordinates for the project area.

Latitude: 37.5288

Longitude: 122.1447

37° 31' 43.68"  
122° 8' 40.92"

Attachments:

Strawberry Canyon - 1-24,000.doc  
Fire Projects in MS Word -2005.doc

### Hazard Information

Select hazards to be mitigated

Fire, Mud/Landslide

If other hazards, please specify

If you would like to make any comments, please enter them below.

The live fuel load in the project area is high. After the work, the live fuel load will dramatically decrease. As the resprouted eucalyptus are particularly susceptible to freezes, their elimination will mitigate the risk of a freeze-induced firestorm.

Attachments:

### FIRM Information

Is the project located within a hazard area:

Other identified high hazard area

If other identified high hazard area, please specify:

East Bay Hills - State High Fire Hazard Areas

Is there a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM) available for your project area?

No

Enter FIRM Panel Number:

Is the project site marked on the map?

Select Flood Zone Designation

## Scope of Work

What are the goals and objectives of this activity?

In the project location, the understory is a rich assembly of native tree and shrub species growing beneath a canopy overwhelmingly comprised of resprouted eucalyptus trees. The eucalyptus reproduces rapidly from nuts and resprouts, increasing the fuel load and density. Additionally, a small percentage of the canopy assemblage comprises exotic acacia species, which also spread rapidly and produce flammable litter. Monterey Pine, another fire prone exotic tree, is also present in the project area and will be removed in favor of the native, firesafe, trees. The management strategy promotes a forest conversion: the emerging native forest of California Bay, Oak, Maple, Buckeye, Redwood and Hazelnut will be retained and the existing eucalyptus-dominated exotic canopy forest will be eradicated. The native species produce either considerably lesser fuel loads or are most fuel-productive well before the peak of the regional fire season. During the project, the native understory will be protected, while the exotic trees will be removed and their stump cambium chemically treated with herbicide to prevent re-sprouting. Felled eucalyptus, pine and acacia will be either removed – most will then be chipped – or lopped and scattered or chipped and scattered on the project site. Logs will be placed and retained as a component of the sediment/erosion control measures to be employed and will serve as habitat supporting a variety of wildlife. Protection of the native species, and ongoing management after project completion, will ensure a successful conversion protective of natural and recreational resource values, including but not limited to habitat, hydrology, soils and geology, and air quality. All cut tree stumps shall receive annual follow-up treatment of herbicides (Garlon 4, Stalker) on any emerging stump sprouts, to ensure the permanent elimination of eucalyptus from the project area. Follow up treatment of resprouts will be conducted until 100% resprout suppression is obtained. Additionally, eucalyptus seedlings emerging from the latent seed stock present in the project area will be managed over time to prevent re-colonization of this invasive species. The project duration is anticipated to be 24 - 36 months, with 20 to 30 weeks of actual vegetation removal work. Follow-up treatment will occur at least quarterly, and will be conducted as an ongoing maintenance operation beyond the scope of the proposed grant. Follow-up efforts required for successful eradication of all eucalyptus resprouts and seedlings are anticipated to be 7 to 10 years.

Briefly describe the need for this activity.

Refer to the response for Question 1

Describe the problems this activity will address.

Refer to the response for Question 1

Describe the methodology for implementing this activity.

Refer to the response for Question 1

If you would like to make any comments, please enter them below.

A sample project specification is provided for review. This project was completed within the past few months, on time, on budget and no community objection. This latter fact is remarkable given the number of trees removed and their prominent placement near a scenic overlook.

Attachments:

[Frowning Ridge Phase 3 Project Specs \(PGE\).doc](#)

## Enter Work Schedule

| Description Of Task                                  | Starting Point | Unit Of Time | Duration | Unit Of Time | Work Complete By                                                              |
|------------------------------------------------------|----------------|--------------|----------|--------------|-------------------------------------------------------------------------------|
| Project Pre planning: define scope, approach, timing | 1              | MONTHS       | 3        | MONTHS       | Fire Mitigation Manager, Program Committee                                    |
| Environmental Compliance                             | 4              | MONTHS       | 8        | MONTHS       | UC: Environmental Planning , Environment, Health and Safety , Program Manager |
| Contract Planning                                    | 9              | MONTHS       | 1        | MONTHS       | Program Manager                                                               |
| Award Bid                                            | 10             | MONTHS       | 1        | WEEKS        | Program Manager                                                               |
| Project Management                                   | 11             | MONTHS       | 24       | MONTHS       | Program Manager                                                               |

|                                                       |    |        |    |        |                                                        |
|-------------------------------------------------------|----|--------|----|--------|--------------------------------------------------------|
| Contract Work Period                                  | 11 | MONTHS | 24 | MONTHS | Contractors                                            |
| Project Close Out/ Punch List                         | 34 | MONTHS | 1  | MONTHS | Program Manager                                        |
| Photo Journal/ Success Story Development              | 34 | MONTHS | 2  | MONTHS | Program Manager and staff                              |
| Grant Close Out                                       | 35 | MONTHS | 1  | MONTHS | Program Manager, Accounting, Sponsored Projects Office |
| Estimate the total duration of the proposed activity: |    |        | 38 | MONTHS |                                                        |

**Vegetation Management - Wildfire (300.2)**

Property Information Not Applicable

Property Owner's Name

Address

City

State

ZIP

Action

### Decision Making Process

Describe the process you used to decide that this project is the best solution to the problem.

The proposed project is the culmination of planning within the regional Hills Emergency Forum (HEF) and within the internal campus Fire Mitigation Committee. Specific project planning has been ongoing with the East Bay Regional Park District, the main landowner adjacent to UC properties. Participants in the planning of the project include the members of the Hills Emergency Forum (HEF): City of Berkeley, City of Oakland, City of El Cerrito, East Bay Municipal Utility District, East Bay Regional Park District, Lawrence Berkeley National Laboratory and California Department of Forestry and Fire Protection (CDF). Public-sector and non-profit private-sector participants in the concept planning include the Claremont Canyon Conservancy, members of the Berkeley and Oakland Fire Commission, and the North Hills Phoenix Association. In order to employ adaptive management techniques and to work within limited budgets, the complete canyon conversion project has been undertaken in phases. In 2004, 3 projects removing over 2300 trees have been completed along the ridgeline east of and adjacent to, the proposed project site. The element of this project, and will be consolidated to two to three work seasons (July 2006 - June, 2008). Environmental mitigation requirements may necessitate a somewhat more gradual pace, but this will keep costs to a minimum and satisfy certain environmental concerns. (Faunal refuge and migration) Environmental compliance was completed prior to execution of all previous phases of the UC projects through approval of CEQA documentation and consultations with the San Francisco Regional Water Quality Control Board, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game. No permits were required, and it is anticipated that – due to the similarity in conditions – CEQA and permitting reviews will be nearly identical to the already-completed phases. Should Federal funding be granted, NEPA review would be conducted per statute. However, based on previous review and consultations, no significant and/or cumulative negative impacts to aesthetics, agricultural resources, air quality, biological resources, cultural/historical resources, geology, hydrology, land use, noise, public services, recreational resources, transportation or utilities are anticipated. Under agreement with the residential neighbors, this project, closest to the homes, was agreed to be made a priority in the program, as this represents the actual interface with urban structures.

Explain why this project is the best alternative.

CEQA environmental review and compliance is fully complete: the campus has an approved programmatic Environmental Impact Report, including an approved, CEQA-mandated Mitigation Monitoring and Reporting Program covering the vegetation project under submission. The proposed project is the best balance of all environmental factors, including biological, hydrological, air, land, safety, aesthetic, programmatic. The project has been designed to minimize disturbance and increase value of many of the factors shown above. Other options, including NO PROJECT, have been reviewed and discarded in the environmental review process. The eradication of the eucalyptus forest – as a goal – is the best method to cost-effectively control the vegetation management problem. Previous efforts have targeted the eucalyptus for removal, but had not eradicated the plant, so the trees grew back rapidly – up to 15 feet per year! The plan to allow the native plant species to succeed the invasive eucalyptus is thought to promote a sustainable, cost-effective approach, that has won broad acceptance from the community, including environmental activists and native plant societies.

Comments:

The key to long term value and success in these heavy fuels removal projects is to focus on FOLLOW THROUGH. Several times in the past (1975, 1990) eucalyptus trees have been removed over large parcels of land, but the living stumps were not killed, and the trees resprouted. Within 15 years, these same eucalyptus trees have grown to heights exceeding 110 feet, with diameters up to 26 inches – an incredible growth rate – the very reason the trees were erroneously imported. Management now understands and appreciates that the eradication must be completed, so that this expense need not be felt again in a generation. Recent projects are showing great success in this area, primarily through constant, aggressive retreatment. If we eradicate the eucalyptus, the resulting native plants will provide a slower growing, more firesafe alternative, which whose benefit will accrue far beyond the stated 15 life cycle of the project.

Attachments:

## Vegetation Management - Wildfire

| Item Name                                      | Grant Budget Class | Subgrant Budget Class | Unit Quantity | Unit of Measure | Unit Cost (\$)    | Cost Estimate (\$)   |
|------------------------------------------------|--------------------|-----------------------|---------------|-----------------|-------------------|----------------------|
| Project Pre-planning                           | Contractual        | Personnel             | 1.00          | Each            | \$ 16,947.70      | \$ 16,947.70         |
| Environmental Compliance                       | Contractual        | Personnel             | 1.00          | Each            | \$ 13,867.00      | \$ 13,867.00         |
| Contract Planning                              | Contractual        | Personnel             | 1.00          | Each            | \$ 5,393.00       | \$ 5,393.00          |
| Project Management                             | Contractual        | Personnel             | 1.00          | Each            | \$ 32,357.00      | \$ 32,357.00         |
| Project Close Out                              | Contractual        | Personnel             | 1.00          | Each            | \$ 3,082.00       | \$ 3,082.00          |
| Photo documentation, success story development | Contractual        | Personnel             | 1.00          | Each            | \$ 5,393.00       | \$ 5,393.00          |
| Construction - tree removal operations         | Contractual        | Contractual           | 66.00         | Acre            | \$ 4,954.55       | \$ 327,000.30        |
|                                                |                    |                       |               |                 | <b>Total Cost</b> | <b>\$ 404,040.00</b> |

**Total Project Cost Estimate: \$ 404,040.00**



## Match Sources

|                              |               |            |
|------------------------------|---------------|------------|
| Activity Cost Estimate       | \$ 404,040.00 |            |
| Federal Share Percentage     | 70%           |            |
| Non-Federal Share Percentage | 30%           |            |
|                              | Dollars       | Percentage |
| Proposed Federal Share       | \$ 282,828.00 | 70%        |
| Proposed Non-Federal Share   | \$ 121,212.00 | 30%        |

## Matching Funds

| Source Agency        | Name of Source Agency                   | Funding Type | Amount (\$)          | Action                       |
|----------------------|-----------------------------------------|--------------|----------------------|------------------------------|
| State Agency Funding | Fire Program Annual Operating Budget    | Cash         | \$ 66,207.00         | <a href="#">View Details</a> |
| State Agency Funding | Office of Emergency Preparedness Budget | Cash         | \$ 55,005.00         | <a href="#">View Details</a> |
| <b>Grand Total</b>   |                                         |              | <b>\$ 121,212.00</b> |                              |

If you would like to make any comments, please enter them below.

The attached letter to the University Office of the President, notes the request for a WAIVER OF INDIRECT COSTS for the submitted project. In addition, this correspondence notes the commitment of extant program funds to cover the match required. All funding streams from the applicants side are in place. CLARIFICATION: The source of matching funds for the proposed grants are entirely composed of State funds and do not include any waived indirect costs. The justification to the UC Presidents Office for the waiver did state that waived indirect costs MAY be used, but in the final application, these were NOT USED as a component of the match. The matching funds noted above are budgeted and in place for the proposed project. The Fire Program funds will be used toward contracting costs, supplies and materials and the Emergency Preparedness Budget will pay for Force Account labor to conduct necessary planning, management, documentation of the contact work. Grant Administration and reporting is excluded in both the work scope and the project budget.

## Attachments

[Indirect Cost Waiver.doc](#)

|                                      |                                                 |
|--------------------------------------|-------------------------------------------------|
| Funding Source                       | State Agency Funding                            |
| Name of Funding Source               | Fire Program Annual Operating Budget            |
| Funding Type                         | Cash                                            |
| Amount                               | \$ 66,207.00                                    |
| Date of availability                 | 07-01-2006                                      |
| Funds commitment letter date         | 09-02-2005                                      |
| Attachment (funds commitment letter) | <a href="#">Matching Cost Certification.doc</a> |
| Funding Source                       | State Agency Funding                            |
| Name of Funding Source               | Office of Emergency Preparedness Budget         |
| Funding Type                         | Cash                                            |
| Amount                               | \$ 55,005.00                                    |
| Date of availability                 | 07-01-2006                                      |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Funds commitment letter date         | 01-15-2005                      |
| Attachment (funds commitment letter) | Matching Cost Certification.doc |

# EXHIBIT N

# East Bay Regional Park District Carbon Sequestration Evaluation

## Executive Summary

The East Bay Regional Park District (District) owns and manages approximately 98,600 acres in Alameda and Contra Costa Counties. The relatively undeveloped and undisturbed natural communities on these lands provide valuable ecosystem services to the surrounding communities and towns. This includes the service of climate regulation. Climate regulation pertains to a landscape's ability to capture and store carbon, also known as *carbon sequestration*. The movement, or flux, of carbon from one source to another plays an important role in regulating Earth's climate. Recent research and long-term atmospheric measurements have demonstrated that increased levels of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases (GHGs) in the atmosphere are contributing to global climate change. To combat climate change, California is implementing aggressive regulations, namely the Global Warming Solutions Act of 2006 (commonly known as Assembly Bill [AB] 32), to decrease emissions of CO<sub>2</sub> and other GHGs, encourage carbon sequestration, and adapt to the effects of climate change.

A carbon sequestration analysis was conducted to demonstrate the value of the District's lands in climate regulation and its role in supporting California's aggressive goals for GHG reduction set forth in recent legislation. To do this, the value of the District's land as a carbon stock and sink was evaluated. The size of the carbon stock, combined with the amount of amount of carbon flux, identifies the land's value for carbon sequestration.

The average amount of CO<sub>2</sub> sequestered annually by the District's lands is estimated to be 91,157 metric tons (Mt). This represents an equivalent offset of approximately 0.02% of California's GHG emissions. In more familiar terms, the carbon sequestration occurring on District lands is equivalent to removing 16,317 passenger cars and sport-utility vehicles (SUVs) from the road annually, saving approximately 10.4 million gallons of gasoline (California Air Resources Board 2007). In addition to sequestering CO<sub>2</sub> during photosynthesis, an estimated 66,296Mt of oxygen (O<sub>2</sub>) is release during respiration annually. This is equivalent to the amount of oxygen consumed by the city of Piedmont in 1 year. By preserving natural land in perpetuity, the natural communities on District lands represent an important permanent carbon stock (2,759,206 Mt of carbon [Mt C]). Preserving the land in its natural state avoids future emissions from land cover conversion and subsequent emissions from a developed landscape. Continued preservation and management of the natural, undeveloped landscape will provide vital climate regulation service to the ecosystem, now and in the future.

## Introduction

The following report provides a carbon sequestration evaluation of the District's lands. The report begins with the context for the carbon evaluation by providing a brief overview of the carbon cycle, climate change, and California climate change regulation. The report also describes the methodology and the results of the carbon sequestration evaluation and concludes with a discussion of the importance of the District's lands for carbon sequestration.

## Background

The District owns and manages approximately 98,600 acres in Alameda and Contra Costa Counties. In accordance with its mission to provide recreational opportunities, ensure the natural beauty of the land, and protect wildlife habitat, these lands remain relatively undeveloped and undisturbed. In addition to supporting the District's mission, these lands also provide valuable ecosystem services,<sup>1</sup> including climate regulation. Climate regulation pertains to a landscape's ability to capture and store carbon, also known as carbon sequestration. This ecosystem service has increased in importance as a way to mediate the expected effects of climate change at the local, state, and global levels.

The movement, or flux, of carbon from one source to another plays an important role in regulating Earth's climate. Recent trends have demonstrated that increased levels of CO<sub>2</sub> and other GHGs in the atmosphere are contributing to global climate change. To combat climate change, California is implementing aggressive regulations to decrease emissions of CO<sub>2</sub> and other GHGs, encourage carbon sequestration, and adapt to the effects of climate change. The carbon sequestration analysis presented in this report is best understood in the context of the carbon cycle, climate change predictions, and climate change regulation. Each of these topics is discussed below.

## The Carbon Cycle

In its most basic form, the carbon cycle is the exchange of carbon among terrestrial, atmospheric, and aquatic systems, also known as *carbon reservoirs*. Carbon is exchanged at various rates, called fluxes, which are determined by the characteristics of each of the reservoirs. The amount of carbon flux determines whether a landscape is a carbon source or a carbon sink. Areas considered carbon sources are net emitters of carbon into the atmosphere. In contrast, carbon sinks are net capturers of carbon, creating a carbon stock within a given reservoir.

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<sup>1</sup> Ecosystem services are processes occurring in nature that provide benefits to humans. Examples of ecosystem services include water filtration and storage, air purification, waste decomposition, soil fertility regeneration, biodiversity, and climate regulation (Daily et al. 1997).

The terrestrial carbon reservoir is composed of stores of carbon on and near Earth's surface that include animals, plants, soils, rocks, and fossil fuels. Because of their large biomass on Earth's surface and their positive carbon flux, plants are an important carbon sink. Through photosynthesis, plants take up CO<sub>2</sub> from the atmosphere. Along with water, nutrients, and minerals, CO<sub>2</sub> is incorporated in the living tissue of plants to allow for development, growth, and reproduction. This is the process through which carbon is sequestered into plants as a carbon stock. Animals and humans use the carbon stock incorporated into plants for food, shelter, and energy. Carbon is returned into the atmosphere in several ways, such as emissions from plants (e.g., respiration and decay), other natural systems and processes (e.g., volcanic eruptions and fire caused by lightning strikes), and human activities (e.g., fossil fuel combustion and deforestation). Some dead organic matter is resistant to decay, causing the stored carbon to accumulate in the soil.

By far, the largest aquatic carbon reservoir is in the oceans of the world. In the oceans, carbon cycles between water and sediments and between water and the atmosphere. Chemical reactions and physical processes allow for CO<sub>2</sub> exchange across the ocean surface. Within the ocean, CO<sub>2</sub> is used by phytoplankton and cycles back into ocean water upon their death and decay, with a small amount sinking deeper into the ocean to be incorporated into ocean sediments. Transformation of carbon accumulated in the soils and ocean sediments millions of years ago supplies us with fossil fuels today (Houghton 2007).

The carbon cycle most relevant to this analysis is between terrestrial and atmospheric reservoirs and the rate at which it occurs (i.e., the flux).

## Climate Change

The natural land cover types of the District's lands play an important role in climate regulation. They represent both permanent carbon stocks and net sequesters of carbon as the natural communities grow and flourish. As such, they are also important carbon sequestration resources to help combat the potential effects of climate change.

Climate change is defined as any significant change in climate metrics, including temperature, precipitation, and wind patterns, over a period of time. Climate change—broadly speaking—may result from natural or human activities that change atmospheric composition. Activities such as fossil-fuel combustion, deforestation, and other changes in land use are resulting in the accumulation of trace GHGs, such as CO<sub>2</sub>, in the atmosphere. An increase in GHG emissions results in an increase in Earth's average surface temperature, commonly referred to as *global warming* (Intergovernmental Panel on Climate Change 2007). Global warming is expected, in turn, to affect weather patterns, average sea levels, ocean acidification, chemical reaction rates, precipitation rates, and other climatic conditions; such changes, taken collectively, are commonly referred to as *climate change*.

Over the past 100 years, the global average temperature has increased by approximately 0.6° Celsius. This trend is predicted to continue, based on feedback mechanisms of current GHG levels and predicted increases in the production or release of atmospheric GHGs (Intergovernmental Panel on Climate Change 2007). The potential effects of climate change include:

- changes in water availability and quality;
- increases in the frequency and severity of extreme weather events, such as storms, heat waves, and flooding;
- changes in cloud cover and rainfall patterns;
- increased frequency and severity of ozone exceedances,<sup>2</sup> due in part to changes in photochemistry;
- sea level rises; and
- increased intrusion of seawater into estuaries as a result of sea level rises.

Although an increase in temperature in itself will have direct consequences on species viability and natural community distribution and composition, the effects of climate change on the amount and timing of precipitation and the frequency of severe weather and related disturbance events are also likely to affect the District's lands.

California is the world's 12th to 16th largest emitter of CO<sub>2</sub> (California Energy Commission 2006) and is responsible for approximately 2% of the world's CO<sub>2</sub> emissions (California Energy Commission 2006).<sup>3</sup> In California, transportation is responsible for 41% of the state's GHG emissions, followed by the industrial sector (23%), electricity generation (20%), agriculture and forestry (8%), and other sources (8%) (California Energy Commission 2006). Emissions of CO<sub>2</sub> and nitrous oxide (N<sub>2</sub>O) are byproducts of fossil fuel combustion, among other sources. Methane (CH<sub>4</sub>), a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of CO<sub>2</sub> include uptake by vegetation and dissolution into the ocean. (A CO<sub>2</sub> *sink* is a resource that absorbs CO<sub>2</sub> from the atmosphere. The classic example of a sink is a forest in which vegetation absorbs CO<sub>2</sub> and produces oxygen through photosynthesis). California GHG emissions in 2002 totaled approximately 491 million metric tons (MMt) of CO<sub>2</sub> equivalents.

## California Climate Change Regulation

To decrease the potential effects of climate change, California has enacted aggressive regulations to reduce GHG emissions, including CO<sub>2</sub>, and provide incentives for carbon sequestration. A summary of the key state legislation, the Global Warming Solutions Act of 2006 (AB 32), is provided below.

<sup>2</sup> Ozone exceedances are levels of ground level ozone above the national ambient air quality standards (NAAQS). The current NAAQS for ozone is an 8-hour average of 0.08 parts per million (ppm). An ozone level above this value is considered an ozone exceedance.

<sup>3</sup> The range of rankings as an emitter of CO<sub>2</sub> is because of differences in GHG inventories and year-to-year rankings.

## Global Warming Solutions Act (Assembly Bill 32)

The Global Warming Solutions Act of 2006 provides a framework to reduce GHG emissions in California. The goal of this act is to reduce emissions to 1990 levels by 2020. It directs the enforcement of a statewide cap that would begin phasing in by 2012. AB 32 was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. Key AB 32 milestones are listed below.

- June 30, 2007—Identification of “discrete” early action GHG emissions reduction measures.
- January 1, 2008—Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.
- January 1, 2009—Adoption of a scoping plan for achieving GHG emission reductions.
- January 1, 2010—Adoption and enforcement of regulations to implement the “discrete” actions.
- January 1, 2011—Adoption of GHG emission limits and reduction measures by regulation.
- January 1, 2012—GHG emission limits and reduction measures adopted in 2011 become enforceable.

The GHG reduction goals of AB 32 have focused renewed attention to the natural communities within California and their role in the carbon cycle. The newly released AB 32 draft scoping plan includes a sustainable forestry target as part of the emissions reduction strategy (California Air Resources Board 2008). California forests currently represent a net sink of 5 MMt of CO<sub>2</sub> equivalents per year. The goal of the sustainable forest target is to maintain forests as a net sink. Although the focus of the strategy is on industrial forests, five voluntary opportunities for emissions reductions have been identified. These opportunities represent voluntary actions that private and public land owners and managers can implement to support the GHG reduction goals of AB 32. Included as voluntary actions are forest conservation, forest management, afforestation/reforestation, and fuels management. Each of these voluntary reduction opportunities is described below, along with how the District is currently supporting the action.

- **Forest conservation.** The forest conservation reduction opportunity is aimed at both preventing land cover conversion from forest to developed land and increasing the amount of forested land permanently protected from development. Accordingly, funding incentives are available for land use planning, the establishment of conservation easements, and mitigation banking. In Contra Costa County alone, the District anticipates increasing the protection of woodlands in its parks by up to 400 acres.<sup>4</sup>

<sup>4</sup> Under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan, a portion of the land purchased to offset development in the participating jurisdiction will be turned over to the District for management. Over the 30-year permit term, this includes up to 400 acres of oak woodlands.



- **Forest management.** The forest management reduction opportunity is aimed at increasing the amount of carbon stored on managed forestlands. Implementation approaches include the extension of riparian zones required by California Forest Practice Rules<sup>5</sup> and improved timber stand management (i.e., increasing conifer stock and thinning stands to increase growth rate). Currently, the District maintains natural land cover along all its riparian zones, including approximately 740 acres of riparian forest and scrub. In addition, the District is targeting the restoration of its nonnative land cover types to native vegetation. This would include the replacement of eucalyptus and Monterey pine forest with oak woodlands, oak-bay woodlands, or grasslands. Replacement with hardwoods, such as oak or bays, would increase the per-acre carbon stock and sequestration values as well as reduce fire risk.
- **Afforestation/reforestation.**<sup>6</sup> The afforestation/reforestation reduction opportunity is aimed at increasing the forested acres of land. This opportunity both increases carbon stock and carbon sequestration by converting a non-forested land cover to a forested land cover. This reduction opportunity has the potential for incorporation into an offset program once a market for GHG offsets is established. The District can use this carbon sequestration analysis as a planning tool to identify opportunities in increasing forest cover that can be used toward offset credits.
- **Urban forestry.** The urban forestry reduction opportunity is aimed at increasing trees in urban areas to sequester carbon, reduce energy demand through increased shading, and provide biomass for fossil fuel alternatives from urban “green” waste. Implementation approaches include both agency tree planting through state-supported efforts and voluntary planting by homeowners. The District supports this goal by maintaining the natural landscape to the extent possible and incorporating native trees into its developed areas (i.e., golf courses and picnic areas).
- **Fuels management.** The fuels management reduction opportunity is aimed at reducing emissions from forest fuels management while reducing forest fuel loads. In turn, this will reduce wildfire frequency and intensity and reduce carbon emissions from wildfires. Implementation approaches include mechanical fuel treatment to crush brush, removing trees that serve as ladder fuels, and forest biomass use in biopower and biofuel production. The District currently uses an integrated approach to fuel management to reduce fuels loads, fire risks, and fire intensity. Techniques include grazing, controlled burns, mechanical thinning, the application of herbicides, the use of native herbivores, and the replacement of eucalyptus and Monterey pine forests with less fire-prone species.

Implementation of these actions on a statewide basis is anticipated to reduce emissions by at least 2 MMT of CO<sub>2</sub> equivalents by 2020. Understanding the carbon flux and stock of the natural communities will influence land management and land use planning and change as the strategies for meeting the

<sup>5</sup> The California Forest Practice Rules are the regulations that govern forest management across the state.

<sup>6</sup> Afforestation is the planting of new forests on lands where forests have not historically occurred. Reforestation is the planting of new forests on lands where forests historically have occurred.

GHG reduction goals continue to be developed. As exemplified above, the District currently supports the goals of AB 32 and the reduction of GHG emissions through the preservation and management of the land it currently owns, as well as the continued expansion of its park system. Protecting land in perpetuity preserves the carbon stock of the natural communities and prevents future emissions due to land use changes. In addition, it provides opportunities for the management of lands to improve the carbon stock and sink values (i.e., the restoration of degraded landscapes to increase their vegetative cover). In conducting management and maintenance activities, the District has also made a conscious effort to reduce emissions by down-sizing vehicles, increasing the number of alternative fuel vehicles (i.e., biodiesel) and adding hybrid vehicles to the service fleet. Preservation, management, and maintenance of the natural communities demonstrate the District's role in supporting the GHG reduction goals of AB 32.

## Methods

Each land cover type on District lands represents a carbon stock. The carbon flux of each of these stocks determines its carbon sequestration value. The value of the District's lands as a carbon stock and sink in the terrestrial carbon reservoir was the basis of this evaluation. The size of the carbon stock combined with the amount of carbon flux identifies the land's value for carbon sequestration.

The methods used to evaluate the carbon sequestration value of the District's lands include a review of literature and an analysis using geographic information system (GIS) and spreadsheets. This approach allowed for the identification of land cover types and their areas, as well as a series of carbon factors, including current mean flux density, current flux, carbon stocks, and mean carbon stocks. In addition to carbon factors, the amount of oxygen produced was calculated. Each of the variables is defined below.

- *Land cover type* is the classification of types of natural and developed land cover into categories based on their natural vegetative communities or developed use, or both.
- *Area* is the extent of each land cover type within the District's park boundaries. This variable is measured in acres.
- *Current mean flux density* is the per-acre quantity of carbon sequestered per year. This variable is measured in megagrams of carbon (Mg C).
- *Current flux* is the current mean annual flux density on an area basis (e.g., area x current mean flux density). This variable is measured in Mt C. It can be translated as the average amount of carbon sequestered on an annual basis by each land cover type. Using molecular weight conversion factors, the amount of annual carbon sequestered can be expressed in terms of CO<sub>2</sub>. In addition, the amount of oxygen (O<sub>2</sub>) released can be derived by relating the CO<sub>2</sub> taken in during photosynthesis to the O<sub>2</sub> released during respiration.

- *Mean carbon stock* is the average amount of carbon stored in the biomass of each land cover type per acre. This variable is measured in Mt C. It is equivalent to the amount of carbon that each land cover type contributes to the carbon reservoir.
- *Carbon stock* is the average amount of carbon permanently incorporated into the biomass of each land cover type on an area basis (e.g., mean carbon stock x area). This variable is measured in Mt C.

Together, these variables were used to evaluate the carbon sequestration value of the District's lands.

## Land Cover Data

Land cover data served as the basis for the carbon sequestration analysis. A GIS-based approach was used to identify the type and extent of the land cover types within the District's jurisdiction. This involved both data processing and geospatial analysis. Park boundary data were supplied by the District. The best available land cover data were used to develop a land cover map of all District lands. The most high-resolution dataset comes from District land cover maps. Approximately 43,539 acres (44%) of District lands have been mapped in the field by District staff. The land cover was mapped in the field with the use of orthophotograph-based maps. In the field, the vegetation was checked as it was mapped on hard copy maps. No minimum mapping units were used. For inaccessible sites, the orthophotograph was used to estimate and map the coverage of the land cover type. The field data were then transferred to the GIS directly from the orthophotograph based on recognizable features on the orthophotograph.

The next best available land cover data came from the East Alameda County Conservation Strategy, a plan in process that covers approximately 30,590 acres (31%) of District lands. These land cover maps were developed by ICF Jones & Stokes through on-screen digitizing and classification of aerial photographs from an Air Photo USA San Francisco Bay imagery dataset (November 2005) and a U.S. Department of Agriculture (USDA) National Agriculture Imagery Program imagery dataset (May 2005) and limited field verification. The minimum mapping unit for these maps was 10 acres for all upland land cover types and 0.25 acres for wetland and riparian land cover types.

Approximately 20,004 acres (20%) of District lands were not covered by either land cover map, so California Gap Analysis data were used to complete the coverage. The California Gap Analysis dataset (Davis et al. 1998) comprises land cover maps for 10 major regions of the state. It was derived from 1990 Landsat satellite imagery guided by high-altitude aerial photography, vector overlays of existing vegetation and land use maps, and forest inventory data. Upland types were mapped with a minimum mapping unit of 100 hectares (247 acres), major wetlands were mapped with a minimum mapping unit of 40 hectares (99 acres), and smaller wetlands were encoded as attributes of upland polygons.

The remaining 4,438 acres (5%) of District lands were classified and digitized by ICF Jones & Stokes GIS staff using on-screen aerial photo interpretation of aerial photographs from an Air Photo USA San Francisco Bay imagery dataset (November 2005) and a USDA National Agriculture Imagery Program imagery dataset (May 2005). This new mapping was limited to Brooks Island and open bay areas. The minimum mapping unit used was 10 acres for all upland land cover types and 0.25 acre for open water, wetland, and riparian land cover types.

Figure 1 illustrates the data sources used for land cover mapping on District lands. Approximately 98,600 acres were mapped and classified using 18 land cover types (Table 1). Land cover types on District lands are illustrated in Figures 2a, 2b, and 2c.

## Carbon Factors

A literature review was conducted to identify previous analyses of the carbon sequestration and carbon stock factors of each of the land cover types found on District lands. Much of the District's land sequesters carbon because it includes parkland, forest, and other natural areas that uptake CO<sub>2</sub> during plant growth. The amount of sequestration by each land cover type depends on the vegetation type found on it. The carbon sequestration of the District's land was calculated by finding carbon sequestration factors appropriate for each land type and applying them to the land cover areas. These carbon sequestration factors express carbon uptake as Mt C gained per acre of land each year. To report the total carbon stored by the District's total biomass (i.e., vegetative cover), a carbon stock factor for each type of vegetation was found, indicating the amount of carbon contained in each acre of biomass. For each of the land cover types, a carbon factor for soil carbon was added to both the stock and flux values.

Using the 18 land cover types, carbon sequestration and carbon stock factors were assigned based on several sources. The primary data source for carbon fluxes from scrublands and grasslands was the *Baseline Greenhouse Gas Emissions for Forest, Range, and Agricultural Lands in California* (California Energy Commission 2004).

In regard to carbon stock factors, the report only provided values for grassland and scrubland. The primary data source for forest carbon stock factors was the Carbon On-Line Estimator, a tool developed by the National Council for Air and Stream Improvement (2008). This tool provides factors specific to California for many species mixes. For all land cover types, their stock value includes both soil and non-soil carbon.

Most stock factors and sequestration factors matched the land use categories in Table 1. In cases where there was not a clear match, the closest land cover type was used. Sequestration and carbon stock for developed land, lawns, and open water was assumed to be zero. Additionally, carbon sequestration by cultivated soils was assumed to be zero (California Energy Commission 2006). Agricultural soils generally have changes in carbon stock only if they have been converted

from other land uses in recent history (in which case, they lose carbon) or are part of a conservation or no-till program (in which case, they sequester carbon). Fertilizer application also results in emissions.

The total carbon stock and carbon sequestration values for District lands were estimated by summing across all land cover types.

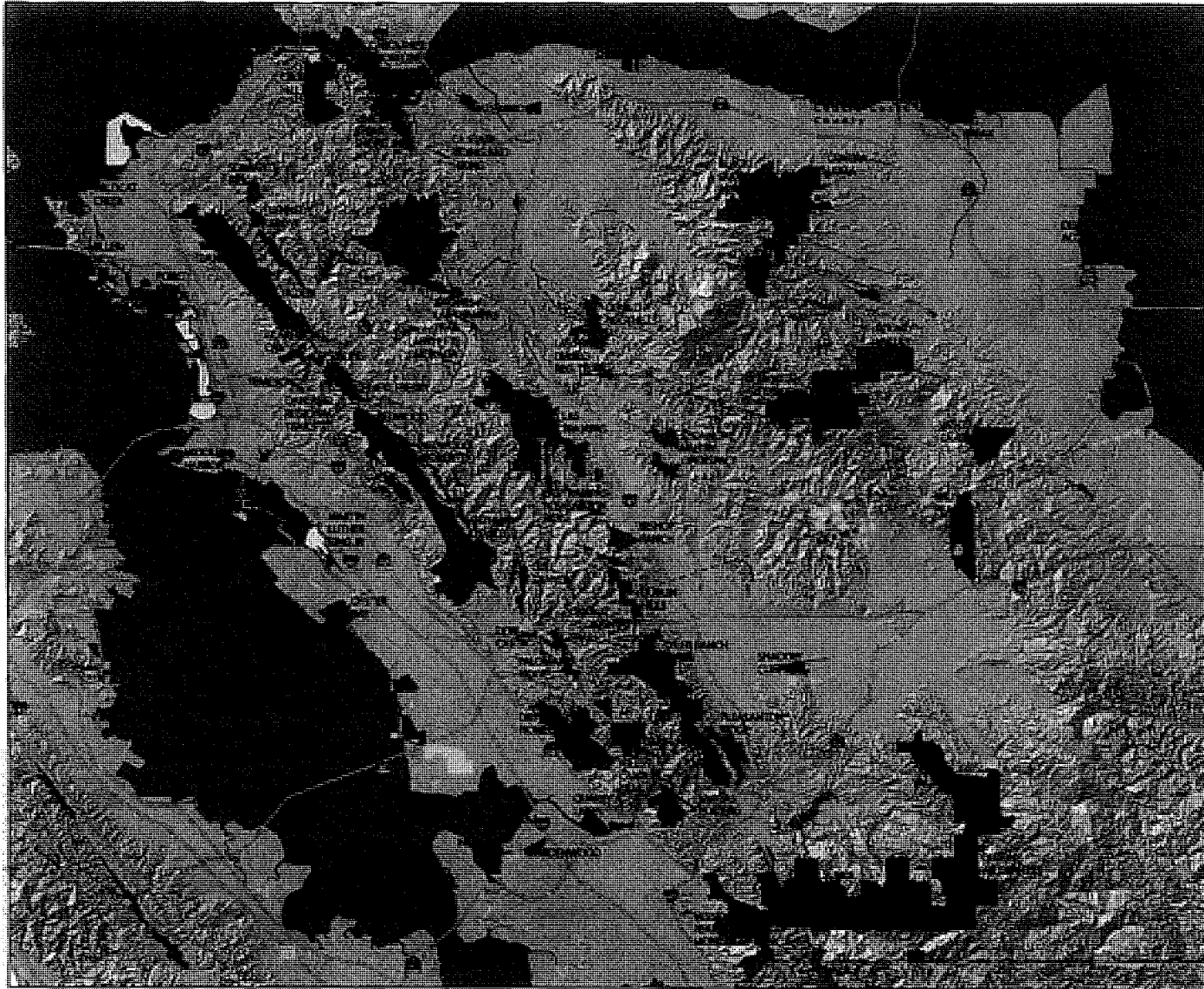
## Results

The variables below were calculated for the land owned by the District (Figures 1, 2a, 2b, and 2c; Tables 1, 2, and 3).

- **Land cover type.** A total of 18 land cover types, 14 natural types and four developed land cover types, were identified and mapped.
- **Area.** A total of 98,571 acres were classified by land cover. The three dominant land cover types are grassland (37.8%), oak woodlands (24.6%), and mixed evergreen forest/oak woodlands (12.8%).
- **Current mean flux density.** Forested land covers have the highest flux density, with redwood and evergreen forests having the highest values (1.0 and 0.7 Mg C per acre per year, respectively).
- **Current flux.** Considering that current flux is the product of area and current mean flux density, the dominant land cover types of grassland, oak woodlands, and mixed evergreen forest/oak woodlands have the highest current flux (4,109; ; and 9,338; 8,909 Mt C per year, respectively). These same land cover types are the highest producers of O<sub>2</sub>, accounting for the release of an estimated 10,936; 24,855; and 23,714 Mt of O<sub>2</sub> annually.
- **Mean carbon stock.** Forested land covers have the highest mean carbon stock, with redwood and evergreen forests having the highest values (223 and 123 Mt C per year, respectively). Redwood forests have nearly double the mean carbon stock of evergreen forests.
- **Carbon stock.** Because of their large areas, both oak woodlands and mixed evergreen forest/oak woodlands represent the largest carbon stocks on District lands, estimated to be 1,487,092 and 794,935 Mt C, respectively. Despite their small area, redwood forests are the next largest contributor to the carbon stocks of the District's lands (105,965 Mt C).

## Conclusions

The District's undeveloped land serves as both a valuable carbon stock and a sink within the terrestrial carbon reservoir. In addition, through respiration, the lands also serve as a source of oxygen. Preservation of natural land cover types prevents the conversion of natural land covers to a developed landscape that would contribute further to the major sources of GHG emissions.

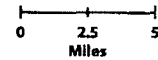


**Figure 1  
Land Cover  
Data Sources**

**Legend**

- Major Road
- - - County Boundary
- ▭ Park Boundary
- Land Cover Data Sources**
- East Bay Regional Parks District (2007)\*
- California Gap Analysis (1998)
- East Alameda County Conservation Strategy (2008)
- ICF Jones & Stokes (2008)
- Water

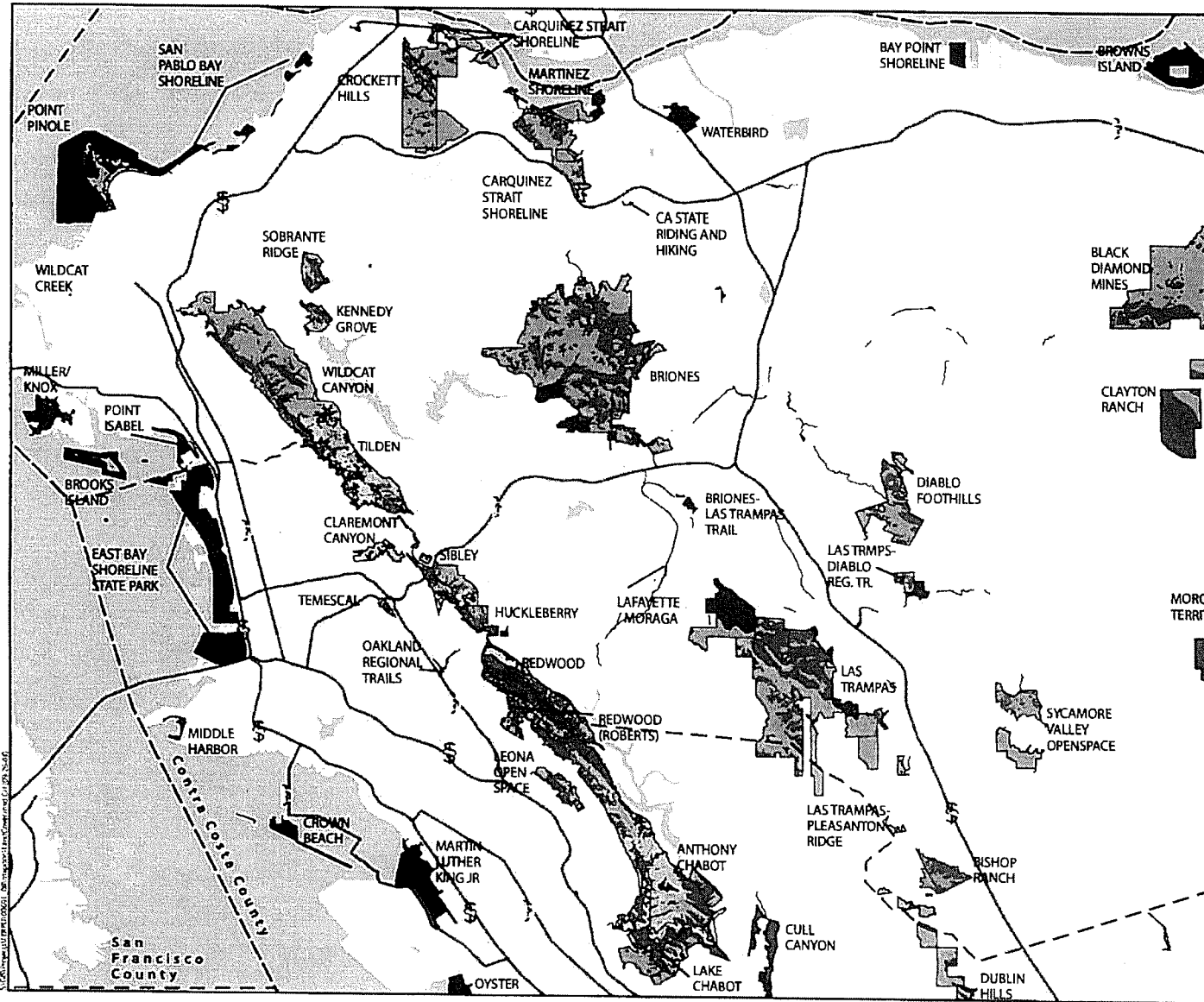
\*Easements are included, but not labeled.



Sources: ESRI (2008) East Bay Regional Parks District (2007), California GAP Analysis (1998), East Alameda County Conservation Strategy (2008), ICF Jones & Stokes (2008)



06121



**Figure 2a**  
**EBRPD Land Cover**

**Legend**

- Major Road
- County Boundary
- Park Boundary\*
- Evergreen forest (conifer/pine)
- Redwood forest
- Mixed evergreen forest/oak woodland
- Oak woodland
- Chaparral and coastal scrub
- Grassland
- Riparian forest and scrub
- Mixed willow riparian scrub
- Open bay
- Pond/reservoir
- Freshwater wetland
- Alkali wetland
- Eucalyptus/acacia forest
- Ornamental woodland
- Cultivated
- Developed
- Golf course/irrigated lawn
- Rural residential

**Natural Land Covers**

**Developed Land Covers**

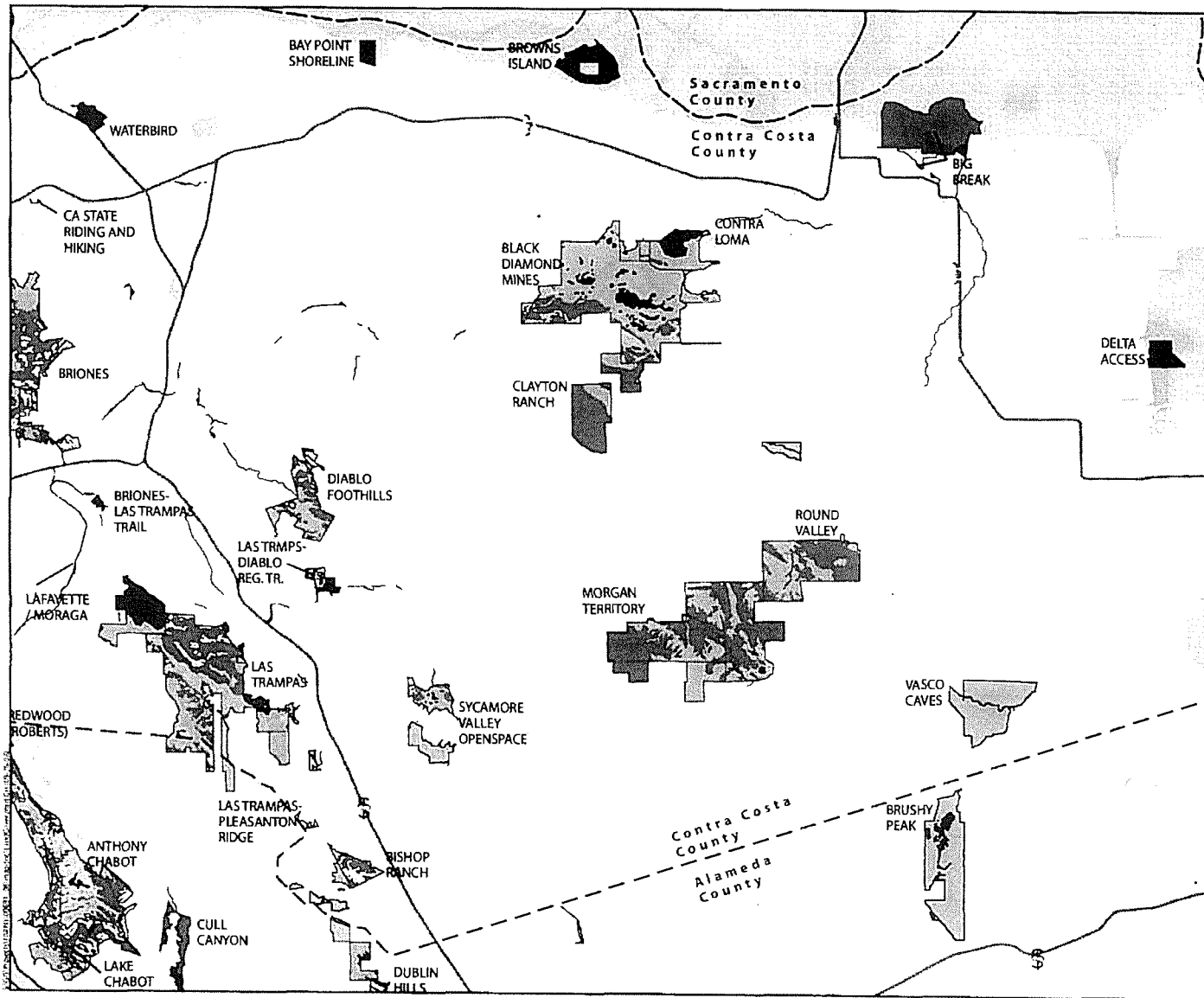
\*Easements are included, but not labeled.

0 2 4  
Miles

Sources: ESRI (2008) East Bay Regional Parks District (2007), California Gap Analysis (1998), East Alameda County Conservation Strategy (2008), ICF Jones & Stokes (2008)

**ICF Jones & Stokes**  
an ICF International Company

06122



**Figure 2b**  
**EBRPD Land Cover**

**Legend**

- Major Road
- - - County Boundary
- Park Boundary\*
- Evergreen forest (conifer/pine)
- Redwood forest
- Mixed evergreen forest/oak woodland
- Oak woodland
- Chaparral and coastal scrub
- Grassland

**Natural Land Covers**

- Riparian forest and scrub
- Mixed willow riparian scrub
- Open bay
- Pond/reservoir
- Freshwater wetland
- Alkali wetland
- Eucalyptus/acacia forest
- Ornamental woodland

**Developed Land Covers**

- Cultivated
- Developed
- Golf course/irrigated lawn
- Rural residential

\*Easements are included, but not labeled.

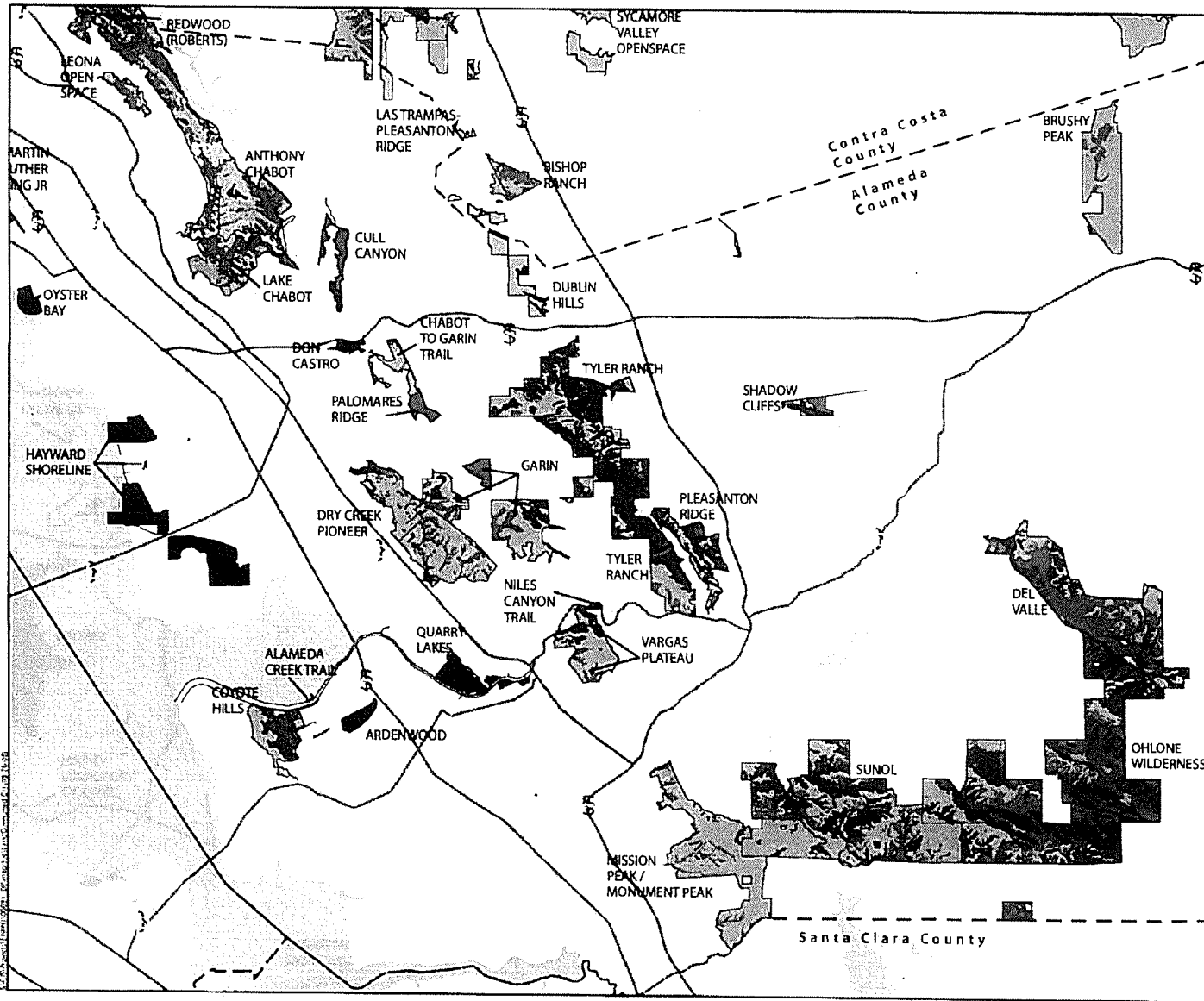
0 2 4  
Miles

Sources: ESRI (2008) East Bay Regional Parks District (2007), California Gap Analysis (1998), East Alameda County Conservation Strategy (2008), KCF Jones & Stokes (2008)

**ICF Jones & Stokes**  
an ICF International Company

06123





**Figure 2c**  
**EBRPD Land Cover**

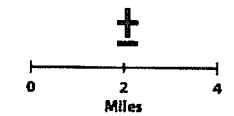
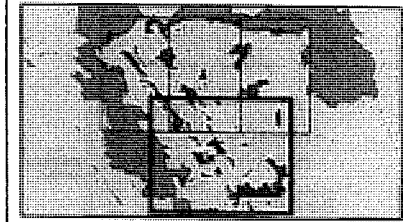
**Legend**

- Major Road
- - - County Boundary
- Park Boundary\*
- Evergreen forest (conifer/pine)
- Redwood forest
- Mixed evergreen forest/oak woodland
- Oak woodland
- Chaparral and coastal scrub
- Grassland
- Riparian forest and scrub
- Mixed willow riparian scrub
- Open bay
- Pond/reservoir
- Freshwater wetland
- Alkali wetland
- Eucalyptus/acacia forest
- Ornamental woodland
- Cultivated
- Developed
- Golf course/irrigated lawn
- Rural residential

**Natural Land Covers**

**Developed Land Covers**

\*Easements are included, but not labeled.



Sources: ESRI (2008) East Bay Regional Parks District (2007), California Gap Analysis (1998), East Alameda County Conservation Strategy (2008), ICF Jones & Stokes (2008)



06124

**Table 1. District Land Cover Types and Extent**

| Vegetation Type                     | Area<br>(acres) | Percent of Study Area<br>(%) |
|-------------------------------------|-----------------|------------------------------|
| <b>Natural Land Covers</b>          |                 |                              |
| Evergreen forest (conifer/pine)     | 503             | 0.5                          |
| Redwood forest                      | 475             | 0.5                          |
| Mixed evergreen forest/oak woodland | 12,573          | 12.8                         |
| Oak woodland                        | 24,223          | 24.6                         |
| Chaparral and coastal scrub         | 6,428           | 6.5                          |
| Grassland                           | 37,304          | 37.8                         |
| Riparian forest and scrub           | 599             | 0.6                          |
| Mixed willow riparian scrub         | 150             | 0.2                          |
| Open bay                            | 4,438           | 4.5                          |
| Pond/reservoir                      | 1,133           | 1.1                          |
| Freshwater wetland                  | 1,148           | 1.2                          |
| Alkali wetland                      | 1,742           | 1.8                          |
| Eucalyptus/acacia forest            | 1,633           | 1.7                          |
| Ornamental woodland                 | 48              | 0.05                         |
| <b>Developed Land Covers</b>        |                 |                              |
| Cultivated                          | 401             | 0.4                          |
| Developed                           | 5,363           | 5.4                          |
| Golf course/irrigated lawns         | 247             | 0.3                          |
| Rural residential                   | 165             | 0.2                          |
| <b>Total</b>                        | <b>98,571</b>   | <b>100.0</b>                 |

Sources: East Bay Regional Parks District (2007); California Gap Analysis (1998); East Alameda County Conservation Strategy (2008); ICF Jones & Stokes (2008).

**Table 2. Area, Carbon Fluxes, and Carbon Stocks of District Land Cover Types**

| Vegetation Type                     | Area<br>(acres) | Current Mean Flux Density<br>(Mg C per acre per year) | Current Flux<br>(Mt C per year) | Mean Carbon Stocks<br>(Mt C per acre) | Carbon Stocks<br>(Mt C) |
|-------------------------------------|-----------------|-------------------------------------------------------|---------------------------------|---------------------------------------|-------------------------|
| <b>Natural Land Covers</b>          |                 |                                                       |                                 |                                       |                         |
| Evergreen forest (conifer/pine)     | 503             | 0.7                                                   | 356                             | 123                                   | 61,967                  |
| Redwood forest                      | 475             | 1.0                                                   | 451                             | 223                                   | 105,965                 |
| Mixed evergreen forest/oak woodland | 12,573          | 0.7                                                   | 8,909                           | 63                                    | 794,935                 |
| Oak woodland                        | 24,223          | 0.4                                                   | 9,338                           | 61                                    | 1,487,092               |
| Chaparral and coastal scrub         | 6,428           | 0.1                                                   | 708                             | 15                                    | 94,390                  |
| Grassland                           | 37,304          | 0.1                                                   | 4,109                           | 1                                     | 47,934                  |
| Riparian forest and scrub           | 599             | 0.1                                                   | 66                              | 15                                    | 8,801                   |
| Mixed willow riparian scrub         | 150             | 0.1                                                   | 17                              | 78                                    | 11,740                  |
| Open bay <sup>1</sup>               | 4,438           | 0.0                                                   | 0                               | 0                                     | 0                       |
| Pond/ reservoir <sup>2</sup>        | 1,133           | 0.0                                                   | 0                               | 0                                     | 0                       |
| Freshwater wetland <sup>2</sup>     | 1,148           | 0.1                                                   | 126                             | 15                                    | 16,852                  |
| Alkali wetland <sup>2</sup>         | 1,742           | 0.1                                                   | 192                             | 15                                    | 25,582                  |
| Eucalyptus/acacia forest            | 1,633           | 0.4                                                   | 630                             | 63                                    | 103,251                 |
| Ornamental woodland                 | 48              | 0.1                                                   | 5                               | 15                                    | 698                     |
| <b>Totals</b>                       |                 |                                                       |                                 |                                       |                         |
| Natural land covers                 | 92,396          |                                                       | 24,906                          |                                       | 2,759,206               |
| Developed land covers <sup>3</sup>  | 6,175           |                                                       | --                              |                                       | --                      |
| <b>Total</b>                        | <b>98,571</b>   |                                                       | <b>24,906</b>                   |                                       | <b>2,759,206</b>        |

Sources: California Energy Commission 2004; National Council for Air and Stream Improvement 2008.

Notes:

Mg C = Megagrams of carbon

Mt C = metric tons of carbon

<sup>1</sup>Open bay includes tidal wetlands. Tidal wetlands are one of the most productive ecosystems with one of the highest per acre carbon sequestration values; however, the quality of the data did not allow for differentiation between open bay and tidal wetlands.

<sup>2</sup>Wetland land cover types both sequester carbon and produce methane. As such, they may be a net emitter of carbon. For the purpose of this analysis, only carbon sequestration was looked at, not methane production.

<sup>3</sup>Developed land covers include land covers classified as cultivated, developed, golf course/irrigated lawns, and rural residential. The carbon value for these land cover types was assumed to be zero.

**Table 3. Relationship between Photosynthesis and Respiration: CO<sub>2</sub> and O<sub>2</sub> Flux**

| Vegetation Type                     | Sequestered during photosynthesis <sup>1</sup> |                                                                         | Released during respiration <sup>1</sup>                 |  | Percent of flux (%) |
|-------------------------------------|------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------|--|---------------------|
|                                     | Area (acres)                                   | Current flux CO <sub>2</sub> (Mt CO <sub>2</sub> per year) <sup>2</sup> | Current flux O <sub>2</sub> (Mt O <sub>2</sub> per year) |  |                     |
| <b>Natural Land Covers</b>          |                                                |                                                                         |                                                          |  |                     |
| Evergreen forest (conifer/pine)     | 503                                            | 1,304                                                                   | 948                                                      |  | 1.4                 |
| Redwood forest                      | 475                                            | 1,652                                                                   | 1,202                                                    |  | 1.8                 |
| Mixed evergreen forest/oak woodland | 12,573                                         | 32,606                                                                  | 23,714                                                   |  | 35.8                |
| Oak woodland                        | 24,223                                         | 34,176                                                                  | 24,855                                                   |  | 37.5                |
| Chaparral and coastal scrub         | 6,428                                          | 2,591                                                                   | 1,884                                                    |  | 2.8                 |
| Grassland                           | 37,304                                         | 15,037                                                                  | 10,936                                                   |  | 16.5                |
| Riparian forest and scrub           | 599                                            | 242                                                                     | 176                                                      |  | 0.3                 |
| Mixed willow riparian scrub         | 150                                            | 60                                                                      | 44                                                       |  | 0.1                 |
| Open bay <sup>2</sup>               | 4,438                                          | --                                                                      | --                                                       |  | --                  |
| Pond/ reservoir <sup>3</sup>        | 1,133                                          | --                                                                      | --                                                       |  | --                  |
| Freshwater wetland <sup>3</sup>     | 1,148                                          | 463                                                                     | 336                                                      |  | 0.5                 |
| Alkali wetland <sup>3</sup>         | 1,742                                          | 702                                                                     | 511                                                      |  | 0.8                 |
| Eucalyptus/acacia forest            | 1,633                                          | 2,304                                                                   | 1,676                                                    |  | 2.5                 |
| Ornamental woodland                 | 48                                             | 19                                                                      | 14                                                       |  | 0.02                |
| <b>Totals</b>                       |                                                |                                                                         |                                                          |  |                     |
| Natural Land Covers                 | 92,396                                         | 91,157                                                                  | 66,296                                                   |  | 100                 |
| Developed Land Covers <sup>4</sup>  | 6,175                                          | --                                                                      | --                                                       |  | --                  |
| <b>Total</b>                        | <b>98,571</b>                                  | <b>91,157</b>                                                           | <b>66,296</b>                                            |  | <b>100</b>          |

Sources: California Energy Commission 2004; National Council for Air and Stream Improvement 2008.

Notes: Mt CO<sub>2</sub> = metric tons of carbon dioxide; Mt O<sub>2</sub> = metric tons of oxygen

<sup>1</sup> The amount of CO<sub>2</sub> taken in during photosynthesis is equivalent to the amount of O<sub>2</sub> released during respiration. Using the molecular weight of oxygen (32) and carbon dioxide (44), a conversion factor of 0.73 was used to convert carbon dioxide to oxygen.

<sup>2</sup> Open bay includes tidal wetlands. Tidal wetlands are one of the most productive ecosystems with one of the highest per acre carbon sequestration values; however, the quality of the data did not allow for differentiation between open bay and tidal wetlands.

<sup>3</sup> Aquatic and wetland land cover types both sequester carbon and produce methane. As such, they may be a net emitter of carbon. For the purpose of this analysis, only carbon sequestration was looked at, not methane production.

<sup>4</sup> Developed land covers include land covers classified as cultivated, developed, golf course/irrigated lawns, and rural residential. The carbon value for these land cover types was assumed to be zero.

The total annual current flux of the District's lands is estimated to be 24,906 Mt C per year. An Mt C is equivalent to 3.66 Mt CO<sub>2</sub>. Therefore, the average amount of carbon sequestered annually by the District's lands is estimated to be 91,157 Mt CO<sub>2</sub>. This represents an equivalent offset of approximately 0.02% of California's GHG emissions. (California GHG emissions in 2002 totaled approximately 491 MMT CO<sub>2</sub> equivalents.) In more familiar terms, the carbon sequestration occurring on District lands is equivalent to removing 16,317 passenger cars and SUVs from the road for 1 year, saving approximately 10.1 million gallons of gasoline (California Air Resources Board 2007). In addition to sequestering CO<sub>2</sub>, an estimated 66,296 Mt of oxygen is released during respiration annually. This is equivalent to the amount of oxygen consumed by the city of Piedmont in 1 year.<sup>7</sup>

This carbon sequestration evaluation demonstrates the important role of the District's land in supporting California's aggressive goals for GHG reduction set forth in recent legislation. By preserving natural land in perpetuity, the natural communities on District lands represent an important permanent carbon stock (10,098,692 Mt CO<sub>2</sub> equivalents) and a sink (91,157 Mt CO<sub>2</sub> equivalents annually).<sup>8</sup> Preserving the land in its natural state in perpetuity avoids future emissions from land cover conversion and subsequent emissions from a developed landscape (e.g., transportation or electricity use). Continued preservation and management of the natural, undeveloped landscape will continue to provide the valuable ecosystem service of climate regulation today as well as into the future.

## References Cited

- California Air Resources Board. 2007. *Conversion of 1 MMT CO<sub>2</sub> to Familiar Equivalents*. Available: <<http://www.arb.ca.gov/cc/factsheets/1mmtconversion.pdf>>. Sacramento, CA.
- California Air Resources Board. 2008. *Climate Change Proposed Scoping Plan: a framework for change*. Draft Report. October. Available: <<http://www.arb.ca.gov/cc/scopingplan/document/psp.pdf>>. Sacramento, CA.
- California Energy Commission. 2004. *Baseline Greenhouse Gas Emissions for Forest, Range, and Agricultural Lands in California*. Final Report. 500-04-069F. March.
- California Energy Commission. 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Final Report. CEC-600-2006-013-SF. December.

<sup>7</sup> One person consumes approximately 0.18 Mt of oxygen annually; 66,296 Mt of oxygen supports approximately 12,029 people. The 2008 population of Piedmont is 11,100.

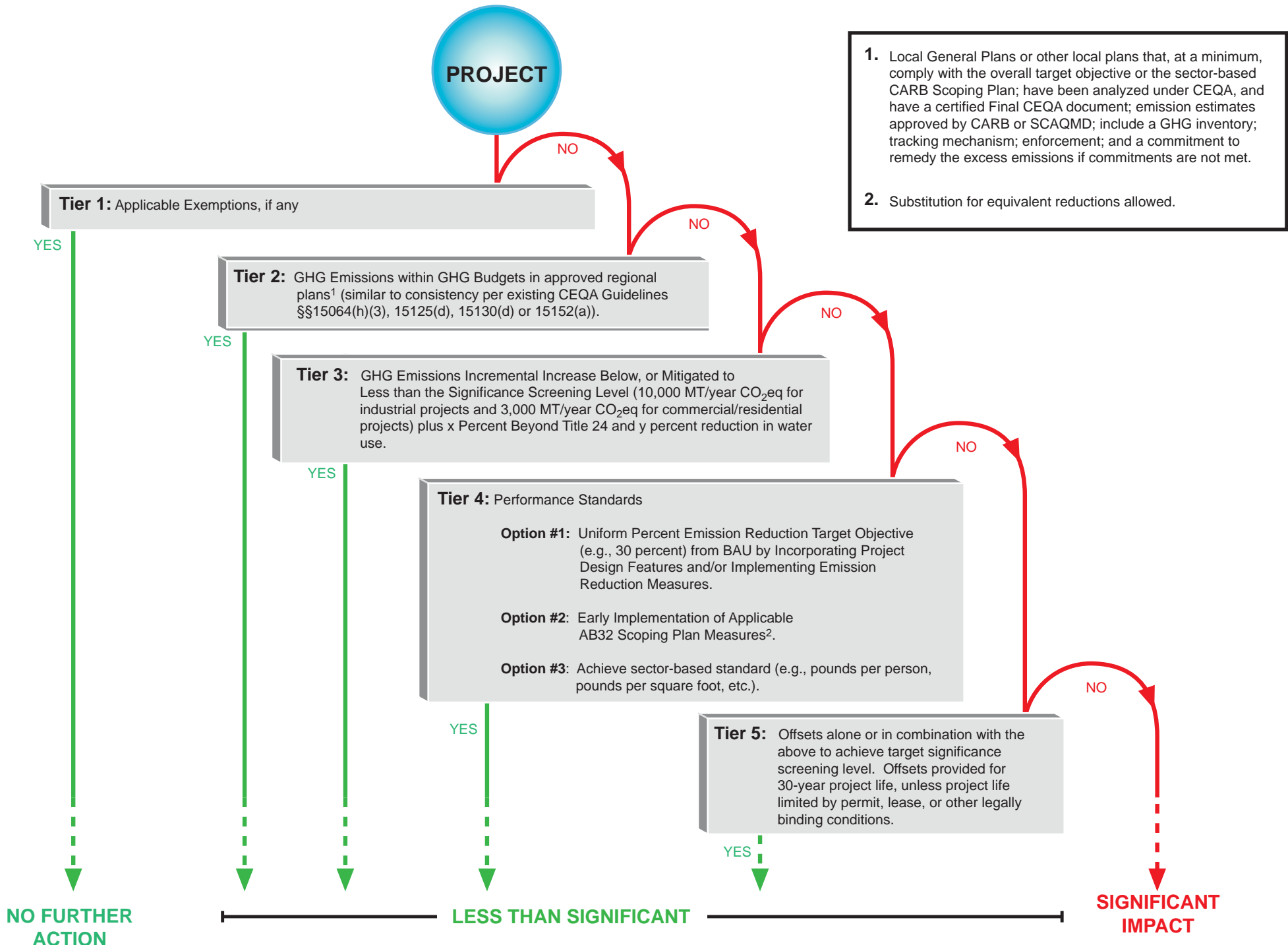
<sup>8</sup> The values of the CO<sub>2</sub> equivalents were calculated by multiplying the total carbon stocks and current flux by 3.66. This is the conversion factor for converting Mt C to Mt CO<sub>2</sub>.

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- ICF Jones & Stokes. 2008. Unpublished land cover mapping data for East Bay Regional Park District parks along San Francisco Bay shoreline. August. Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. Approved at the 10th Session of Working Group I of the Intergovernmental Panel on Climate Change, Paris, France. February. IPCC Secretariat, Geneva, Switzerland.
- National Council for Air and Stream Improvement. 2008. Carbon On Line Estimator 1605(b) report for California. Available: <<http://ncasi.unl.edu/COLE/cole.html>>. Accessed: August 2008.

# EXHIBIT O

# Draft AQMD Staff CEQA Greenhouse Gas Significance Threshold

Page 6 of 10





**From:** [Dave Lubertozi](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Stop the madness  
**Date:** Thursday, June 13, 2013 12:06:57 AM

---

The plan to remove all "non-native" trees in the East Bay hills and poison the stumps is simply insane, as evidenced the very many reasons that have been well articulated and fully documented by so many others at this point that they don't bear repeating here - I simply wish to be counted as yet another well-informed resident who is absolutely opposed to and appalled by this hare-brained scheme. Lengthy and costly lawsuits will be the likely result of proceeding with this plan, which will ultimately serve no one and hurt all taxpayers. The only possibly worse outcome for the public would be if you actually go through with it.

If you cannot resist the temptation of species eradication, please focus only on eucalypts and leave the pines and acacias alone. A more realistic proposal would be to remove all eucalyptus from selected areas and observe the results for a few years to see how these sites fare; replanting natives would also be helpful, especially if you can work with UC researchers to identify SOD-resistant oaks and bays. Under no circumstances should massive quantities of highly toxic pesticides be applied to our watershed!

Sincerely,  
David Lubertozi, PhD  
Oakland, CA

**From:** [Len Liu](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comments on the Draft EIS  
**Date:** Sunday, June 16, 2013 11:05:57 PM

---

To Whom It May Concern:

I generally support the vegetation management work proposed in the draft EIS to reduce wildfire hazard and risk primarily through the removal highly flammable trees in the East Bay Hills. However, I am concerned that the mitigation plans (section 5.1.2.2.1) do not include any plantings of native vegetation, particularly coast redwood (*Sequoia sempervirens*), to: 1) supplement the recruitment of native vegetation; 2) reduce colonization by invasive weeds; and 3) reduce wildfire hazard. The management recommendations of the Hills Emergency Forum (<http://www.hillsemergencyforum.org/MgmtRecmdtn.html#redwood>) state that redwood forest and riparian forests "represent low fire hazards". Young redwoods and riparian trees (e.g., willow and alder) should be planted in appropriate areas within the management area (e.g., Tilden, Strawberry Canyon-PDM, Claremont Canyon, Caldecott Tunnel-PDM, Redwood, and Anthony Chabot). According to section 4.3.3.1.1, "Isolated groves of coast redwood occurred on hillsides in perennially moist drainages running east to west or west to east". Furthermore, the planting of redwoods would help mitigate greenhouse gas emissions and increase future carbon sequestration, and also mitigate in the long term the significant adverse effects this project will have on aesthetics and visual quality, specifically at sites mentioned in section 5.2.3, T1006 and Caldecott Tunnel-PDM. This project should include more aggressive mitigation measures which will establish and expand plant communities that are more resistant to fire.

Sincerely,

Leonard Liu

**From:** [Storm Ainsely](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** PLEASE do not clearcut trees in Berkeley and Oakland  
**Date:** Friday, May 17, 2013 12:33:32 PM

---

To whom it may concern:

I am writing to STRONGLY oppose the clear cutting of trees in the Berkeley and Oakland area. Trees are essential to the quality of air, and to removing carbon dioxide from the atmosphere. To cut them down would damage the ecosystem and air quality in the area. Furthermore, to cover the area with wood chips and pesticides would cause a significant hazard to all people and wildlife in the area, would spread to the local water systems, and potentially have damaging impacts much farther away from the area. There are much better steps to take if you are concerned about fire prevention. Causing a further rise in global temperature by cutting down trees and increasing carbon dioxide in the air will only lead to more fire possibilities. DO NOT DO THIS. It goes against all sense.

Sincerely,

M Lesinski

**From:** [Bonnie Macbride](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** UC plan for Hazardous Fire Risk Reduction  
**Date:** Monday, June 17, 2013 7:30:52 AM

---

Please consider alternatives to the UC plan for Hazardous Fire Risk Reduction to include:

no use of herbicides  
conversion to native plants an acre at a time  
establishment of fuel zones that include defensible zones  
use of manual labor (jobs) to prune, thin, and cut sprouts rather than use of herbicides

The University of California, given its great land holding in our area, must use its power and privilege wisely in protecting our community.

Thank you.

Bonnie Macbride  
1330 Summit Road  
Lafayette, CA 94549

510 610-9807



# FEMA

## DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

DENISE MARTELLA

CONTACT INFO (optional):

(925) 890-4372

Tuesday, May 14, 2013

Richard C. Trudeau Training Center

Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

COMMENTS:

'91-94' (COMMUNITY)  
I VOLUNTEERED 2 1/2 YRS AS CO-LEADER  
NEGOTIATING AN ENHANCEMENT, UPGRADE  
TO THE EBAND (FIRE FLOW) WATER DELIVERY  
SYSTEM IN OUR ROCK RIDGE NEIGHBORHOOD.  
LETS LOOK AT THE HYDROLOG STUDIES THAT  
COULD BE DONE TO GUIDE IN SOME INFRASTRUCTURE  
IMPROVEMENTS.

UNDERGROUNDING THAT WAS DONE FOR THE  
UTILITIES AFTER THE FIRESTORM WAS A GOOD  
SIGNATURE AND DATE: MITIGATION EFFORT  
WILL SPENT.

Denise Martella

**From:** [CAROLYN MAHONEY](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EIS for Hazardous Fire Reduction  
**Date:** Friday, May 17, 2013 7:50:14 PM

---

This is an outrageous proposal and not properly noticed.

The deforestation of the Oakland/Berkeley Hills will forever negatively impact the environment. Round Up is a dangerous product and should not be used in these quantities. We do not know if Round UP will lead to Lymphomas such as those been experienced by veterans 40 years after Agent Orange use in Vietnam.

This proposed project will negatively affect the wildlife, vegetation and human habitation of this area.

Carolyn Mahoney  
5 Clarewood Mall  
Oakland, CA 94618



# FEMA

## DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

Carolyn Mahoney

CONTACT INFO (optional): \_\_\_\_\_

Tuesday, May 14, 2013

Richard C. Trudeau Training Center

Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

COMMENTS:

*No m  
Roundup!*

200 Trees near my home  
were removed by slash logging  
to "prevent fires".

*No!  
on EIS.*

Results: Owls left area, wildlife  
Wind & noise substantially  
increased. H<sub>2</sub>O runoff is ↑  
It's an eyesore and will be  
for the next decade.

Signature and Date:

Carolyn Mahoney 5/18/2013

**From:** [Zia Manekin-Hrdy](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Please don't move forward with this project!  
**Date:** Tuesday, May 28, 2013 10:06:28 AM

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Clear cutting and poisoning our backyard is a terrible way to attempt to eradicate non-native plants and I urge the board to reconsider a longer-term solution that is gentler on our eco-system and does not involve clear cutting and pesticide use.

The FEMA project, as it is currently designed, will leave the canyons open to severe erosion, devastate animal nesting grounds, and poison our water shed.

Instead, I ask you to look at slowly eliminating non-native trees (over a 10 year+ period). A long term volunteer project could be created to organize the many community members who are up in arms about the possibility of pesticide use in their backyards. Volunteers could work to both limit regrowth of non-natives by continuing to cut them back-eliminating the need for pesticides, and they could replant natives in place of these plants over time.

Sincerely,  
Zia Hrdy

Sent from my iPhone



**From:** [James Mann](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Deforestation and toxic herbicide plans for Oakland area.  
**Date:** Sunday, June 16, 2013 6:44:00 PM

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To FEMA ,EBRPS, US Forest Service and all involved in the plan to destroy innumerable trees and poison our soil in the Oakland, CA area:

In making your decision to cut down thousands of trees in the Eastbay hills, Berkeley and other areas near Oakland, please reconsider. I am especially concerned that the use of a dangerous herbicide is planned to keep the trees from recovering and growing again.

With all that is known about the effects upon humans (especially children), wildlife and vegetation of many the pesticides and toxic substances in our air, water, food, cleaning products, etc., I cannot believe that you are planning to ignore scientific knowledge of what we are doing to destroy our planet and its living things. It seemed as though we were making some progress in making people aware of how we must avoid these chemical dangers to our lives and health, especially here in California -- but then this project reared its unbelievably stupid, ugly head.

I have a daughter who suffers from severe multiple chemical sensitivity illness, and she is extremely ill. The canary in the mine, we call her, so we know more about how people are affected by toxic materials than is generally known.

Please do not ignore the dangers to us all! Try to think up safe procedures to handle our environment.

Thank you.

Sincerely,  
Patricia H. Mann  
301 Taurus Avenue  
Oakland, Ca 94611  
(510) 547-2846

**From:** [Mara Hickey](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills Fire risk reduction plan comments  
**Date:** Friday, May 17, 2013 10:45:02 AM

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I was living in the East Bay during the huge fires of 1989 or 1990 (I can't remember exactly when they were). They were devastating.

The community has recovered, both by rebuilding and healing, and also by enacting stricter regulations about keeping growth away from homes, building new firestations in the hills, and understanding that fire is a part of nature.

By cutting down trees to prevent fire, we are taking an essential part of the ecosystem out of the environment. Fire is part of nature. Plants depend on it for their long term survival. It's not inherently bad.

By applying herbicide to the environment we are poisoning our ecosystem in ways that cannot be corrected and have no benefit.

I AM STRONGLY OPPOSED TO THE FELLING OF TREES AND APPLICATION OF HERBICIDE IN THE EAST BAY HILLS.

Thank you for considering my letter of opposition. Know that there are hundreds of people who oppose this for each letter that you receive.

Mara Hickey  
East Bay resident since 1978.

**From:** [Maria Monks](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Concerns regarding draft EIS  
**Date:** Saturday, May 25, 2013 9:19:29 PM

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Dear FEMA,

I have several concerns about the methodology and conclusions presented in the current draft EIS regarding the East Bay Hills Hazardous Fire Risk Reduction. I also would like to propose a third alternative to be considered and evaluated in the next draft.

My concerns are outlined in points 1-5 below, and my proposed alternative is described in point 6.

1. WILDFIRE RISK: In section 4 of the document, the draft EIS reports that FlamMap cannot account for changing weather patterns. And yet, as noted in section 5.6, one of the major changes that will occur as a result of the removal of all non-native trees, including the tall Eucalyptus trees, is a reduction of fog drip and therefore a drier ground in the summer season. The methodology to predict fire hazard did not take this into account, nor the natural wind break that is provided by the trees. The only statement I have found in the entire document discussing the precise difference in moisture due to the absence of fog drip is that the total amount of water received by the ground "may not be substantially different after treatment than before."

In light of the recent Angel Island fires, however, this statement and the claim that the current plan will reduce wildfire hazard does not seem to be valid. There were no major wildfires on Angel Island until after the removal of the Eucalyptus and other non-native trees from the island. Afterwards, there have been several destructive wildfires on the island, occurring every 3-5 years. (See [http://en.wikipedia.org/wiki/Angel\\_Island\\_\(California\)#2008\\_fire](http://en.wikipedia.org/wiki/Angel_Island_(California)#2008_fire) for details about the Angel Island fires that have occurred since the removal of the Eucalyptus trees on the island.)

It is well-documented that no more than 3% of California wildfires occur in forests; the vast majority are brush fires, occurring in grasslands. I do agree with FEMA's findings that the fuel resources are larger in the Eucalyptus groves than in grassland, and that longer flame lengths and crowning or torching are more likely to occur in the case of a wildfire. However, I am concerned that due to the lack of windbreak and summer fog drip, wildfires will be more common if the plan is executed, thereby contributing more to fire hazard, more carbon emissions in the long run, and harm to wildlife habitats and aquatic life due to increased dryness in the summer months. It does not appear that the draft EIS has taken these factors into account.

2. RESTORATION OF NATIVE PLANTS: It is not clearly explained how the native shrubs, trees, and grassland will be encouraged to grow on the cleared space, especially in light of the thousands of gallons of herbicide that are to be sprayed in the targeted areas over the course of several decades. There does not seem to be a clear plan to re-plant native plants and trees or otherwise encourage them, nor evidence that they would indeed naturally grow after the removal of the non-native trees.

Furthermore, it is clearly stated in the Executive Summary that herbicide is not to be

applied within 60 feet of any body of water. However, there are a significant number of Eucalyptus trees close to Lake Anza in Tilden Park, on the south side of the lake. Since the herbicides will not be applied near the lake, there is no guarantee that these "non-native" plants will not simply continue to grow and sprout in areas adjacent to the lakes and streams.

3. WILDLIFE: While the document does address native wildlife and ways of avoiding short-term damage to the wildlife during the project's execution, it is not clear what the long-term effects on the wildlife habitats will be. Since the proposed plan is to remove all Eucalyptus trees and other non-native plants within the short timespan of 2-3 years, without first making sure that the wildlife are adapting adequately to "native" habitats, it is possible that the critical species such as the Alameda whipsnake and the California Red-legged Frog will not be able to reintegrate into the new environment.

The draft EIS also does not adequately address the more complicated and long-term effects of the proposed actions on the local ecosystem. The hawks and owls that currently nest in the tall trees feed on rodents, keeping the rodent population in check. If damage does occur to the bird and snake population, the rodent population will increase, leading to yet another imbalanced ecosystem.

4. CARBON SEQUESTRATION: The EIS does not adequately address the loss of carbon sequestration from the atmosphere due to the removal of a large carbon sink in the area.

5. RECREATION: The proposed actions include temporarily closing many popular nature trails, including the Upper Jordan Fire Trail, for the duration of the removal of trees in those areas. The draft EIS states in section 5.11.2.2 that "Bicycle and pedestrian use of trails and public roads in and adjacent to the proposed and connected project areas during expected working hours is minimal. Thus, adverse effects on recreational use of public roads would not be significant."

This is a completely false and unfounded premise. The Selby trail, the Vollmer Peak Trail, and the Upper Jordan Fire Trail are all used heavily during weekday working hours. I am a serious trail runner and have won several local races by making heavy use of the Tilden park trails to train on and race on, and I consistently see many other runners, hikers, and tourists on these trails during working hours. Many of the students and academics at UC Berkeley, MSRI, Lawrence Berkeley Labs, and the Space Sciences Laboratory have very flexible working hours, and commonly use the trails in Tilden park during the standard work day.

I can further attest to the heavy use of these trails by the local community, as I am a member of the Strawberry Canyon Track Club and the Berkeley Running Club, both of which use the stated trails on a regular basis. I also have participated in many local races that attract hundreds of runners and make use of the trails in the proposed project areas.

Finally, section 5.11.2 does not account for the effect of the increased potential for landslide on recreational use. The Selby Trail is already partially collapsed in areas, and has had to be re-routed and fenced off in several locations. The land depends on the surrounding trees to prevent erosion, and the long-term effects that this may have on the recreational use of the proposed project areas was not adequately

addressed in the draft EIS. I understand that the wood chips and logs are to be placed strategically to prevent this, but the extent to which this would be successful in the long term was not estimated in the draft.

6. PROPOSED ALTERNATIVE: In light of the above concerns, which are shared by a large portion of the local community (including organizations such as the Hills Conservation Network and the Strawberry Canyon Track Club) I wish to propose the following alternative plan.

Rather than removing all the non-native plant life within the next 2-3 years, spread the work out over several decades, and remove the plants gradually, one small region at a time. When one Eucalyptus grove or section of pine forest is cleared, plant native trees such as Redwood or Oak trees in the area, and spray herbicides only on a few adjacent areas that may threaten the young trees. Once the trees in this area are tall enough, and the local ecosystem adapts to the new types of plant life, an adjacent section can be targeted. This plan would have the following advantages:

- a) The new tall trees that would be planted in place of the Eucalyptus trees are less flammable, but still have the ability to break wind and collect fog. Since they will be planted as the Eucalyptus trees are gradually removed, there will no longer be a dangerous post-removal time period in which there are not sufficient trees to reduce the risk of summer brush fires.
- b) The new trees would provide potential nesting places for the hawks and owls. In general the wildlife will have the opportunity to adapt more gradually to the new habitat.
- c) It is likely that the total herbicide use would be decreased if this proposal is followed, as the control of non-native species would be aided by the re-planting of native species.
- d) Recreational use would only be disturbed in one small area at a time, rather than in many of the essential connecting trails in the parks all at once.
- e) Since new trees would be planted at the same rate as the current trees are removed, the problem of loss of carbon sequestration would be significantly reduced, if not completely eliminated.
- f) In the case that the wildlife does not seem to be adapting well to the new environment, or other unforeseen negative consequences occur, the project can be halted before further damage is done.

Finally, since the current draft of the EIS did not consider any alternatives besides the No Action Alternative, I hope that the next draft will thoroughly consider the other three alternatives mentioned in the draft as well as the above proposal.

I look forward to seeing the conclusions of your revised work.

Best Regards,  
Maria Monks  
Department of Mathematics  
UC Berkeley

**From:** [Martin Verhoeven](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** opposition  
**Date:** Wednesday, May 22, 2013 8:26:38 AM

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I am totally opposed to your proposed plan on tree elimination in the Berkeley/Oakland hills. The harm to the environment from both the chemical toxins you will infuse into the ecosystem, the loss of large CO2 absorbing trees, the loss of shade filtering, not to mention the aesthetic dimension this now endangered habitat adds to our lives—and using over 7 million dollars of taxpayer money is indefensible and immoral. Erosion would increase, wildlife habitat destroyed, the risk of fire would go up, not down. What are you thinking of?! The incursion of our footprint into the delicate fragility of the natural world is the silent tragedy of our times. Do not be part of the problem; stop this madness. Your plan reminds me of Lyndon Johnson's Vietnam strategy of bombing to smithereens a country to "save it."

--

Martin J. Verhoeven  
Research Professor  
Institute for World Religions  
510-848-9788

**From:** [Steve Martinot](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** fire mitigation in the Berkeley hills  
**Date:** Thursday, June 13, 2013 1:06:05 PM

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I am in favor of all serious mitigation of fire hazard in the Berkeley and Oakland hills. For precisely that reason, I oppose the UC Berkeley plan for mitigating fire hazard because it is a false plan. It will only substitute one form of fire hazard for another. Therefore I urge FEMA to refuse to fund the UC Berkeley plan, and to remove itself from the shamefulness of its implications.

Wildfire spreads on ground fuel, and spreads directly from tree to tree only when forest trees are too compact. Fire mitigation should thus start with clearing ground fuel and thinning trees, not clearcutting 270 acres, as the UC Berkeley plan proposes. Eucalyptus trees shed bark and leaves, and these need to be cleared away as a primary fire danger, along with underbrush and other leaves from other trees.

But the trees impede the growth of underbrush, as shade, and thus also serve a purpose in fire mitigation. The UC Berkeley plan will remove this positive service trees provide, and leave the ground open to the flourishing of "native" underbrush that is also highly flammable, such as hemlock and poison oak. In a clearcut area, with plenty of sun, these bushes will become fire hazards in their own right, and thus undo the fire mitigation intention.

The UC Berkeley plan proposes to prevent the growth of these flammable bushes by chipping out the trees cut, and using those chips as mulch, up to a depth of two feet. By what casualty of insight do they believe that spreading wood chips to any depth greater than one inch will constitute fire mitigation? For them to have made such a suggestion is shameful, a feature that will attach to FEMA should it decide to fund the UC Berkeley plan. To spread wood chips on the ground to any depth will precisely be to provide ground fuel for the next fire.

I do not have to mention the other ill-omened side-effects of the UC Berkeley plan to clear cut 270 acres of trees, such as the threats to health from herbicide spraying, the rodent infestation that will accompany the loss of raptors, the landslide threats from denuding the soil of forest root systems, etc. etc. I speak only of the desire to mitigate fire hazards, and against the false mitigation that will substitute one fire hazard for another.

I have lived in Berkeley for over 20 years. I was here when the 1991 fire occurred. I have read the FEMA report on that fire. That fire did not start nor propagate itself based on the existence of certain trees, but on the existence of ground fuel, the compactness of trees to each other and to houses, and to some mismanagement of the ground fuel on the part of the Oakland fire department. Indeed, it took a court litigation in 1992 to get the Oakland fire department to make the changes it had been directed to make after the 1970 hills fire, which would have enabled them to deal with the 1991 fire had those changes been in effect.

If there is going to be fire mitigation, let it be mitigation in the direction of safety, and not the substitution of one danger for another. To accept the EIS that is on the table now, and to even think of funding the UC Berkeley plan, would be to stand in

opposition to the people, opposition to the ecology, and in opposition to the city. Fire mitigation is necessary, but it must be done with intelligence, and not with a Howitzer.

Steve Martinot

Berkeley, CA



**From:** [Viki Maxwell](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** I OPPOSE the "East Bay Hills Hazardous Fire Risk Reduction" plan - There are better ways to reduce fire risk  
**Date:** Tuesday, June 04, 2013 7:55:09 PM

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I am an Oakland resident and I OPPOSE the current plan to clear-cut non-native trees in

**1. Soil Erosion** can be expected on steep slopes and large clear cut areas when the trees are destroyed and their roots are killed with herbicides. Soil productivity will be reduced, caused by wood chips nitrogen demand and blocking light.

**2. Sedimentation of streams**, such as the creek that flows through the Botanical Gardens, and destruction of water habitats.

**3. Toxic herbicide runoff into streams with the potential to reach the Bay.** Dousing our public lands with thousands of gallons of toxic herbicides will **endanger the public**. Spraying thousands of gallons of herbicide on the hills will create a real public safety hazard, and **destroy wildlife on site and downstream** by herbicide poisoning.

**4. Destruction of wildlife habitat.**

**5. There are no plans to replant the barren clear cut areas with native vegetation.** Non-native vegetation like broom, thistle, and hemlock will likely be the occupants of the unshaded barren ground.

**6. Significant visual impact along the trails of the parks.**

This project will more likely **increase the risk of wildfires** than reduce that risk:

**1.** By distributing tons of dead wood onto bare ground.

**2.** By eliminating shade and fog drip which helps to moisten the forest floor.

**3.** Soil erosion, lowering of the water table, and destroying the windbreaks, will all contribute to even drier and more desiccated local areas.

**4.** The area will be even more vulnerable to soil impact and further erosion from hikers that will make additional unwarranted 'short-cut' trails across dry barren land.

Instead of this misguided project, I recommend:

**1. THIN TREES IN SMALL AREAS, AT A REASONABLE SLOW PLACE.** Do not clear cut large areas. Clear and thin small areas in a step-wise sequential manner, replant with natives. Do this over a time framework that would allow the native trees to begin to grow and allow wildlife to relocate and adapt. Leave the mature Monterey pines.

**2. REPLANT WITH NATIVES.** An ESSENTIAL part is replanting with natives and habitat restoration, such as reseeding with native grasses and annuals, and planting oak trees and redwoods.

**3. CREATE LOCAL JOBS:** for ongoing maintenance, such as cutting back unwanted sprouts. **This would replace the need for and use of toxic herbicides. DO NOT USE HERBICIDES.** Maintenance workers would also care for the planted saplings of redwoods and oak trees, and do trail maintenance to prevent further erosion.

I am a frequent user of East Bay and Berkeley parks and nature areas (at least once a week). This is a very important issue for me.

Thank you for your time.

Viki Maxwell  
469 Rich St  
Oakland, CA 94609

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**Public Comment  
Draft Environmental Impact Statement  
Hazardous Fire Risk Reduction – East Bay Hills**



**Introduction**

This public comment will provide scientific and observational evidence that the proposed project will not reduce the risk of wildfire which is the stated purpose of the FEMA grants that would fund them. Furthermore, if these projects are implemented as described by the Draft Environmental Impact Statement (DEIS), they will significantly damage the environment. The comment is organized as follows:

- Part I: The proposed projects will increase the risk of wildfire in the East Bay Hills
- Part II: The proposed projects will damage the environment by significantly increasing the emission of greenhouse gases both immediately and for the long-term
- Part III: The proposed project will damage the environment by dousing public lands with thousands of gallons of toxic herbicides
- Part IV: The DEIS engages in advocacy for native plant restorations which is unsupported by scientific evidence
- Part V: Support for the No Project Alternative

The DEIS does not quantify the number of trees that will be destroyed by the proposed projects with the exception of three of the project areas on the property of UC Berkeley. Therefore, I must start by estimating the number of trees that will be removed so that we can quantify the impact of this project.

| Project Area                           | Project Acreage | Estimated Tree Removals |
|----------------------------------------|-----------------|-------------------------|
| <b>UCB</b>                             |                 |                         |
| Strawberry Canyon                      | 56.3            | 22,000                  |
| Claremont                              | 42.8            |                         |
| Frowning Ridge (in Oakland)            | 185.2           | 32,000                  |
| Sub-Total                              | 284.3           | 54,000                  |
| <b>Oakland</b>                         |                 |                         |
| North Hills Skyline                    | 68.3            | 23,161*                 |
| Caldecott Tunnel                       | 53.6            |                         |
| Sub-Total                              | 121.9           | 23,161*                 |
| <b>East Bay Regional Park District</b> |                 |                         |
| Proposed Project                       | 592.3           | 409,176**               |
| Connected Action Project               | 1,060.7         |                         |
| Sub-Total                              | 1,653           | 409,176**               |
| <b>TOTAL</b>                           | <b>2,059.2</b>  | <b>486,337</b>          |

\*UCB estimated tree removals are provided by the DEIS; Oakland estimated tree removals are extrapolated assuming the same number of trees per acre ( $54,000 \div 284.3 = 190$  trees per acre  $\times 121.9$  acres = 23,161 trees removed by the projects of the City of Oakland)

\*\*EBPRD Estimated Tree Removals: Neither the DEIS nor EBRPD's "Wildfire Plan" provide an estimate of the number of trees they plan to destroy. Furthermore their plans for tree removals are complex and variable. All non-native trees (eucalypts, Monterey pines, acacia) will be removed in some recommended treatment areas, but in most they will be thinned to spacing of 25 to 35 feet. The final Environmental Impact Report for the "Wildfire Plan" provides an estimate of the existing tree density of existing eucalypts on EBRPD property (page 392). Acres of eucalypts in the entire project area are provided by the DEIS (page 4.2-6). Our estimate of tree removals is based on those figures.



I have tried to be as conservative as possible in making these estimates. They are based on what little information is provided by the DEIS and related documents. If they are far wrong, the DEIS has only itself to blame. Had the DEIS provided estimates of the number of tree removals, it would not have been necessary to calculate these estimates.

### **Part I: The proposed projects will increase the risk of wildfire in the East Bay Hills**

#### **Distributing tons of dead wood on the ground will increase the risk of fire**

The University of California at Berkeley (UCB) and the City of Oakland propose to destroy all non-native trees (eucalyptus, Monterey pine, acacia, etc) on 406 acres of their land. Approximately 77,000 trees will be destroyed by UCB and Oakland, resulting in tons of dead wood. The DEIS tells us this wood will be distributed on the ground:

*“Felled trees up to approximately 24 inches in diameter at breast height (DBH) would be cut up into chips 1 to 4 inches long and the chips would be spread on up to 20% of each site to a maximum depth of 24 inches...Branches from trees greater than 24 inches DBH would be cut up and scattered on the site (lopped and scattered).” (DEIS, ES-10)*

Any living plant or tree is less flammable than a dead plant because it contains more moisture. A living plant is therefore less likely to ignite than a dead plant. Consequently the dead wood on the ground will be more flammable than the living trees that will be destroyed.

The size of fuel is another factor in its flammability. Smaller pieces of fuel are more likely to ignite than larger pieces of fuel. Therefore, the wood chips and logs will be more flammable than the living trees that will be destroyed.

One of the scientific studies cited by the DEIS corroborates these basic facts of fire science:

*“Sites where the activity fuels piles had not been burned or where they had been masticated (mechanically chipped into small pieces and spread over the treatment area) were excluded from the study because research suggests these additional fuels increase fire severity.”<sup>1</sup>*

(This study is quoted by the DEIS to support its claims about carbon loss resulting from fuel treatments. As we will tell you when we discuss carbon loss, the study has been misinterpreted or misquoted by the DEIS in that regard. The DEIS apparently overlooked this information about the flammability of wood chips and piles of dead vegetation.)

The location of this dead wood on the ground is another reason why it will increase fire hazard. The role of “near-surface” fuel in the rate of spread of fire was one of many variables studied by the Vesta Project in dry eucalyptus forest of Australia.<sup>2</sup> This project conducted many experimental fires in the eucalyptus forest under a variety of conditions to study fire behavior. This is one of their findings:

*“Rate of spread is weakly related to fuel load alone but is directly related to other attributes of the surface fuel load and understory layer. **The near-surface fuel is the principal layer responsible for determining rate of spread.**”*

The environmental consultant that began the preparation of the Environmental Impact Statement was the URS Corporation. They were the consultant at the time of the Scoping Report. They evaluated the project plans of the

<sup>1</sup> Malcolm North and Matthew Hurteau, “High-severity wildfire effects on carbon stocks and emissions in fuels treated and untreated forest,” *Forest Ecology and Management* 261 (2011) 1115-1120

<sup>2</sup> J.S. Gould, et. al., *Fire in Dry Eucalypt Forest: Fuel structure, fuel dynamics and fire behavior*, CSIRO and SCION, 2007

University of California and sent that evaluation to Alessandro Amaglio, FEMA's Regional Environmental Officer, in a letter dated May 27, 2009. (See Attachment A). This is the assessment of the plans to distribute wood chips on the ground to a depth of 24 inches:

*"The comparative risk between eucalyptus in the form of a dense standing forest versus the form of a 2-foot-deep mulch layer on the ground is not well documented. Studies have shown that mulch layers actually can pose a fire risk depending upon the type of material, the depth of the mulch, and the climate at the mulch site. Studies at Ohio State University Agricultural Technical Institute demonstrated that sparks from cigarettes or matches can lead to a subsurface smoldering fire in a variety of mulch materials 4 inches deep. The recommended depth for landscape mulch is less than 4 inches to avoid stifling growth of remaining trees and to avoid spontaneous combustion that can occur when decomposition of organic materials creates enough energy in a pile to ignite a fire....Fire Engineering Magazine recommends that to reduce the potential for fire in mulch, one should recognize that mulches high in oils ignite more easily and that mulch fires start more readily in hot climates where rain is scarce (and fuel moisture is low). Eucalyptus material is high in oils, and the East Bay Hills are subject to long annual periods that are hot and dry. "*

In the Executive Summary the DEIS attempts to minimize the risk of fire associated with a deep mulch of dead wood by claiming that the mulch will decompose within 5 years (ES-10). However, later in the document, the DEIS says that the half-life of the mulch will be 5-years. (DEIS, 5.6-7) That means that only half of the mulch—or 12 inches—will decompose in 5 years. Another six inches will decompose after 10 years, and so on. In other words it will take 20 years for the mulch to decompose to less than an inch.

However, even this is apparently an unrealistic estimate of how long it will take for 24 inches of mulch to decompose. URS Corporation does not agree with this optimistic assessment of how long it will take to decompose 24 inches of wood mulch:

*"The UC cites a study by Duryea et. al. where a high moisture level in mulch is assumed to assist the observed rapid decomposition rate in mulches; however, this study occurred in inland Florida where the climate is hot and humid and the study looked at a mulch layer that was less than 4 inches deep. It is likely that moisture retention would be significantly less in a thicker layer of mulch within a more moderate and arid climate such as the East Bay Hills."* (Attachment A)

**In other words, the fire hazard associated with distributing tons of dead wood on the ground will persist for a very long time, probably more than 20 years.**

The DEIS says that "FEMA has determined that a proposed action must meet the criteria listed below to be eligible for funding under [Hazard Mitigation Assistance grant programs]" (DEIS 2-2). One of the criteria that are listed is: "Meet the requirements of applicable local, tribal, state, and federal laws; implementing regulations; and executive orders." (DEIS 2-3)

The Fire Prevention Bureau of the City of Oakland publishes "General Compliance Standards & Requirements" which limits the depth of mulch: "Do not pile wood chips or mulch on your property. Spread and maintain a depth not exceeding 6 inches."<sup>3</sup> **The plans to spread 24 inches of mulch on properties in the City of Oakland do not comply with the regulations of the City of Oakland.** Therefore, these plans also violate the requirements of the FEMA grants which require that the plans comply with all local regulations.

<sup>3</sup> <http://www.oaklandnet.com/wildfireprevention/docs/OFDNewsletterWeb.pdf>

The plans of the East Bay Regional Park District to dispose of the dead wood of tens of thousands of trees on their properties are different, perhaps because they are being held to the policy standards of FEMA's Mitigation Policy MRR-2-08-1: *"However, the specific requirements and eligibility criteria of the mitigation policy apply only to projects for which the grant application period was open on or after September 8, 2008. Therefore, this policy applies only to the EBRPD HMGP grant application."* (DEIS 1-5)

One of the criteria of FEMA's Mitigation Policy MRR-2-08-1 is that *"material left on the site must meet appropriate depth practices."* In compliance with that criteria, the proposed and connect projects of EBRPD limit the spreading of wood chip mulch to a depth of 4-6 inches.

### **Prescribed burns increase risks of wildfire**

Since this limitation of mulch depth prevents EBRPD from disposing of the tons of dead wood resulting from the destruction of tens of thousands of trees, they propose to conduct prescribed burns to pile burn the excess wood. FEMA's Mitigation Policy MRR-2-08-1 prohibits the use of grant funds for conducting prescribed burns: *"Certain project activities and their associated costs are not eligible for funding: Projects for prescribed burns or clear-cutting"*

Therefore, the DEIS informs us that EBRPD will conduct prescribed pile and broadcast burns to dispose of excess wood (and other "undesirable invasive plant species"), but that these burns will not be funded by the FEMA grant.

These prescribed burns will pollute the air and contribute to the greenhouse gases that are causing climate change, but we will discuss those issues in detail when we comment on greenhouse gases. For the moment, we will focus on the fact that **prescribed burns increase fire hazards because they often cause catastrophic wildfires unintentionally.** Here are specific and local examples of prescribed burns that caused wildfires:

- In October 2009, a prescribed burn in the Santa Cruz Mountains was responsible for a wildfire that burned 485 acres, injuring 4 of the 1,700 firefighters who fought it at a cost of \$4 million. That cost does not include the claims for damages of the property owners who lost their homes.<sup>4</sup>
- In May 2000 a prescribed burn in the Bandelier Monument in New Mexico eventually burned over 45,000 acres, threatened the Los Alamos National Laboratory and destroyed 235 structures.<sup>5</sup>
- In October 2009, the Big Meadow fire in Yosemite began as a prescribed burn and eventually burned 7,425 acres.<sup>6</sup>
- In 2003, the California State Park Department was responsible for starting a fire on San Bruno Mountain in South San Francisco intended to burn 6 acres that eventually burned 72 acres and came perilously close to homes.<sup>7</sup>

We should not be surprised by the unpredictable results of prescribed burns. Fire scientists at UC Berkeley conducted a series of experimental prescribed burns in chaparral in Northern California, hoping to arrive at a model of fire behavior that would improve the predictability of such burns. They arrived at the conclusion that **"...it is extremely difficult to**

<sup>4</sup> <http://www.sfgate.com/news/article/Cal-Fire-says-its-crews-caused-wildfire-3263483.php>

<sup>5</sup> [http://www.nps.gov/cerrogrande/executive\\_summary.htm](http://www.nps.gov/cerrogrande/executive_summary.htm)

<sup>6</sup> <http://www.nps.gov/yose/parkmgmt/bigmeadowfirefaq.htm>

<sup>7</sup> <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2003/07/09/BA187572.DTL>

**predict with certainty where the fire will spread...For more than half of the transects installed, the flaming front did not traverse the transects as predicted..."<sup>8</sup>**

In addition to increasing fire hazard, there is also evidence that **some fire scientists do not think prescribed burns conducted for the purpose of reducing fuel loads actually reduce the risk of wildfire.** Jon E. Keeley (Ph.D. Biologist, US Geological Service) is a world-renowned expert on the fire ecology of Mediterranean climates, such as California. Here's what he has to say about prescribed burns with respect to their ability to reduce fire hazard risks:

*"Fire management of California shrublands has been heavily influenced by policies designed for coniferous forests, however, fire suppression has not effectively excluded fire from chaparral and coastal sage scrub landscapes and **catastrophic wildfires are not the result of unnatural fuel accumulation.** There is no evidence that prescribed burning in these shrublands provides any resource benefit and in some areas may negatively impact shrublands by increasing fire frequency. Therefore, **fire hazard reduction is the primary justification for prescription burning, but it is doubtful that rotational burning to create landscape age mosaics is a cost effective method of controlling catastrophic wildfires.**"<sup>9</sup>*

If East Bay Regional Park District is held to the policy standards of FEMA's Mitigation Policy MRR-2-08-1, there are other "Ineligible Wildfire Activities" which would apply: "Projects to address ecological...issues" and "Projects to protect the environment..." These recommended treatment areas in the East Bay Regional Parks should not be funded by a FEMA grant because they violate FEMA's policy governing these grants:

- HP2, HP3, HP4: "Presence of Pallid Manzanita requires hand labor treatments...Remove non-manzanita shrubs and prune retained trees."
- RD4, TI6, TI15: "Enhance conditions for Oakland star tulip and western leatherwood..."

Pallid Manzanita requires fire to germinate and its recovery plan says explicitly that suppression of fire is the primary reason why it is rare and endangered. Therefore, it is both inappropriate and contradictory to pay for its care with a FEMA grant that is intended to reduce fire hazard. This is one of many examples of the confused mission of these projects. FEMA need not be confused by the contradictory mission of the owners of these public lands. **FEMA has only one mission and that is to reduce and mitigate for catastrophic hazards.**

#### **What type of vegetation will replace the destroyed forest and will it be more flammable than the existing forest?**

Any terrestrial plant or tree will burn under certain conditions that are conducive to fire. Obviously, eucalypts are not exempt from this general rule. However, the analytical question in evaluating the proposed projects should not be whether or not eucalypts are flammable, but rather whether or not they are **more** flammable than the vegetation that will replace them. That is the question that we will now consider.

The DEIS states the belief of the sponsors of the proposed project that native plants and trees will replace the non-native plants and trees that they intend to destroy. However, they have no intention of planting native plants and trees. Rather, they believe that existing native plants will occupy the bare ground by "recruitment" and/or germination of a dormant seed bank which they assume exists beneath the non-natives they intend to destroy.

<sup>8</sup> Scott L. Stephens, et.al., "Measuring the Rate of Spread of Chaparral Prescribed Fires in Northern California," *Fire Ecology*, vol. 4, no 2008.

<sup>9</sup> Jon E Keeley, "Fire Management of California Shrubland Landscapes," *Environmental Management*, March 2002, Volume 29, Issue 3, pp. 395-408



Although this seems to us a fantasy, for the moment we will accept this premise in order to ask and answer this analytical question: **If native plants and trees occupy the bared ground, will that native landscape be more or less flammable than the existing landscape?**

We will let the California Native Plant Society introduce this question because we hope that it will be considered a credible source by native plant enthusiasts who are advocating for this project:

*"Contrary to what many people think, it is not possible to make broad statements about fire risk and invasive plants, just as you cannot for native plants. Each species must be evaluated separately. Finally, it is impossible to discuss the fire risk potential of any plant without also taking into account its health at any given time. Any plant will burn under the right conditions, and the most 'fire resistant species' can become great fuel for a wildfire if it contains a lot of dead tissue due to a lack of proper maintenance."*<sup>10</sup>

We couldn't agree more. Therefore, we will compare the flammability of eucalypts with specific native species that the project sponsors claim will replace them. According to the DEIS, "*Oak-bay woodlands total 320.6 acres in the proposed and connected project areas and represent the second largest vegetation community identified in the proposed and connected project areas.*" (DEIS 4.2-17) Also, the "vegetation management goals" for the Recommended Treatment Areas in EBRPD's FEMA applications are predominantly oak-bay woodland. Thirty-seven of the 47 (80%) RTAs in the FEMA grants are destined to be oak or oak-bay woodland when this project is implemented.

Therefore, we will evaluate the assumption of the DEIS that oak-bay woodland will be less flammable than the existing landscape. We will cite the scientific and observed evidence that oaks and bays are not less flammable than the non-native trees and shrubs that will be removed or thinned by the proposed FEMA projects.

#### **First, the evidence regarding the flammability of oaks and bays:**

**Moisture** The moisture content of vegetation is a factor in how easily it will ignite. Other conditions being equal, **the more moisture within the vegetation the less likely it is to ignite.** A study done locally in native vegetation reports that, *"...the [moisture] of the live oak was fairly constant throughout the fire season and at a lower moisture content than the other species...the lowest moisture content was [47%] on September 30<sup>th</sup>..."*<sup>11</sup> We don't have comparable information regarding moisture for eucalyptus because moisture content varies by specific location and climate conditions. However, the literature<sup>12</sup> generalizes the moisture content of the eucalyptus leaf as roughly 50%, which suggests that the **eucalyptus leaf probably does not contain less moisture than an oak leaf.**

We will discuss the question of moisture again when we evaluate the fuel models used by the computer modeling of fire behavior in the DEIS.

**Sudden Oak Death** Since all dead vegetation contains less moisture than any living vegetation and is therefore more flammable, Sudden Oak Death is a related issue. The pathogen (*Phytophthora ramorum*) that causes Sudden Oak Death (SOD) was reported on the UC Berkeley campus in 2002.<sup>13</sup> At that time it also existed at the UC Botanical Garden, which

<sup>10</sup> Sabrina Drill, "Sustainable and Fire Safe Landscapes: Achieving wildfire resistance and environmental health in the wildland-urban interface," *Fremontia*, Vol. 38, No. 2 and No. 3, April and July 2010.

<sup>11</sup> Rice, Carol, "Live Fuel Moisture, Fuel Bed Characteristics, and Fire Vegetation in the Berkeley/Oakland Hills," Master's dissertation, UC Berkeley, 1987.

<sup>12</sup> <http://www.buzzle.com/articles/what-do-koala-bears-eat.html>

<sup>13</sup> <http://www.universityofcalifornia.edu/news/article/3880>

is proximate to UC Berkeley's FEMA projects. By 2011, the SF Chronicle reported that the infestation of SOD was spreading rapidly in the East Bay and had been found in North Berkeley, the Claremont district in Berkeley and the Montclair area in Oakland. That article predicted that 90% of the native live and black oaks in California will be dead within 25 years.<sup>14</sup>

One year later, based on the sampling done by thousands of volunteers participating in the 2012 SOD Blitz, the California Oak Mortality Task Force reported these findings:<sup>15</sup>

- *"The USDA FS 2012 annual aerial detection survey for California mapped 376,000 new dead oak (Quercus agrifolia) and tanoak (Notholithocarpus densiflorus) over 54,000 acres in areas impacted by SOD."*
- *"Most of the Bay Area locations sampled had increased levels of infection, with the East Bay infestation found to have transitioned from a newly arrived status (in 2011) to epidemic levels on California bay laurel (Umbellularia californica) (in 2012)."*

We participated in the 2013 SOD Blitz in the East Bay on April 27, 2013. This volunteer effort is led by Matteo Garbelotto, a scientist at UC Berkeley studying Sudden Oak Death. He has organized the SOD Blitz throughout Northern California to determine the spread of the disease. Hundreds if not thousands of citizens attend his workshops to learn how to identify the disease and take leaf samples of native bay trees for testing in Garbelotto's laboratory. Oaks aren't sampled because that requires cutting into the bark of the tree which can damage the tree if not done properly. **Based on previous studies, Garbelotto informed participants in the survey that bays that are infected with the pathogen are assumed to infect oaks within 200 feet of infected bays. So, based on the SOD map that identifies infected bays in the East Bay, we should assume that all oaks within 200 feet of those infected bays are doomed to die eventually.**

<sup>14</sup> Fimrite, Peter, "Sudden oak death cases jump, spread in the Bay Areas," San Francisco Chronicle, October 2, 2011

<sup>15</sup> "Sudden Oak Death and *Phytophthora Ramorum*, 2011-2012 Summary Report, California Oak Mortality Task Force





This is a detail of an area south of Lake Anza and west of the Tilden Botanical Garden from the SOD Map which is available on the internet. Infected bay trees identified by the 2012 SOD Blitz are indicated with red triangles. This small portion of the SOD Map shows that 6 infected bay laurel trees were found in 2012 in four of the FEMA project areas: T1010, T1011, T1012, and T11020. This is not a complete list of the infected bays in all project areas. It is only an illustration that SOD exists in the FEMA project areas.

The oak woodland in the East Bay is called the oak-bay woodland for a reason. The oaks and bays grow together in close proximity. Although bays are hosts of the SOD pathogen, they are not killed by it. However, bays are considered the primary vector of the disease to the oaks which are killed by it: *"Bay laurel are not thought to die from P. ramorum infection, but these trees are a major source of inoculum for the pathogen and appear to play an important role in spreading disease to other plants in California."*<sup>16</sup> For that reason, property owners and managers of public lands are being advised by scientists to remove bay laurels growing in proximity to oaks: *"Scientifically-tested recommendations for managing forests impacted by P. ramorum are still in development, although at least three promising directions have*

<sup>16</sup> UC Davis IPM Online: <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74151.html>



*emerged: application of systemic fungicides, forest thinning to remove susceptible hosts, and targeted removal of the main carrier, California bay laurel, near coast live oak.*"<sup>17</sup>

**To summarize these reports: the spread of SOD in the East Bay has reached epidemic portions and is expected to kill most of the oaks. Meanwhile, one of the few treatments being recommended by scientists to limit the spread of the disease is to remove bay laurels that grow near oaks. The future of the oak-bay woodland in the East Bay is indeed dim.** (This is a good opportunity for me to express my deep affection for oaks. Please do not misunderstand that I am pleased about this bad news.)

Scientists studying SOD have determined that the spread of the disease is facilitated by warm, rainy days, most likely to occur in the spring. And models of climate change, predict just such conditions in the future.<sup>18</sup> How ironic that the destruction of hundreds of thousands of trees in the East Bay will contribute to climate change by releasing hundreds of thousands of tons of carbon dioxide to the atmosphere.

**SOD researchers have also reported that SOD deaths are increasing the risk of severe wildfire:**

*"The researchers found fuel buildups in Douglas-fir-tanoak forests with high SOD-related hardwood mortality could increase wildfire flame lengths by 3 to 4 feet and double a wildfire's rate of spread, depending on how much time has elapsed since initial infection. Not only does SOD alter fuel quantity in these forest types, but it can also change the arrangements of fuels, posing serious challenges to firefighter response in infested stands. After trees die from the disease, they can remain standing with dry, dead leaves for several years, greatly increasing the likelihood of crown fire under extreme weather conditions. Likewise, the increased fuels on the forest floor can take a long time to break down, posing a long-term fire hazard and additional risks to firefighters. In many cases, modeled wildfire conditions in SOD-impacted forests exceed safety thresholds for hand crews, calling for changing suppression tactics and strategies, such as more heavy equipment, aircraft use, and indirect lines."*<sup>19</sup>

**Doing a word search for Sudden Oak Death and SOD through the 3,000 page DEIS, we find that Sudden Oak Death appears only in the Scoping Report. Seven public comments submitted during the scoping process mentioned concern regarding Sudden Oak Death and these comments are reported in the Scoping Report (DEIS, Appendix K1).**

**Despite the public's expressed concern regarding Sudden Oak Death during the scoping process and the written record of their concern, the DEIS makes no mention of Sudden Oak Death. Since the scoping process in 2010, we now have overwhelming scientific evidence that Sudden Oak Death is rampant in the East Bay, that it is spreading rapidly, that its spread is associated with climate change, and that it is increasing the risk of severe wildfire, yet the DEIS ignores these serious threats to the oak-bay woodlands. This omission verges on incompetence, if not negligence.**

<sup>17</sup> Janice Alexander, Christopher Lee, "Lessons Learned from a Decade of Sudden Oak Death in California: Evaluating Local Management," *Environmental Management*, 2010, 46:315-328.

<sup>18</sup> Kliejunas, J.T. 2011. A Risk Assessment of Climate Change and the Impact of Forest Diseases on Forest Ecosystems in the Western United States and Canada. Gen. Tech. Rep. PSW-GTR-236. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 70 p. (4/12)

<sup>19</sup> Valachovic, Y.S.; Lee, C.A.; Scanlon, H.; Varner, J.M.; Glebocki, R.; Graham, B.D.; and Rizzo, D.M., "Sudden Oak Death-Caused Changes to Surface Fuel Loading and Potential Fire Behavior in Douglas-fir-Tanoak Forests," *Forest Ecology and Management*. 261:1973-1986. (3/12)

One wonders why the government bothers with a public comment period such as the scoping process, when the public's concerns are obviously ignored.

If the consequences of Sudden Oak Death in the oak-bay woodland in the project areas are not adequately explained by the Final EIS, FEMA can be assured that it will be legally challenged by the taxpayers. At the very least, taxpayers need to know if there will be any trees left in the East Bay hills, either native or non-native. And if the expansion of oak woodland increases the risk of wildfire, funding of these FEMA grants would be entirely inappropriate.

**Embers** Laboratory tests conducted by the USDA Forest Service on four species of native plants and trees found that native chamise and oaks loft embers absent any wind. In the case of oaks, the scientists report that "Many of the oak leaves had sharp points (i.e., spines) around the outer edge. The oak leaves would ignite at these points, sometimes accompanied by small explosions of the points that led to the ejection of small brands."<sup>20</sup>

A park ranger on Angel Island reported that embers from the burning oaks were responsible for nearly igniting the historical buildings on the island during the wildfire of 2008: "All the oaks up there were burning," said the 28-year veteran of the department. "It was an ember shower that just rained on the entire building, and all the vegetation around us was burning."<sup>21</sup> Most of the eucalypts (80 acres) had been removed from the island about 12 years before the 2008 fire. The fire stopped at the edge of the remaining forest.<sup>22</sup>

**Volatile Oils** Volatile oils are said to increase the likelihood of ignition, particularly by those who advocate for the destruction of eucalypts, which contain volatile oils. Native bay laurel also contains volatile oils: "In the fruit, there are essential oils and fatty oils present. The fruit is pressed and water extracted to obtain these products. The fruit contains up to 30% fatty oils and about 1% essential oils...The leaves contain about 1.3% essential oils (*Ol. Lauri folii*), consisting of 45% eucalyptol..."<sup>23</sup> In other words, the predominant oil in the leaf of bay laurel is the same oil in the leaf of eucalypts. According to Cornell University studies, essential/volatile oils in blue gum eucalyptus leaves range from less than 1.5 to over 3.5%.<sup>24</sup> The leaves of native California bay laurel trees contain 7.5% of essential/volatile oils, more than twice the amount of oil in leaves of blue gums.<sup>25</sup>

The "Wildfire Hazard Reduction and Resource Management Plan" of the East Bay Regional Park District acknowledges the flammability of bay laurels: "Consider selecting young bay trees for removal, as bay trees tend to produce ladder fuels and are known for their oil content. This species also is known to be a vector of sudden oak death and may prevent oak regeneration." (page 190)

**Fire Ladders** The likelihood of a fire reaching the canopy of a tree, causing a crown fire which is more likely to disperse embers into the surrounding vegetation is increased by the existence of the tree's "fire ladder" to its crown. The fire ladder is composed of low-hanging branches that enable a fire traveling on the ground to move from the ground into the tree, via the "ladder." Both oaks and bays have low fire ladders, in many cases extending to the ground. It is not uncommon for the multiple trunks of the bay to actually lie on the ground, sending new stems vertically from its horizontal position. The coast live oak, which is the locally predominant species of oak, has a prostrate growth habit.

<sup>20</sup> Smith, Steven., et al. "Ignition Behavior of Live California Chaparral Leaves," USDA Forest Service, Riverside, CA

<sup>21</sup> "Tiburon battalion chief and Larkspur fire crew save historic Angel Island structure," Marin Independent Journal, 10/18/08

<sup>22</sup> <http://www.sfgate.com/bayarea/article/After-fire-Angel-Island-is-a-park-of-contrasts-3265688.php>

<sup>23</sup> [http://en.wikipedia.org/wiki/Bay\\_laurel](http://en.wikipedia.org/wiki/Bay_laurel)

<sup>24</sup> <http://www.ansci.cornell.edu/plants/medicinal/eucalyp.html>

<sup>25</sup> <http://www.paleotechnics.com/Articles/Bayarticle.html>

Particularly in windy conditions, its canopy will “kneel” into the wind, putting its canopy up as an umbrella against the wind. **Both oaks and bays have much lower fire ladders than any of the non-native trees that are proposed for destruction by the FEMA grant projects: eucalypts, Monterey pines, and acacias.**

The DEIS claims that the native trees will be limbed up to eliminate fire ladders:

*“The proposed and connected actions would remove the lower limbs of trees...”* (DEIS 5.2-1) Then later in the DEIS modified to: *“Many remaining trees would be pruned up to 8 feet from the ground...”* (DEIS 5.2-3) In Appendix M, the DEIS says, *“Treatments on property owned by the University of California are expected to raise the height to live crown base but not specifically to eight feet...”* These three inconsistent sentences should be revised so that they are consistent in the final EIS. Ladder fuels are an important variable in determining fire hazard in the post-treatment landscape. Therefore, the public deserves to know what commitment is being made by the property owners to the elimination of ladder fuels.

The branching structure of oaks and bays are such that many of them would be entirely destroyed if the lower 8 feet of their limbs were removed. With the exception of large, old oaks, limbing up 8 feet from the ground will not be physically possible. Attempting to limb up a small oak to that height will seriously disfigure the tree.

**Duff and Leaf Litter** The quantity and composition of leaf litter are factors in ignition. The more likely the leaf litter is to ignite, the more likely the fire is to spread into the tree, causing a crown fire that disperses embers. Here is a description of the flammability of oak leaf litter from a website about the oak savannah:

- Oak leaves and litter burn much more readily than the litter and leaves of other hardwoods.
- Oak leaves are much thicker than those of other hardwoods, giving them greater resistance to decomposition and longer life spans in the leaf litter.
- Oak leaves tend to be drier (more xerophytic) than other hardwood species, making them more flammable.
- Oak leaves curl more than other hardwoods. This puts the fire up off the ground, making it capable of spreading more effectively. Thus, oak leaves are more flammable and more capable of “carrying” a fire.
- Oak leaves contain tannins which make them more resistant to decay, so that it may be several years before all the leaf material has been turned into compost. Thus, the amount of burnable material on the oak forest floor is greater than that with other tree species.”<sup>26</sup>

These observations are confirmed by the plant and tree database of the US Forest Service, which says of the coast live oak: *“Flammability of coast live oak and chaparral communities with a coast live oak component is of particular concern because of their high fuel loading and proximity to urban areas. Some fire-excluded chaparral habitats have fuel accumulations of 30 to 40 tons per acre.”*<sup>27</sup>

**Secondly, the evidence regarding the flammability of eucalypts:**

**Moisture** The tall, non-native trees condense the year-round fog in the San Francisco Bay Area: *“Eucalyptus and pine groves planted there [Berkeley hills] long ago intercept large amounts of fog and cause a rainlike deposit of moisture. The fog drip during the summer months has been measured at a surprising 10 inches, an amount nearly half as great as the total rainfall...”*<sup>28</sup> Average rainfall in the East Bay is 22 inches per year, so this fog precipitation adds nearly 50% to

<sup>26</sup> <http://oaksavannas.org/fire-fuel.html>

<sup>27</sup> <http://www.fs.fed.us/database/feis/plants/tree/queagr/all.html>

<sup>28</sup> Gilliam, Harold, *Weather in the San Francisco Bay Area*, UC Press, 2002.

total precipitation. **By contributing moisture to the forest floor during the otherwise dry time of the year, tall non-native trees reduce fire danger. The moisture content of the duff and leaf litter diminishes the likelihood of ignition.<sup>29</sup> If the duff and leaf litter do not ignite, the fire is less likely to spread into the canopy of the tree.**

**Because oaks and bays are not as tall as the non-native trees, they do not precipitate as much fog drip. The only tall native tree in the East Bay hills is the redwood. However, there aren't many redwoods in the East Bay hills because they do not tolerate wind and they require much more water than the non-native trees.<sup>30</sup> They are therefore not a suitable replacement for existing non-native trees.**

The DEIS makes a lame attempt to nullify the benefit of fog drip in the suppression of ignition during the fire season by claiming that that benefit is counteracted by the fact that the trees intercept rainwater: *"The overall direct impact on precipitation of thinning or removing trees and vegetation from the East Bay hills appears to be that more rainfall but less fog drip water would reach the ground. Thus the annual precipitation reaching the ground may not be substantially different after treatment than before."*(DEIS 5.6-9) Since the fog drip occurs during the dry fire season and the rain occurs when there is no fire hazard, the loss of fog drip to moisten the forest floor and reduce the risk of ignition is not compensated for by increased rainfall during the winter when there is no risk of ignition.

**Combustibility** Scientists at the University of Tasmania conducted laboratory experiments on the plants and trees in the Tasmanian forest to determine the relative flammability of their native species. The predominant eucalyptus species in the San Francisco Bay Area, the Blue Gum eucalyptus (*E. globulus*), is native to Tasmania and was therefore included in this study. The study reports that, *"E. globulus* leaves, both juvenile and adult, presented the greatest resistance [to ignition] of all the eucalypts studied. In this case, leaf thickness was important as well as the presence of a waxy cuticle." Also, in a table entitled "Rate of flame front movement, the comment for *E. globulus* leaves is "resistant to combustion."<sup>31</sup> In other words, despite the oil content in the leaf, its physical properties protect the leaf from ignition.

These findings are corroborated by local wildfire experience. The National Park Service is one of many managers of public lands that are engaged in massive restorations of native plants that frequently result in the destruction of non-native trees. In support of that effort, NPS has published a brochure about eucalyptus. Deeply embedded in the fine print of that brochure, the park service admits that live eucalyptus leaves are resistant to fire: *"The live foliage [of eucalypts] proved fire resistant [during a fire on Mt Tamalpais], so a potentially catastrophic crown fire was avoided."*<sup>32</sup>

This brochure also contains a table comparing the fuel loads of eucalyptus with native oaks and bays. We find that the table has been carefully constructed to support their belief that eucalypts are more flammable than native trees. If logs (which would take 1,000 hours to ignite<sup>33</sup>) were removed from this table, **the available fuel load of eucalyptus is not greater than that of native oaks.**

<sup>29</sup> Schroeder, Robert, et. al., "Ember ignitability of *Pinus radiata* and *Sequoia sempervirens* Litter: Methodology and Results," in Proceedings of the California Wildfire Conference: 10 Years after the 1991 East Bay Hills Fire, UC Press, 2001.

<sup>30</sup> <http://www.fs.fed.us/database/feis/plants/tree/seqsem/all.html>

<sup>31</sup> Dickinson, K.J.M. and Kirkpatrick, J.B., "The flammability and energy content of some important plant species and fuel components in the forests of southeastern Tasmania," Journal of Biogeography, 1985, 12: 121-134.

<sup>32</sup> [http://home.nps.gov/pore/parkmgmt/upload/firemanagement\\_fireeducation\\_newsletter\\_eucalyptus\\_p2.pdf](http://home.nps.gov/pore/parkmgmt/upload/firemanagement_fireeducation_newsletter_eucalyptus_p2.pdf)

<sup>33</sup> *For a technical explanation of timelag, we quote from Sugihara's Fire in California Ecosystems: "The proportion of a fuel particle that contains moisture is a primary determinant of fire behavior... Timelag is the amount of time necessary for a fuel component to reach 63% of its equilibrium moisture content at a given temperature and relative humidity [the point at which ignition occurs]. 1,000-hour fuels reflect seasonal changes in moisture..."*



The eucalypts' resistance to ignition is best illustrated with a photo<sup>34</sup> of a wildfire in 2003 in San Diego County which destroyed an entire neighborhood of homes without spreading into the eucalyptus forest which surrounded them.



### Embers

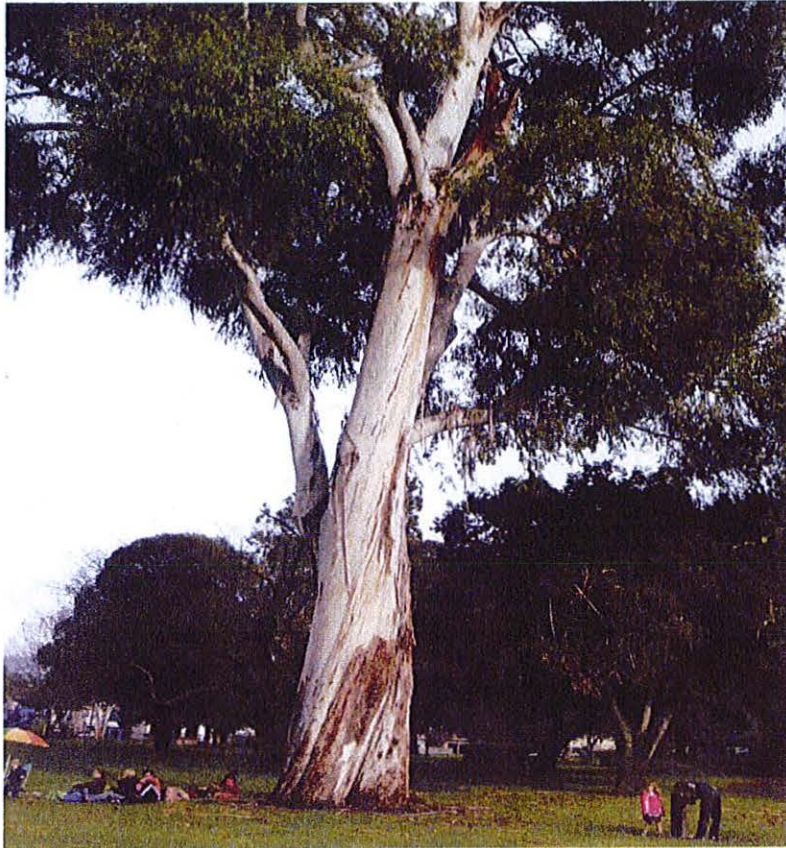
As we said earlier, laboratory tests and observations of fires have both shown that oak trees cast live embers. However, oak trees are not as tall as eucalypts. Therefore, the DEIS assumes that the height of eucalypts will loft embers for greater distances. The DEIS also identifies the bark of the eucalyptus as the likely ember, which is consistent with the fact that the leaves are known to resist ignition. Although these assumptions have a logical appeal, they deserve closer scrutiny. We return to the Vesta Project for a better understanding of the ability of eucalypts to loft live embers long distances.

The initial experimental fires conducted by the Vesta Project were done in jarrah (*Eucalyptus marginata*) forest which is a species of eucalyptus with stringy bark that extends to the canopy. The bark of our predominant species of eucalyptus (Blue Gum) is described by the Vesta Project as "ribbon of bark, but smooth trunk." The Vesta Project gave this type of bark a lower hazard rating than the stringy bark of the jarrah.

As you can see in this photograph of a local eucalyptus, the bark of the Blue Gum does not extend to the canopy. Depending upon the height of the tree, the bark covers only the first few yards of the trunk.

<sup>34</sup> Source: New York Times, 10/27/03





Mosswood Park, Oakland

The flaming bark of the Blue Gum would have to be lofted above the canopy of the tree by the fire's convection column before it could be entrained by the wind to ignite a spot fire: *"Firebrands are flaming or glowing pieces of fuel...that are transported ahead of a fire-front by wind or by the combination of wind and the fire's convection column. In the latter case, the burning firebrand is entrained into and lofted by the convection column and then released at some height downwind of the fire front."*<sup>35</sup> Obviously the fuel would have to be burning continuously during this transport in order to ignite a fire when it lands, which is why the Vesta Project reports that, *"Most firebrands burn out within the convection column."*

**To summarize, experiments and observations of fires have shown that the leaves of the Blue Gum eucalyptus resist ignition. If the leaves do not ignite, they cannot become firebrands that have the potential to ignite spot fires. The bark of the Blue Gum is more likely to be lofted as a firebrand. However, it would have to be lofted from the base of the tree, then above tree canopy before it could be transported some distance. In that case, the probability that it would still be burning seems remote.**

The FEMA Technical Report of the 1991 Oakland fire does not corroborate the claim of the DEIS that the eucalypts are the most likely source of the many embers and firebrands that started spot fires in advance of the spreading fire. It does not identify any particular source of embers and firebrands, but it does make it perfectly clear that everything was burning and therefore, everything was a potential firebrand in this wind-driven fire: *"The actual spread of the fire, in most cases, was observed to be flaming brands and embers, carried by the wind and dropping onto ignitable fuels ahead*

<sup>35</sup> JS Gould et.al., *Fire in Dry Eucalypt Forest: Fuel structure, fuel dynamics and fire behavior,* CSIRO and SCION, 2007

of the fire front. The ignitable fuels included trees, brush, grass, and other natural fuels, as well as wood roofs, debris in rain gutters, and other combustibles around structures.”<sup>36</sup>

A book about the 1991 wildfire in the Oakland/Berkeley hills is another source of information about the fuel in that fire.<sup>37</sup> The author interviewed many fire survivors and reported their observations of the fire. The book **states repeatedly that native plants and trees were involved in that fire.** Every tree mentioned in the following quotes from that book is native to the Bay Area:

- “...flames surging through the dry underbrush and **live oaks** that line the street...”
- “...neighborhoods...are built into the contours of the grassy hills and **live-oak-and-laurel studded canyons...**”
- “...hillsides covered in seasonal grasses or had overlooked ravines of **oak and madrone...were devastated by the fire.**”
- On Vicente Road, “**Two redwoods up the street caught fire like matchsticks.**”
- “Roble Road and... Roble Court, derive their name from the...Spanish word for the **live oak tree that grows densely there...the devastation on lower Roble...was fairly complete...**”

In the single mention of the role of eucalypts in the fire, the fire skips over the tree canopy: “*The fire swept right over [the houses] scorching the crowns of surrounding eucalyptus trees.*” Note that the eucalypts were “scorched” but did not burn. And the Monterey pine—also targeted for eradication by native plant advocates—plays a similar role in a nearby location: “*Across the street a grove of Monterey pines shields the white clapboard buildings of the private Bentley School...*”

This is a picture taken shortly after the 1991 fire by Richard Misrach ©that illustrates the observations we have cited. We see in the foreground one of the homes that was completely destroyed by that fire. In the middle-ground, we see some burned vegetation. In the background, on the ridgeline, we see a stand of eucalypts that were untouched by that fire. Did those trees stop the advance of the fire? Perhaps.

<sup>36</sup> FEMA Technical Report, 1991 Oakland Fire

<sup>37</sup> Margaret Sullivan, *Firestorm: the study of the 1991 East Bay fire in Berkeley*, 1993





The principles of evolutionary theory suggest that trees that evolved in similar climates will have similar properties. Most of our non-native trees are from a Mediterranean climate, much like our own climate. As the scientists at the University of Tasmania observed in their study of their native flora, *"The range of energy values recorded in this study is...similar to documented levels in Mediterranean plant species."*<sup>38</sup>

#### **No evidence that Monterey pine and acacia are particularly flammable**

We have focused on eucalyptus in discussing its flammability relative to native trees because it is the primary target of this project, but before we leave this topic, I should add that the DEIS assumes that both Monterey pines and acacia are equally flammable without providing any evidence to support that assumption. In its letter of May 27, 2009, URS Corporation questions this assumption:

*"The UC asserts that Monterey pine and acacia are regionally exotic species...The UC inaccurately characterizes the fire hazard risk posed by the two species however... Monterey pine and acacia trees in the treatment area only pose a substantial fire danger when growing within an eucalyptus forest. In the absence of the eucalyptus overstory, they do not pose a substantial fire hazard."* (Attachment A)

Robert Schroeder and Robert Martin (UC Berkeley) compared the ignitability of leaf litter and duff layers of Monterey pine with Redwood leaf litter and duff layers in the laboratory.<sup>39</sup> They report that although the litter of the Monterey

<sup>38</sup> Dickinson, K.J.M. and Kirkpatrick, J.B., "The flammability and energy content of some important plant species and fuel components in the forests of southeastern Tasmania," *Journal of Biogeography*, 1985, 12: 121-134.

<sup>39</sup> Robert Schroeder and Robert Martin, "Ember Ignitability of Pinus Radiata and Sequoia Sempervirens Litter: Methodology and Results," in "Proceedings of California's 2001 Wildfire Conference: 10 Years After the 1991 East Bay Hills Fire"

pine is slightly more likely to ignite than equally moist litter of the Redwood, the litter of the Redwood is more resistant to moisture and is therefore more likely to ignite.

If the final EIS cannot provide evidence of the flammability of Monterey pines and acacia, they should be not be destroyed by a FEMA grant which is for the purpose of fire hazard mitigation.

**In conclusion, there is no evidence that the destruction of exclusively non-native trees in order to promote the growth of native species will reduce fire hazard. In fact, it may increase fire hazard if SOD kills the oak woodlands that are the landscape goal of these projects. In any case, distributing tons of dead wood on the ground will be far more flammable than the existing landscape.**

There is one important caveat to this conclusion. FEMA's technical report on the 1991 fire does not single out eucalypts as the cause of that fire. The fire started in grass—as do most fires in California because grass ignites easily—and spread to predominantly native scrub and chaparral. The only specific mention of the role of eucalypts in the 1991 fire in the FEMA report is related to the deep freeze that occurred the winter preceding that fire: *"The unprecedented drought was accompanied by an unusual period of freezing weather, in December 1990, which killed massive quantities of the lighter brush and eucalyptus. Dead fuel accumulated on the ground in many areas and combined with dropped pine needles and other natural debris to create a highly combustible blanket. Due to the fiscal cutbacks, governmental programs to thin these fuels and create fuel breaks were severely curtailed, so the fuel load was much greater than normal by the second half of 1991."*<sup>40</sup> Such freezes, sufficiently deep and sustained, causing eucalypts (and other plants) to die back are very rare in the Bay Area. In fact, there has not been such a freeze in 23 years and the previous freeze was in the early 1970s. Since they are rare, they can be easily mitigated by clearing the dead debris after such a freeze, a significantly more cost-effective and less destructive measure than destroying hundreds of thousands of trees.

The DEIS claims to have considered this as an alternative to the proposed projects, but rejects it as too costly: *"The fire hazard represented by eucalyptus trees can be reduced by removing or chipping the dead material after a freeze. This is a major undertaking, however, and because it is not done regularly, the personnel, equipment and funds required to do it quickly are not likely to be available. Cutting and removing or chipping eucalyptus trees avoids the fire hazard a freeze creates."* (DEIS 3-3) There has not been such a freeze in over 23 years and the DEIS acknowledges that the climate in the Bay Area has warmed and is expected to continue to warm. It seems possible—if not likely—that there will not be another such freeze. Therefore, the preventive medicine of destroying all non-native trees seems unnecessarily destructive.

**If the final EIS continues to maintain that cleaning up after a freeze is not cost-effective, please provide the cost-benefit analysis that would support such a claim. Please include in that cost-benefit analysis evidence that specialized equipment and personnel would be required to remove dead leaf litter, something ordinary gardeners should be capable of doing with the tools they have on hand.**

Recall that we are considering the question of whether or not the existing landscape is more flammable than the native landscape which is predicted by the sponsors of these projects. We have answered that question by comparing two specific species with respect to their flammability: the predominant non-native species that will be destroyed (eucalyptus) and the oak-bay woodland which sponsors believe will be "recruited" into the landscape now occupied by

<sup>40</sup> Page 6, "East Bay Hills Fire Oakland-Berkeley, California," United States Fire Administration, Technical Report Series, FEMA

non-native plants and trees. We have not found any evidence that the oak-bay woodland is less flammable than the eucalyptus forest now and even less likely to be less flammable in the future, given the spread of SOD.

**Are native plants and trees less flammable than non-native plants and trees?**

**Now we will step back from considering specific species and consider the broader question of whether or not native plants and trees are less flammable than non-native plants and trees because that is the implication of the FEMA grant applications.**

We will start by using one of the measures of fire hazard risk used by the DEIS: **flame lengths**. The DEIS says, *“An 8-foot flame length represents a nationally recognized standard above which erratic fire behavior and difficulty in control and suppression are anticipated.”* (DEIS 5.2-1 & 4.3-3) And the DEIS reports the flame lengths of existing vegetation as follows: (DEIS 4.3-8-10)

| Vegetation Types (4.3-8-10)  | Flame Length (feet)       | Nativity   |
|------------------------------|---------------------------|------------|
| Oak-Bay Woodland             | 1-34                      | Native     |
| Monterey pine                | 2-16                      | Not Native |
| Redwood                      | 7-31                      | Native     |
| Eucalyptus                   | 6-21                      | Not Native |
| Northern Coastal Scrub-xeric | 14-32                     | Native     |
| Northern Coastal Scrub-mesic | “less extreme than xeric” | Native     |
| Coyote Brush                 | 14-32                     | Native     |
| Grassland                    | 2-10                      | Not Native |

Here’s what we learn from the DEIS about flame length: **The reported maximum flame lengths of all three non-native vegetation types are shorter than all reported maximum flame lengths of native species.**

**Manipulation of the computer model of fire behavior**

**Despite the flame lengths reported by the DEIS for the existing vegetation in the projects, the DEIS reaches the bizarre conclusion that the post-treatment landscape of exclusively native plants and trees will have shorter flame lengths than the existing vegetation: *“In almost all post-treatment locations flames are predicted to be no greater than four feet in length and to produce only surface fires, with little torching after treatment.”*** (DEIS Appendix M-13)

**The DEIS accomplishes this magical transformation of the native landscape from flammable to non-flammable by changing numbers assigned to key variables to manipulate the computer model used to evaluate fire behavior. Here are just a few examples of how the computer model has been manipulated to reach the desired conclusion:**

- The DEIS claims that *“Tree canopy cover is not expected to be changed enough for treatments to alter the category of canopy cover...Where eucalyptus trees are to be removed canopy cover from existing shorter hardwoods is expected to expand.”* (DEIS Appendix M-3) Eucalyptus occupies 824 acres, Monterey pine occupies 157 acres of the project area and oak-bay woodland occupies 320 acres. Eucalyptus and Monterey pine will be removed. In other words, the DEIS predicts that the oak-bay woodland will expand into 980+ acres to cover all acres presently forested with non-native trees. (That sounds “invasive” to me.) The *Sunset Western Garden Book* says that coast live oak can grow 25 feet in 10 years and 50 feet in 25 years. Given that rate of growth, it would not be physically possible for existing oak trees to expand to cover an additional 980 acres in centuries, let alone the life of this project. The most interesting aspect of this particular manipulation of the

computer model is that it is based on the fact that **the computer model obviously considers any land shaded by tree canopy cover less flammable than land directly exposed to the sun.**

- The computer model manipulates the fuel models (Appendix M, Table 1) to achieve the desired outcome. These are just a few examples of such manipulation of the fuel models:
  - Non-native trees are assigned lower scores for “moisture of extinction” and higher “heat content” than native trees.
  - “Treated” native trees and vegetation are assigned lower scores for key variables but “treated” eucalypts are assigned the same scores as untreated eucalypts.
- The computer model assumes a constant wind speed of 22 miles per hour. (DEIS 4.1-5) This is an unrealistically low wind speed to model fire behavior of a wind driven fire, as most wildfires in California are. All wildfires in the East Bay in the 20<sup>th</sup> Century were wind-driven fires with Diablo wind conditions according to the FEMA Technical Report on the 1991 fire. The Technical Report also reported that the Diablo wind that fueled that fire typically has wind speeds of 35-70 miles per hour. If winds of that speed had been used by the computer model, the outcome would probably have been significantly different because everything burns in a wind driven fire. A wind driven fire is indiscriminate in its fuel which would have prevented the computer model from reaching the unrealistic conclusion that a native landscape would be less likely to burn than the existing non-native landscape. Despite the unrealistically low wind speed used in the computer model of fire behavior, the DEIS claims, *“To assess the worst-case scenario, all fire behavior predictions assumed Diablo wind conditions, which are characterized by extremely hot, dry weather and strong winds from the northeast.”* (DEIS 4.3-10) The computer model must use a significantly higher speed, or this contradictory statement should be removed from the final EIS. The computer model in the DEIS does not represent Diablo wind conditions.

The DEIS claims that the computer model reaches the conclusion that flame lengths in the post-treatment landscape will be reduced to 2-feet: *“The calculated average flame length under the proposed and connected actions is approximately 2 feet, with 89% of the areas in the low or moderate fire behavior categories..”* (DEIS 5.2-4) This is not a credible conclusion, given that the DEIS predicts a native landscape and the minimum flame length reported for every native vegetation type except oak-bay woodland in the existing landscape is greater than 2 feet. (see DEIS 4.3-8-10) The final DEIS cannot claim on the one hand that native vegetation will revegetate the post-treatment landscape and on the other hand claim that post-treatment flame lengths will be significantly shorter than the flame lengths of native vegetation. This claim of 2-foot flame lengths in the post-treatment landscape is another indication that data used by the computer model has been manipulated to significantly and unrealistically reduce fire hazard in the post-treatment landscape. This claim is inconsistent with the claim that flame lengths in the post-treatment landscape will be less than 4 feet: *“In almost all post-treatment locations flames are predicted to be no greater than four feet in length and to produce only surface fires, with little torching after treatment.”* (DEIS Appendix M-13) Neither of these claims is credible, nor are they consistent. If the final EIS continues to make these claims, it must explain how it is physically possible to achieve shorter flame lengths than it reports for the native vegetation which it predicts will remain in the post-treatment landscape.

The computer model is a black box in which the data can be manipulated in a way that is obscure to the public. It has been used by the DEIS as a means of reaching its desired conclusion, which is to “prove” that native vegetation is less flammable than non-native vegetation. Every “adjustment” of the data variables has increased flammability of non-natives and decreased flammability of natives. We are unlikely to have identified all the ways in which the computer model has been manipulated to reach the desired outcome.



The final EIS must provide evidence to support every "adjustment" that has been made to the computer model, such as moisture, heat content, tree canopy, etc. If such evidence cannot be provided, the "adjustments" should be reversed and the computer model re-run with a higher wind speed consistent with Diablo winds.

**What will the post-treatment vegetation be and will it be less flammable than existing vegetation?**

We have considered the question of whether or not the post-treatment landscape would be less flammable than the existing landscape, based on the assumption of the DEIS that the post-treatment landscape will be an exclusively native landscape. **Now we will consider the same question, based on our belief that the post-treatment landscape is more likely to be dominated by non-native plants and weeds than native plants.**

I have 15 years of experience observing similar projects all over the Bay Area. Most have been spectacularly unsuccessful in replacing non-native vegetation with native vegetation unless they have been planted intensively, irrigated, and constantly weeded. Most managers of public lands do not have the resources to intensively garden thousands of acres of open space and so their projects inevitably result in weedy messes with few native plants. Despite that personal experience, I will confine my comments to scientific sources, including studies that prove this point empirically: **particularly in an urban setting, replacing a non-native landscape with a native landscape requires intensive gardening effort.**

**The proposed projects do not intend to plant anything to replace the non-native trees and shrubs they will destroy unless erosion requires seeding in specific locations where erosion occurs:**

*"The MMPs would rely on recruitment of native vegetation into the areas where non-native trees have been removed from the over story canopy. Hydroseeding may be used as an erosion control best management practice, but is not intended to serve as a floral introduction for the purpose of re-vegetation. Rather, hydroseeding would be used as an adaptive management technique in areas at risk of surface erosion from surface rainwater runoff, or in some cases, in areas that fail to establish native vegetative cover under natural recruitment." (DEIS, 5.1-3)*

**The DEIS claims that existing native plants and trees will be "recruited" into the acres vacated by 824 acres of eucalypts and 157 acres of Monterey pine. The URS Corporation which was the initial consultant for this project informed FEMA in its letter of May 27, 2010 (Attachment A) that this is an unrealistic expectation:**

*"However, we question the assumption that the types of vegetation recolonizing the area would be native. Based on conditions observed during site visits in April 2009, current understory species such as English Ivy, acacia, vinca, French broom, and Himalayan blackberry would likely be the first to recover and recolonize newly disturbed areas once the eucalyptus removal is complete. These understory species are aggressive exotics, and in the absence of proactive removal there is no evidence to suggest that they would cease to thrive in the area, especially the French broom which would be the only understory plant capable of surviving inundation by a 2-foot-deep layer of eucalyptus chips....It is not clear how the mulch would prevent the proliferation of invasive species while simultaneously encouraging the growth of existing native species. Despite thorough research, we were unable to find documentation of the ability of exotic chip mulch to suppress undesirable species while encouraging favorable species. It is highly unlikely that the site would naturally restore itself to native*

**conditions given the aggressive nature of the weedy exotic species that are already established in the treatment areas and dominate the seed bed."**

Despite this very pointed advice from FEMA's consultant, the DEIS assumes that native plants will return to the landscape if non-native plants are eradicated. In fact, regardless of the methods used to eradicate non-native plants the results are the same: **native plants do not return when non-native plants are removed.**

- Spraying herbicides is a popular method of eradicating non-native plants because it is considered the most cost-effective method. In addition to the obvious health risks, the downside of herbicide use is that most (e.g., Roundup) are as likely to kill the natives as the non-natives. This problem is illustrated by a USDA study.<sup>41</sup> **Although the herbicide is assumed to "dissipate" within a few years, the negative effect on the natives persisted 16 years later: "...the invasive leafy spurge may have ultimately increased due to spraying. Conversely, several desirable native herbs were still suffering the effects of the spraying..."**
- Even when native plants are removed, non-native plants occupy the cleared ground. Environmental scientists at UC Berkeley removed native chaparral from experimental plots in Northern California for the purpose of fuel reduction, using two different methods (prescribed burns and mastication), in different seasons, over a period of several years. The result was more non-native plants than the original native landscape: *"We identified 146 species in the third post-treatment year, of which 23% were nonnative and 77% were native...On average nonnative annual grasses composed 13.8% of the total abundance in fire treatments and 47.5% in mastication treatments."*<sup>42</sup>
- A scientist arrived at the same conclusion after attempting to restore oak-studded grassland on Vancouver Island. He tried several different methods of removing invasive grasses for several years only to find that *"...the decline of the native plant species accelerated..."*<sup>43</sup>
- Jon E. Keeley's book about fire in Mediterranean ecosystems concurs: *"...unless burning is accompanied by active native plant restoration, this target will often be replaced by other alien species rather than by more desirable native species."*<sup>44</sup>

**We also have local examples that illustrate that natural succession results in predominantly non-native vegetation.** Professor Joe McBride of UC Berkeley studied natural succession of vegetation in vacant lots in Berkeley, California.<sup>45</sup> He identified 22 vacant lots in Berkeley, ranked them into 4 classes based on how long they had been vacant, and reported the type of vegetation in each class:

| Class         | % Forbs | % Grasses | % Shrubs | % Trees | % Bare Ground |
|---------------|---------|-----------|----------|---------|---------------|
| <5 years      | 68.1    | 25.6      | 0        | 0       | 6.3           |
| 5 – 10 years  | 52.4    | 43.7      | 0        | 0       | 3.9           |
| 11 – 20 years | 24.7    | 75.3      | 0        | 0       | 0             |
| > 20 years    | 43.8    | 34.2      | 20       | 2.5     | 2.0           |

<sup>41</sup> <http://www.ars.usda.gov/is/pr/2009/090630.htm?pf=1>

<sup>42</sup> Jennifer Potts and Scott Stephens, "Invasive and native plant responses to shrubland fuel reduction: comparing prescribed, mastication, and treatment season," *Biological Conservation*, 142 (2009) 1657-1664

<sup>43</sup> Andrew MacDougall, University of Guelph, Ontario, Canada, NY Times Magazine, 6/29/08

<sup>44</sup> Jon E Keeley et.al., *Fire in Mediterranean Ecosystems: Ecology, Evolution and Management*, Cambridge University Press, 2011

<sup>45</sup> Joe McBride, "Plant succession on vacant lots in Mediterranean Climate: A case study in Berkeley, California," Council of Educators in Landscape Architecture, conference on Urban Nature, March 30-April 2, 2011 (in press)



Fifty-three of the 67 species of plants found in the vacant lots are “species exotic to California and 24 have been categorized as weeds.” The dominant forbs in lots vacant up to 20 years were bur clover, bristly ox tongue, fennel, and pliantain. Dominant grasses in lots vacant from 11-20 years were wild oat and rip gut.

This study of vacant lots is a preview of what we can expect to occupy the bare ground (80% of the project areas that aren't covered with 2 feet of wood chips) of the project areas: non-native weeds for the first ten years, then non-native grasses for the next 10 years. After 20 years, Professor Mc Bride found that coyote brush is the dominant shrub with a few trees.

Here's what Professor McBride predicts for the long-term future:

*“It is anticipated that older lots would be invaded by *Quercus agrifolia* (coast live oak) and *Umbellularia californica* (California bay) along with exotic species such as *Prunus cerasifera* (cherry plum) and *Acacia malanoxylon* (blackwood acacia) to form a woodland stage of vacant lot succession in Berkeley. **The time required for this succession is estimated to be about 100 years, based on natural succession in the Berkeley Hills.**”*

Unfortunately, it seems more likely that our oaks will be killed by Sudden Oak Death within 100 years, given its epidemic spread in the East Bay in the past two years, as noted earlier.

**The other local example of natural succession despite intensive gardening effort is the roof of the California Academy of Sciences.** When the California Academy of Sciences reopened in San Francisco in August 2008, its “living roof” was considered its most unique feature. Thirty species of native plants were candidates for planting on the roof. They were planted in test plots with conditions similar to the planned roof and monitored closely. Only nine species of native plants were selected for planting on the roof because they were the only plants that were capable of self-sowing from one season to another, implying that they were “sustainable.” A living demonstration of “sustainability” was said to be the purpose of the living roof.

In February 2011, the Academy published its first monitoring report of the living roof. The monitoring project divided the roof into four quadrants. **After only 2-1/2 years non-natives outnumbered natives in two of the quadrants that are less intensively gardened.** Although natives outnumber non-natives significantly in the other two quadrants, non-natives are also growing in these quadrants.

The journal of the American Society of Landscape Architects reported<sup>46</sup> that the roof is intensively gardened: irrigated, weeded, fertilized, reseeded, and replanted. Indeed, the author of the journal article gave it the title, “High Maintenance Superstar.” Yet, despite planting only species of native plants that were suited to the conditions on the roof and despite intensive gardening effort, the roof was dominated by non-native plants within only 2-1/2 years.

Peter Del Tredici has been telling us to expect this result for several years. He is a Senior Research Scientist at the Arnold Arboretum at Harvard University and a Lecturer in the Department of Landscape Architecture at the Harvard Graduate School of Design.

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<sup>46</sup> Linda McIntyre, “High Maintenance Superstar,” *Landscape Architecture*, August 2009.

In a recent publication<sup>47</sup>, he advised the managers of public lands in urban areas to abandon their fantasy that native plants are sustainable in urban settings:

*“The notion that self-sustaining, historically accurate plant associations can be restored to urban areas is an idea with little credibility in light of the facts that 1) the density of the human populations and the infrastructure necessary to support it have led to the removal of the original vegetation, 2) the abiotic growing conditions of urban areas are completely different from what they were originally; and 3) the large number of non-native species that have naturalized in cities provide intense competition for the native species that grew there prior to urbanization.”*

Sure, he says, we can grow native plants, but they require at least the same amount of effort as growing any other plant and are therefore just another form of gardening: *“Certainly people can plant native species in the city, but few of them will thrive unless they are provided with the appropriate soil and are maintained to the same level as other intentionally cultivated plants.”*

The proposed project does not intend to plant anything nor does it plan to irrigate or garden. Therefore, we will assume for the purposes of evaluating the fire hazard that 80% of the project acres that aren't covered with wood chips will be populated predominantly by non-native forbs and grasses for about 20 years with shrubs joining the mix after that. The assumption that the existing 320 acres of oak-bay woodland will expand to cover 980 acres of land now occupied by eucalypts and Monterey pines is ridiculous on the face of it.

We will briefly compare the flammability of the likely post-treatment landscape with the existing forest of non-native trees. Using the descriptions of flammability of the existing landscape in the DEIS (4.3-8-10), we will present the key variables in the following table:

| Vegetation Types               | Flame Length (feet)     | Crown Fire | Ignitibility                             | Other           | Nativity   |
|--------------------------------|-------------------------|------------|------------------------------------------|-----------------|------------|
| Oak-Bay                        | 1-34                    | Possible   | High if surface fuels are grass or scrub |                 | Native     |
| Monterey pine                  | 2-16                    |            |                                          |                 | Non-native |
| Redwood                        | 7-31                    |            |                                          |                 | Native     |
| Eucalyptus                     | 6-21                    |            | Easy                                     |                 | Non-native |
| Northern Coastal Scrub – xeric | 14-32                   |            |                                          |                 | Native     |
| Northern Coastal Scrub – mesic | Less extreme than xeric |            |                                          |                 | Native     |
| Coyote Brush                   | 14-32                   | torching   |                                          |                 | Native     |
| Grassland                      | 2-10                    |            | Very ignition prone                      | Spreads rapidly | Non-native |

Drawing from the descriptions of the flammability of existing vegetation types in the proposed project areas provided by the DEIS, we conclude that there is no evidence that either species of non-native tree in the project areas is more flammable than the grassland and scrub which is likely to occupy the bare ground:

- Grass is the most likely vegetation to ignite and fire spreads rapidly through it.

<sup>47</sup> Peter Del Tredici, “Spontaneous Urban Vegetation: Reflections of Change in a Globalized World,” *Nature and Culture*. Winter 2010, 209-315.

- This is consistent with the 1991 Oakland fire which started in grass then jumped to shrubs before becoming a wind driven wildfire, according to the FEMA technical report of that fire: *"On...October 19, 1991...a brush fire was reported...the vegetation on the slope was mostly grass with some brush and a few trees."* (page 22) The fire leapt out of control when a spark reached nearby brush On October 20, 1991: *"Very suddenly, the fire flared up...Burning embers had been carried from one of the hot spots to a patch of tinder dry brush."* (page 26)
- In the past few weeks grass fires in the San Francisco Bay Area have been reported nearly daily. We can see those fires on television news. The flames move rapidly across the grass.
- Jon E. Keeley and colleagues published a study recently about specific wildfires in the Wildland-Urban-Interface (WUI) of California in neighborhoods that are similar to the East Bay hills in topography and vegetation.<sup>48</sup> The authors studied the property damage resulting from specific wildfires in California "...and identified the main contributors to property loss." Keeley and his colleagues found that steep slopes in canyons that create wind corridors were the best predictors of fire damage and that **herbaceous fuels were more likely to spread the fire than woody fuels.**
- Jon E. Keeley testified to the US Senate in 2007, regarding wildfires in California: *"It is estimated that no more than 3% of the recent 2007 fires...occurred in forests...the remaining 97 percent occurred in lower elevation shrublands and urban areas, burning native shrublands such as chaparral and sage scrub, non-native grasslands, and urban fuels."*

**Wind is a more important factor than fuel loads in wildfires in California.**

The DEIS is focused on managing fuel loads as the primary means of mitigating fire hazard and we have so far concentrated on responding to that assumption. Now we change gears by questioning that premise. Some fire scientists do not agree that fuel loads are the most important factor in causing wildfires and therefore not the most important factor in reducing fire hazard. This is the counter argument as expressed by Jon Keeley in his book about fire in Mediterranean ecosystems:

*"Best management practices require accepting the preponderance of evidence and in the case of fires in southern California, it is blatantly clear that age of fuels is not the primary determinant of catastrophic fire losses. The primary problem with ignoring this evidence is that it distracts from real solutions to fire problems in the region, which are not tied to fuel treatments in the wildlands but rather on concentrated effort at the wildland urban interface. In the twenty-first century most agencies in the region have abandoned the idea of trying to create mosaics of fuel age classes as a means of controlling wildland fires."<sup>49</sup>*

Although the proposed project is not in southern California, the post-treatment landscape will be composed primarily of chaparral scrub in a nearly treeless landscape, which will be similar to the chaparral communities of southern California. Coyote brush is the dominant scrub in both southern and northern California wildlands and is likely to dominate the post-treatment landscape as it does the vacant lots of Berkeley. This is how UC Berkeley's 2020 Long Range Development Plan describes the original landscape of the project areas: *"At the time [1868], the hills above the campus were a mix of grassland, oak savannah and open chaparral."* This is the landscape which this project is trying to recreate.

<sup>48</sup> Alexandra Syphard, Jon E. Keeley, et. al., "Housing Arrangement and Location Determine the Likelihood of Housing Loss Due to Wildfire." PLOS ONE, March 18, 2012

<sup>49</sup> Jon E Keeley et.al., *Fire in Mediterranean Ecosystems: Ecology, Evolution and Management*, Cambridge University Press, 2011

Fuel age is a surrogate for fuel load, i.e., the longer it has been since a fire, the greater the fuel load that accumulates. Fire scientists, who don't consider fuel age the most important factor in causing wildfires, consider the foehn winds which are called Santa Ana winds in southern California and Diablo winds in northern California, the prerequisite for wildfires. This key factor in causing wildfires is shared by both southern and northern California.

*"However, there was only a weak positive relationship between the [Palmer Drought Severity Index] and total area burned (Keeley 2003). The weak relationship between DPSI and fire in this region [Central Coast] is in contrast to stronger relationships observed in other regions of the western U.S. and probably indicates the stronger control exerted by autumn foehn wind events than by fine fuels or fuel moisture levels on wildfire risk in the region (Keeley 2004)."*<sup>50</sup>

According to the FEMA Technical Report of the 1991 Oakland fire, foehn winds were a factor in every wildfire in the East Bay Hills in the 20<sup>th</sup> Century: 1923, 1970, 1980, and 1991.

The Vesta Project in Australia which we have already cited makes these observations about the role of the wind in wildfires in the dry eucalyptus forest:

- **"Rate of spread is directly related to wind speed** measured at 5 m in the forest above a threshold wind speed of about 5 km h<sup>-1</sup>."
- **"Rate of spread** is directly related to characteristics of the surface fuel bed and understory layers but is **only weakly related to fuel load alone.**"
- **Wind speed above the tree canopy is greater than wind speed near the forest floor by a ratio of 3:1.**
- **"...unlike wind flow in the open, gusts do not persist for very long beneath the canopy."**

**The tall trees are a barrier to the wind which slows the progression of a wind driven fire. Even the California Native Plant Society agrees that a windbreak provides protection from a wind driven fire:**

*"As a former aerospace engineer, it also occurred to me that clearing all vegetation around a home actually created the perfect condition for the high winds that accompany large fires to flow unperturbed (laminar flow). There was no longer any barrier to create turbulence or interference and slow down the 80 mph bone-dry winds laden with cinders as thick as the fire falls of Yosemite."*<sup>51</sup>

**The DEIS does not acknowledge that the tall trees that will be destroyed in the project areas are providing a wind break which can slow or stop a wind-driven fire. This is an important consideration in evaluating the claimed reduction in wildfire risk and must be analyzed by the final EIS.**

**Two studies of actual wildfires in California report that wind is a key factor.** In 1987, 20,000 hectares burned in a wildfire in the Shasta-Trinity National Forest. The effects of that fire on the forest were studied by Weatherspoon and Skinner of the USDA Forest Service.<sup>52</sup> **They found the least amount of fire damage in those sections of the forest that had not been thinned or clear-cut. In other words, the more trees there were, the less damage was done by the fire.** They explained that finding:

<sup>50</sup> Neil Sugihara et. al., *Fire in California Ecosystems*, University of California Press, 2006, page 322

<sup>51</sup> Greg Rubin, "Wildfire Safety: Lessons Learned from Southern California," *Fremontia*, Vol. 38: 2/38.3

<sup>52</sup> Weatherspoon, C.P. and Skinner, C.N., "An Assessment of Factors Associated with Damage to Tree Crowns from the 1987 Wildfires in Northern California," *Forest Science*, Vol. 41, No 3, pages 430-453

*"The occurrence of lower Fire Damage Classes in uncut stands [of trees] probably is attributable largely to the absence of activity fuels [e.g., grasses] and to the relatively closed canopy, which reduces insolation [exposure to the sun], wind movement near the surface, and associated drying of fuels. Conversely, opening the stand by partial cutting adds fuels and creates a microclimate conducive to increased fire intensities."*

In other words the denser the forest,

- **The less wind on the forest floor, thereby slowing the spread of fire**
- **The more shade on the forest floor**
  - **The less flammable vegetation on the forest floor**
  - **The more moist the forest floor**

All of these factors combine to reduce fire hazard in dense forest. **The proposed project will result in highly flammable conditions by eliminating the windbreak, shade, and moisture on the forest floor.**

Keeley's most recently published study<sup>53</sup> of specific wildfires in the Wildland-Urban-Interface (WUI) of California also found the same relationship between wind corridors and spread of wildfires. The authors studied the property damage resulting from specific wildfires in California "...and identified the main contributors to property loss." Here are some of their findings:

- **"...property loss was most likely in areas of historical high fire frequency, which corresponded with wind corridors."**
- **"Structures located near the edges of developments, or in housing clusters on steep slopes, were also more susceptible."**
- **"...property loss was more or as likely to occur within herbaceous fuel types than within the higher fuel-volume woody types that are typically considered as the most hazardous fuels."**

For emphasis, I reiterate that these studies of wildfires in California suggest that the proposed project will not reduce fire hazard in the East Bay hills. Rather, it is more likely to increase fire hazard by eliminating most of the wind break provided by the forest so that the surrounding community—which is on steep slopes—is subjected to more wind and by replacing woody fuels with herbaceous fuels.

The federal Environmental Protection Agency (EPA) submitted a public comment at the time of the scoping process which recommended that tall trees not be destroyed by the proposed projects:

*"EPA recommends that FEMA commit to limiting tree-removal to only non-native species for all four hazard mitigation projects evaluated in the Environmental Impact Statement (EIS). **Include a commitment to leave trees greater than a specific DBH in size, and identify how this would be implemented. Diameter and height are, in effect, measures of tree resistance to fire damage. Large diameter trees are generally more able to withstand wildfire, assuming that surface and ladder fuels have been reduced and the severity of fire is not extreme. By leaving the largest trees and treating the surface and ladder fuels, fire tolerant forest conditions can be created.**"* (DEIS, Appendix K2)

<sup>53</sup> Alexandra Syphard, Jon W. Keeley, et. al., "Housing Arrangement and Location Determine the Likelihood of Housing Loss Due to Wildfire." PLOS ONE, March 18, 2012

FEMA must take this advice into consideration in the final EIS. If the final EIS continues to ignore this advice from FEMA's sister agency—which is responsible for protecting our environment—there must be justification for ignoring it and scientific evidence to support that justification. **If the advice of the EPA had been followed, the existing windbreak provided by the tall non-native trees would not be compromised by the proposed project.**

**The proposed projects will increase fire hazards in the East Bay**

**We have provided both scientific and observational evidence that support the conclusion that the proposed projects will increase fire hazards in the East Bay by:**

- Distributing tons of flammable dead wood on 1,000 acres of public land
- By conducting prescribed burns that add to the risk of igniting a wildfire
- By encouraging a more flammable landscape of grassland, chaparral, and oaks which are dying of Sudden Oak Death
- By eliminating shade and moisture which reduce the probability of ignition.
- By eliminating the windbreak provided by tall trees that will not be replaced by tall trees

**Therefore, this project—as presently defined--cannot be funded by FEMA grants which are for the stated purpose of reducing fire hazards.**

**Part II: The proposed projects will damage the environment by significantly increasing the emission of greenhouse gases both immediately and for the long-term**

The DEIS analysis of greenhouse gas emissions resulting from the proposed projects is completely inadequate because:

- It does not identify all sources of emissions
- It does not acknowledge or quantify the loss of the ability of the existing forest to continue to sequester carbon in the future
- It provides inadequate information to evaluate the accuracy of the calculations provided
- It misrepresents or misinterprets scientific studies regarding carbon loss resulting from forest fuel treatments
- It does not acknowledge or comply with California law (AB32) requiring reduction in greenhouse gas emissions

**The DEIS grossly underestimates loss of carbon resulting from the proposed projects.**

**Only 15% of carbon storage in the existing forest has been quantified by the DEIS**

The DEIS quantifies only two sources of carbon dioxide emissions: the fossil fuels used by motorized equipment during the project and the trunks of the trees greater than 5" DBH that will be destroyed. Calculating loss of stored carbon based solely on the trunks of the trees that will be destroyed **excludes** the following sources of stored carbon in the forest: the understory, the forest floor layer (e.g., duff and litter), the bark, roots, and branches of the trees, and the soil. RA Birdsey of the US Forest Service reports that **only 15% of total carbon stored in forest ecosystems in the United States is contained in the trunk:**<sup>54</sup>

<sup>54</sup> "Carbon Changes in US Forests," RA Birdsey and LS Heath, US Forest Service Gen. Tech. Report RM-GTR-271, 1995

Allocation of carbon in forest ecosystems and trees  
US forests, 1992

|     |                         |              |
|-----|-------------------------|--------------|
| 1%  | foliage                 |              |
| 5%  | roots                   |              |
| 15% | bole (trunk)            |              |
| 9%  | other wood above ground |              |
|     | 30%                     | tree         |
|     | 61%                     | soil         |
|     | 8%                      | forest floor |
|     | 1%                      | understory   |
|     | 100%                    | Total        |

Although the soil will remain when the trees are destroyed, **there is scientific evidence that there will be some loss of soil carbon as a result of this project:** *"...a major forest disturbance, such as a clearcut harvest, can increase coarse litter and oxidation of soil organic matter. The balance of these two processes can result in a net loss of 20% of the initial carbon over a 10-15 year period following harvest."*<sup>55</sup> The destruction of all non-natives trees on the properties of UCB and the City of Oakland and 90% of the trees on the property of EBRPD, surely qualifies as a "major forest disturbance" which will result in loss of carbon stored in the soil of the forest.

#### **Carbon released by prescribed burns must be quantified**

East Bay Regional Park District plans to chip the trees that are destroyed and distribute them on 20% of the project areas to a depth of 4-6 inches. They plan to burn the wood that cannot be distributed on the ground without exceeding these limits. This excess wood will be burned in piles. In addition to pile burns, EBRPD also plans to conduct broadcast burns for the purpose of destroying non-native vegetation and vegetation debris considered potential fuel for a fire.

The DEIS does not quantify the carbon that will be released by these burns, citing an EPA policy of 1996: *"It should be noted that the emission of CO<sub>2</sub> from burning has not been calculated since the removal of the vegetation would allow new vegetation to grow, eventually consuming at least a portion [of] the CO<sub>2</sub> released during burning, as noted in EPA emission factor guidance (EPA 1996)"*

This EPA policy regarding CO<sub>2</sub> emissions from prescribed burns has been revised to include carbon emissions from prescribed burns. In response to climate change, the EPA established an "Emission Inventory Improvement Program" (EIIP) in 1997. Since then, the EIIP has continuously expanded and improved the National Emissions Inventory (NEI). The NEI for 2008 is available on the EPA website. **It includes reporting of CO<sub>2</sub> emissions resulting from prescribed burns.** Data for each type of emission is available on line. It can be sorted by state. The 2008 NEI reports that the State of California emitted 2,156,547 tons of carbon dioxide from prescribed burns in 2008.<sup>56</sup>

<sup>55</sup> "Carbon Changes in US Forests," RA Birdsey and LS Heath, US Forest Service Gen. Tech. Report RM-GTR-271, 1995

<sup>56</sup> <http://www.epa.gov/ttn/chief/net/2008inventory.html>

**Obviously, the DEIS is mistaken in its outdated claim that the EPA excludes emissions from prescribed burns from calculations of greenhouse gas emissions. Therefore, the final EIS must quantify CO<sub>2</sub> emissions resulting from the prescribed burns required by the proposed projects.**

### **Unexplained reductions in emissions data which contribute to underestimates of greenhouse gas emissions**

We can identify **two unexplained reductions in emissions reported by the DEIS** which significantly reduce the emissions reported by the DEIS:

- (1) The DEIS reports carbon emissions from decaying wood in the proposed project areas alone, then claims it is reporting for both proposed and connected areas .

Tables 4.7-2 and 4.7-3 are clearly labeled "Proposed Project Areas." Since the acres of (most) vegetation types reported in 4.7-2 are significantly lower than acres of vegetation types reported for proposed and connected project areas in Table 4.2-1, we have some confidence that Tables 4.7-2 and 4.7-3 are accurately labeled.

The DEIS then uses the data in these two tables to calculate carbon loss on page 5.6-7: *"Using...the CO<sub>2</sub> equivalent sequestered in the baseline condition (see Table 4.7-3)...the annual average CO<sub>2</sub>e rate from the decay of woody material would be 1,500 metric tons per year over the 10-year program period."* (DEIS 5.6-7)

In the following paragraph, the DEIS adds this reported 1,500 metric tons of CO<sub>2</sub>e emissions to reported emissions from motorized equipment and describes the total as emissions from "proposed and connected actions:" *"In total, GHG emissions would be roughly 2,050 metric tons per year (550 metric tons per year from treatment under the proposed and connected actions plus 1,500 metric tons from annual decomposition)..."*

**In other words, the DEIS has underestimated tonnage of CO<sub>2</sub> emissions from decaying wood by reporting only carbon stored in the proposed acres and then claiming that it is reporting for the proposed and connected acres.** This error must be corrected in the final EIS.

- (2) Furthermore, in addition to claiming that emissions from only proposed acres are actually emissions for both proposed and connected acres, the DEIS divides emissions from decaying wood by 4. **The DEIS provides no explanation for reporting only 25% of emissions from decaying wood:** *"...assuming that one-fourth of the CO<sub>2</sub>e sequestered in the baseline condition was trimmed or chipped and left on site..."*

The DEIS describes the disposition of dead wood from the destruction of the trees as follows:

UCB & City of Oakland: *"Felled trees up to approximately 24 inches in diameter at breast height would be cut up into chips 1 to 4 inches long and the chips would be spread on up to 20% of each site to a maximum depth of 24 inches....Branches from trees greater than 24 inches DBH would be cut up and scattered on the site...The trunks of these trees would typically be cut into 20 to 30 foot lengths. Some tree trunks would be placed to help control sediment and erosion or support wildlife habitat. Some tree trunks may be moved to an adjacent portion of the hillside or chipped for use as fuel, a source of paper pulp, or horse bedding."* (DEIS ES-11)



In other words, virtually all of the dead wood would be distributed on site either as chips or as logs. It will all decay and it will all release its stored carbon into the atmosphere as carbon dioxide as it decays. **There is therefore no justification for reporting only 25% of the stored carbon in the trees as carbon dioxide emissions.**

Granted, the carbon stored in large branches and huge logs will take longer to decay than the wood that is chipped, but it will decay and it will therefore release carbon dioxide into the atmosphere. However, David Nowak of the US Forest Service reports that whatever the disposition of the dead wood, 50% of carbon stored in trees is lost within 3 years of their destruction: *"Although no mulch decomposition studies could be found, studies on decomposition of tree roots and twigs reveal that 50% of the carbon is lost within the first 3 years. The remaining carbon is estimated to be lost within 20 years of mulching. Belowground biomass was modeled to decompose at the same rate as mulch regardless of how the aboveground biomass was disposed"*<sup>57</sup>

According to the DEIS, the East Bay Regional Park District will distribute wood chip mulch on 20% of the project area to a depth of 4-6 inches and pile burn any excess wood. The more shallow mulch layer will decompose more quickly, as we learned from URS Corporation (Attachment A) and the carbon will be released immediately from pile burns.

#### **Loss of the ability of the existing forest to sequester carbon in the future is not quantified**

In addition to the grossly underestimated loss of carbon stored in the existing forest ecosystem, **the DEIS does not quantify the loss of the ability of the existing forest to sequester carbon in the future.** The DEIS acknowledges that the post-treatment landscape will be less capable of sequestering carbon than the existing landscape:

*"The proposed and connected actions would also be self-mitigating to some degree in the absence of a wildfire, because native vegetation would partially replace the non-native vegetation removed. However, the planned growth of oak and bay woodlands and successional grassland containing shrub islands would not sequester as much carbon as the larger eucalyptus and pines and the denser coastal scrub that would be removed."* (DEIS 5.6-11)

**The final EIS cannot claim that legal thresholds for carbon loss are not violated without quantifying this decrease in the ability to sequester carbon.**

Blue gums live in Australia from 200 to 500 years.<sup>58</sup> They live toward the longer end of the range in milder climates such as the San Francisco Bay Area. Most Blue Gum eucalypts were planted in the East Bay between 1886 and 1913, according to David Nowak of the US Forest Service.<sup>59</sup> Therefore, they are not more than 130 years old. **They can be expected to continue to sequester carbon for at least 100 years and perhaps 300 years.**

The native trees that the proposed projects claim will occupy the ground now occupied by non-native trees are significantly smaller than the existing trees. Since carbon sequestration and storage are proportionate to biomass, the native trees will not compensate for the loss of the ability of the existing forest to sequester carbon. **The DEIS reports in**

<sup>57</sup> Nowak, David, et.al., "Effects of urban tree management and species selection on atmospheric carbon dioxide," *Journal of Arboriculture* 28(3) May 2002

<sup>58</sup> *Eucalypt ecology: Individuals to ecosystems*, by Jann Elizabeth Williams, John Woinarski, Cambridge University Press, 1997

<sup>59</sup> David Nowak, "Historical vegetation change in Oakland and its implications for urban forest management," *Journal of Arboriculture*, 19(5), September 1993,

**Table 4.7-1 that the oak-bay woodland in the project areas is storing only 8.97 metric tons of CO<sub>2</sub>e per acre, compared to 325.91 metric tons per acre in the eucalyptus forest and 184.61 metrics per acre in the Monterey pines.**

Furthermore, the predominant native tree is being killed by Sudden Oak Death at an epidemic rate, so its future is both unlikely and unknown.

**The final EIS must substantially revise its report of carbon loss from the proposed projects by:**

- Reporting carbon released from the entire forest ecosystem that will be destroyed by the proposed projects
- Reporting carbon released by prescribed burns
- Reporting carbon loss from both proposed and connected project areas
- Reporting the amount of carbon stored in all wood, not just the carbon in wood chips
- Reporting the loss of the ability to sequester carbon in the future

**The DEIS provides inadequate information to evaluate its calculation of greenhouse gas emissions**

**The final EIS should provide more information about the number of trees that will be destroyed as well as more information about the test plots that were used to calculate carbon storage**

The DEIS provides little information regarding the number of trees that will be destroyed by the proposed projects. With the exception of the three project areas on the property of UC Berkeley, the DEIS provides no information regarding the number of trees that will be destroyed. The public deserves an estimate of the total number of trees that will be destroyed by the proposed projects.

Without such an estimate of the number of trees that will be destroyed, the public cannot judge the accuracy of carbon loss reported by the DEIS. In Table 4.7-1, the DEIS reports the amount of carbon stored in 4 types of forest—eucalyptus, Monterey pine, oak-bay, and redwood—based on small test plots of those types of trees. The DEIS provides no information about the number of trees or their sizes.

Without any information about the number of trees that will be destroyed the reader has no information about the density of the trees on the acres of the project areas. And without any information about the number or sizes of the trees found in the test plots upon which carbon storage was calculated, the reader is unable to evaluate the accuracy of reported carbon loss.

In other words, the reader cannot determine how many trees will be destroyed, nor can the reader determine if the test plots are representative of the total forest, nor can the reader determine if reported carbon loss is realistic. This reader respectfully requests more information in the final EIS:

- Please provide an estimate of the total number of trees that will be destroyed by this project.
- Please provide the number and sizes of the trees on the test plots upon which carbon loss was calculated.

**The DEIS misrepresents or misinterprets scientific studies regarding carbon loss resulting from fuel reduction treatments.**

The DEIS sets up a false dichotomy to support its claim that the FEMA projects will not increase carbon dioxide emissions. It offers a false choice between theoretical carbon loss from a wildfire vs. carbon loss from destruction of the non-native forest. **This false choice violates both federal and state law regulating environmental impact studies because the measure of environmental impact as defined by those laws require that the study compare the existing, baseline condition to the potential impact resulting from the proposed project. In other words, the existing condition is the forest that exists now, not a theoretical forest that has been destroyed by fire.**

Compounding its error, the DEIS tries to support its false dichotomy by misinterpreting or misrepresenting scientific studies:

*"Studies indicate that if a wildfire occurs, the proposed type of vegetation management sequesters more carbon in the long term than leaving the sites untreated. Two wildfire modeling studies indicated that thinning would reduce damage caused by wildfires, allowing faster regrowth after a fire (Hurteau and North 2010; Wiedinmyer and Hurteau 2010). The Wiedinmyer and Hurteau (2010) study included the use of prescribed burning as a treatment method."* (DEIS 5.6-11)

**In fact, these studies don't say what the DEIS claims they say:**

In "Prescribed fire as a means of reducing forest carbon emissions in the Western United States,"<sup>60</sup> (Wiedinmyer and Hurteau 2010) the authors compare carbon loss from prescribed burns with carbon loss from wildfires in the same locations and reach the conclusion that prescribed burns result in less carbon loss than wildfires without prescribed burns. However, the prescribed burns the authors studied were restricted to the understory and did not include any trees: *"The fraction of fuel consumed in prescribed fires was applied only to the surface fuel fraction (including herbaceous, fine, and coarse fuels of the total fuel loading model...); no live or standing dead trees are assumed to burn in prescribed fires."* **Therefore, this study is not applicable to the proposed project which intends to burn the remains of hundreds of thousands living trees which will obviously release far more carbon into the atmosphere than the prescribed burns in this study as well as reduce carbon sequestration into the foreseeable future.**

In "Carbon recovery rates following different wildfire risk mitigation treatments,"<sup>61</sup> (Hurteau and North 2010) the authors compare several different methods of fuel reduction with respect to how long it takes for the forest to recoup the carbon loss from those methods. **It finds that the forest is unable to recoup the loss of carbon when the destruction of the overstory canopy is the method used because of the large amount of carbon stored in large trees: "Overstory tree thinning treatments resulted in a large carbon deficit and removed many of the largest trees that accumulate the most carbon annually, thereby increasing carbon stock recovery time."** In fact, this is precisely the method that will be used by the proposed project. **Therefore, this study makes the point that this project will permanently reduce the ability to sequester carbon by destroying large trees that will not be replaced. In other words, this study contradicts rather than supports the assumptions of the DEIS regarding carbon storage.**

In "High-severity wildfire effects on carbon stocks and emissions in fuels treated and untreated forests,"<sup>62</sup> (North and Hurteau 2011) the authors compare carbon loss from wildfires in a thinned forest (both loss from treatment and loss from subsequent wildfires) with carbon loss from wildfires in the same locations without thinning. They conclude that

<sup>60</sup> Christine Wiedinmyer and Matthew Hurteau, "Prescribed Fire as a Means of Reducing Carbon Emissions in the Western United States," *Environmental Science Technology*, 2010, 44, 1926-1932

<sup>61</sup> Matthew Hurteau and Malcolm North, "Carbon recovery rates following different wildfire risk mitigation conditions," *Forest Ecology and Management*, 260 (2010) 930-937

<sup>62</sup> Malcolm North and Matthew Hurteau, "High severity wildfire effects on carbon stocks and emissions in fuels treated and untreated forests," *Fire Ecology and Management*, 261 (2011) 1115-1120

such thinning results in more total carbon loss than wildfires without such thinning in the short run. However, because more trees remain after wildfire in a treated forest, the ability of the forest to sequester carbon in the long term can recoup much of the loss of the treatment. The forests they are considering have average densities of 1,536 stems per hectare and thinning is limited to stems of less than 18 inches in diameter. This study is therefore not relevant to the proposed project because the forests in the proposed project are significantly less dense and are being completely destroyed by UCB and Oakland and more drastically thinned by EBRPD compared to the study. In other words, **a much greater percentage of total carbon storage will be lost by the proposed projects in the short run because a higher percentage of total trees will be destroyed, including all large trees which store more carbon than smaller trees. In addition much more capability to sequester carbon will be lost in the long run because few large trees will remain.**

**All of these studies have in common that they have measured all sources of carbon in the forest: carbon in the soil and roots, in the branches and leaves, in the understory, in the duff and leaf litter. In contrast, the DEIS quantifies only the amount of carbon stored in the trunks of the trees. All other sources of carbon are ignored. Furthermore, the DEIS does not quantify the loss of the ability of the forest to sequester carbon in the future.**

The DEIS also misquotes North and Hurteau (2011) as follows: *"A key finding of this study was that the subsequent loss of trees in the untreated areas after the fire was out generated a greater loss of carbon to the atmosphere than the initial thinning practices and wildfire damage in the treated areas."* (DEIS 5.6-11)

In fact, this study says exactly the opposite: *"We found that treatments did reduce wildfire emission by 57% but when carbon removed from the site during treatment (50.2Mg C ha<sup>-1</sup>) is added to wildfire emissions, the total carbon loss is greater in fuels treated (80 Mg C ha<sup>-1</sup>) than untreated (67.8 Mg C ha<sup>-1</sup>) forest."*

Furthermore, North and Hurteau do not support the DEIS statement, *"Thus, the proposed and connected actions would be self-mitigating if a wild fire occurs."* (DEIS 5.6-11) The DEIS reports that North and Hurteau found that treated areas will have more carbon remaining in living trees after a fire than the untreated areas after a fire. The fires killed 97% of the trees in the untreated areas and only 53% in the treated areas. This recovery of carbon sequestration was possible in the study because the forest was thinned of small trees, rather than completely destroyed as it will be in the projects of UCB and Oakland. Large trees will not be available post-treatment to recover the ability to sequester carbon as they were in the study. There will be no mitigation in the East Bay projects because all tall trees will be destroyed.

The DEIS also attempts to confuse the reader by introducing the albedo effect. The DEIS claims that forests warm the atmosphere more than the lower vegetation which will replace the forests because forest canopies absorb more sunlight than the lower vegetation. The implication of this observation is that albedo effect will counteract the warming of the ground when the shade of the canopy is destroyed: *"Forests and woodlands tend to absorb sunlight more and reflect sunlight less than open space and might be expected to have higher air temperatures than open ground."* (DEIS 4.7-15)

The DEIS claim, if followed to its logical conclusion, implies that, because of the albedo effect, all forests should be destroyed to counter global climate change, a truly bizarre position for the applying agencies to take. Surely they don't really believe it.

This is a smokescreen that has been used unsuccessfully by other economic interests that wish to destroy the forest, such as the timber industry. Here is how scientists responded to this claim:

*"Because forests are generally attributed a low albedo (as the majority of the ultraviolet and visible spectrum is absorbed through photosynthesis), it has been erroneously assumed that removing forests would lead to cooling on the grounds of increased albedo. Through the evapotranspiration of water, trees discharge excess heat from the forest canopy. This water vapour rises resulting in cloud cover which also has a high albedo, thereby further increasing the net global cooling effect attributable to forests."*<sup>63</sup>

Whatever heat may be generated by absorbed sunlight at the outer edge of the canopy is used by photosynthesis and evapotranspiration. The heat does not reach ground level, where the shade of the canopy cools the forest floor. This is acknowledged by the DEIS: *"...the upper canopy tends to capture a substantial portion of the sunlight, limiting the amount of energy reaching the lower branches and ground vegetation. This limits the amount of photosynthesis in the lower levels as well as reduces the air and soil temperatures under the canopy relative to pen ground."* (DEIS 4.6-15)

**The shaded forest floor suppresses the growth of herbaceous understory which ignites easily, spreads fire rapidly, and can provide ladder fuel to the tree canopy. The shaded forest floor is therefore a means of reducing fire hazard and the elimination of the shade by the proposed projects is one of many reasons why fire hazards will be increased by these projects.**

#### **Reducing fuel loads causes carbon loss without reducing fire hazard**

As we have said, the DEIS uses the potential for wildfire as a justification for the proposed project, based on speculation that a wildfire would cause loss of stored carbon. We have also said that this is not a valid legal argument because environmental impact must be evaluated by comparing the proposed project to existing conditions, not to some theoretical condition, such as a forest destroyed by wildfire.

**Furthermore, a recently published study corroborates that thinning the forest does not significantly reduce fire risk, nor does it increase carbon storage in the forest<sup>64</sup>**

*"It has been suggested that thinning trees and other fuel-reduction practices aimed at reducing the probability of high-severity forest fire are consistent with efforts to keep carbon (C) sequestered in terrestrial pools, and that such practices should therefore be rewarded rather than penalized in C-accounting schemes. By evaluating how fuel treatments, wildfire, and their interactions affect forest C stocks across a wide range of spatial and temporal scales, we conclude that this is extremely unlikely. Our review reveals high C losses associated with fuel treatment, only modest differences in the combustive losses associated with high-severity fire and the low-severity fire that fuel treatment is meant to encourage, and a low likelihood that treated forests will be exposed to fire. Although fuel-reduction treatments may be necessary to restore historical functionality to fire-suppressed ecosystems, we found little credible evidence that such efforts have the added benefit of increasing terrestrial C stocks."*

**Thinning the forest will not reduce fire hazard. Nor will it prevent loss of stored carbon.**

<sup>63</sup> <http://en.wikipedia.org/wiki/Albedo#Trees>

<sup>64</sup> John L. Campbell, Mark E. Harmon, Stephen R. Mitchell, "Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? *Frontiers in Ecology and Environment*, 2011, 10,1890/110057.

**The DEIS does not acknowledge California law (AB32) requiring reduction in greenhouse gas emissions**

The DEIS says that *"FEMA has determined that a proposed action must meet the criteria listed below to be eligible for funding under [Hazard Mitigation Assistance grant programs]"* (DEIS 2-2). One of the criteria that are listed is: *"Meet the requirements of applicable local, tribal, state, and federal laws; implementing regulations; and executive orders."* (DEIS 2-3)

**The proposed project violates California law:**

**California Executive Order S-3-05: The Executive Order established the following goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.**

The proposed project will release thousands of tons of carbon stored in the non-native forest, releasing thousands of tons of carbon dioxide into the atmosphere as the wood decays on the forest floor or is burned in pile burns by EBRPD. The project will also permanently reduce the capability of the non-native forest to sequester carbon for at least 100 years into the future. This loss of carbon sequestration capability is not compensated for by any planting by the proposed project. The project offers no mitigation for these increases in greenhouse gas emissions. Therefore, the project violates California law. If the final EIS is unable to identify sufficient mitigation for these enormous increases in greenhouse gas emissions consistent with the requirements of California law, the public will surely challenge the legality of the proposed projects.

**Part III: The proposed projects will damage the environment by dousing public lands with thousands of gallons of toxic herbicides**

The information and analysis provided by the DEIS regarding herbicides required to implement the proposed project is inadequate:

- **Inadequate information** is provided regarding herbicides required for the proposed project
- **Inaccurate information** is provided regarding herbicides required for the proposed project
- Information regarding herbicides required for the proposed project is **not credible**
- **Analysis** of the consequences of herbicides required for the proposed project is **inadequate**

**Inadequate information regarding herbicides required for the proposed project is provided by the DEIS**

The DEIS informs us that herbicides will be used to prevent eucalyptus and acacia that will be destroyed from resprouting. We are told that between 1 – 2 ounces of herbicides will be applied to the stump shortly after the tree is cut down. It also claims that only 5% of the trees will require retreatment to accomplish the goal of killing the roots of the trees. The DEIS provides no information about the number of trees that will be destroyed of each species, which means we have no way of knowing how much herbicide will be required to implement the project.

The DEIS informs us that herbicides will also be foliar sprayed to eradicate non-native shrubs such as broom in the project areas. The DEIS provides no information about the quantity of herbicides that will be required to accomplish this task.

The DEIS describes four herbicides that will be used for this project and a brief description of their properties: Garlon 3A, Garlon 4 Ultra, Stalker, and Roundup. (DEIS, Appendix L) However, the DEIS provides no consistent information regarding which products will be used for which of the two purposes: cut stump treatment and foliar spraying.

The DEIS reports that "UCB provided herbicide-use records for the past 10 years (Klatt 2011b)." (DEIS 4.5-18) However, this document is listed as a "personal communication" in the DEIS References. Therefore, it is not available to the public. Given that UCB has destroyed approximately 18,000 trees in the past 10 years,<sup>65</sup> these records of herbicide use during that period of time are needed to evaluate requirements for future herbicide use for the proposed project. If, for example, 1,000 gallons of Garlon were needed to treat and retreat 18,000 trees destroyed in the past 10 years, we can anticipate that 3,000 gallons of Garlon will be needed to treat and retreat the 54,000 trees that UCB intends to destroy in the proposed project. That would amount to 7 ounces per trees, far more than the DEIS estimate of 1 – 2 ounces per tree.

The quantity of pesticide to be used is crucial. The EPA mandated Specimen Labels for Garlon 3A and Garlon 4 specify maximum use rates for these products when used on stumps of trees:

- The Specimen Label for Garlon 3A says, "Individual plant treatments such as basal bark and cut surface applications may be used . . . at a maximum use rate of 2.67 gallons of Garlon 3A (8 lb ae of triclopyr) per acre."<sup>66</sup>
- The Specimen Label for Garlon 4 says, "Individual plant treatments such as basal bark and cut surface applications may be used on any use listed on this label at a maximum use rate of 8 lb ae of triclopyr per acre," where acid equivalent (ae) is given by "Acid equivalent: triclopyr – 44.3% - 4lb/gal."<sup>67</sup>

Thus the maximum use rate for Garlon 3A is 2.67 gallons per acre, and the maximum use rate for Garlon 4 is 2 gallons per acre.

Compare the DEIS estimate of 1 – 2 ounces of pesticide per stump with the mandated maximum use rates. The tree density on UCB properties in the project areas can be estimated: 54,000 trees / 284.3 acres = 190 trees/acre. If 2 ounces of Garlon are needed per tree, 190 trees per acre will require 380 oz or 2.97 gallons/acre of pesticide. **This rate exceeds the maximum use rates for both Garlon 3A and Garlon 4.**

**The following information is needed in the final EIS to evaluate the environmental impact of herbicides used by the proposed project:**

- Please provide the number of eucalypts and acacia that will require cut-stump treatment and the type of herbicide that will be used for that purpose.
- Please provide the volume and type of herbicide that will be foliar sprayed on non-native shrubs.
- Please provide UCB's reports of pesticide use for the 10-year period, 2002-2012.

**Inaccurate information is provided regarding herbicides required for the proposed project**

The DEIS claims that, "The herbicides used [by UCB] included glyphosate applied to a cut stump spray, imazapyr applied as a basal bark spray, triclopyr applied using a foliar low pressure..." (DEIS 4.5-18) This statement is contradicted by

<sup>65</sup> Tom Klatt, "Fire Mitigation Program, Annual Report 2005," University of California, Berkeley

<sup>66</sup> <http://www.cdms.net/LDat/ld0AU007.pdf>

<sup>67</sup> <http://www.cdms.net/ldat/ld0B0013.pdf>

UCB's "Hill Area Fire Fuel Management Program,"<sup>68</sup> which states that only Garlon with the active ingredient triclopyr is used for UCB's fuel management programs. This is a significant contradiction between UCB's written plans and the DEIS because triclopyr is significantly more toxic, more persistent in the environment, and more mobile in the soil than glyphosate, which is known to be ineffective for stump treatment to prevent resprouting of eucalyptus. It therefore misrepresents the hazards of the proposed projects and must be corrected in the final EIS.

The DEIS informs us of the pesticide use policies of the City of Oakland. The DEIS is not responsible for inaccurate statements made in those policies, but I will make this public record of those inaccuracies, which should be noted in the final DEIS:

- "When glyphosate and triclopyr are applied in this manner [direct application to cut stump], the herbicide is absorbed within the plant or tree's system and does not migrate into the surrounding soil." (DEIS 4.5-18) This statement is not true. Triclopyr is taken up by the roots and distributed throughout the root system of the plant or tree. Studies have shown that herbicides migrate from the root system of the target tree to the root system of adjacent plants and trees with which its roots are intermingled.<sup>69</sup>
- "Both glyphosate and triclopyr have received the lowest ranking [by the EPA] for toxicity or a Category 4." (DEIS 4.5-19) This statement is not true. The EPA ratings are:
  - Glyphosate: Oral and dermal acute toxicity: Category III (slightly toxic)<sup>70</sup>
  - Triclopyr (BEE & TEA): Oral and dermal acute toxicity: Category III (slightly toxic); (TEA) Primary eye irritation: Category I (corrosive); (BEE) Primary eye irritation: Category III (minimally irritating)<sup>71</sup>
  - Further, the ratings for imazapyr include: Acute dermal toxicity: Category III (slightly toxic); Acute inhalation toxicity: Category II (moderately toxic); Acute eye irritation: Category I (corrosive)<sup>72</sup>
- For the record, we will also note that Oakland's policy regarding herbicide use is contradictory. On the one hand it claims that "herbicide use is limited to the use of glyphosate and triclopyr" and on the other hand it announces that it is using imazapyr in a "demonstration project." In other words, Oakland has a policy that theoretically limits herbicide use to specific products, but it also gives itself permission to use other products when it wishes to, calling them "demonstration projects:" "The herbicide mixture would likely consist of a combination of Garlon 4 (triclopyr) and Stalker (imazapyr)..." (DEIS 4.5-19) The law does not require that the combination of multiple pesticides be tested for toxicity. Therefore, there is no information regarding the toxicity of such combinations. The risks of these combinations are unknown.

The DEIS reports on pesticide use by EBRPD based on their annual reports for 2007 and 2008. EBRPD's pesticide use report for 2009 has been available since March 2011 and for 2010 since September 2011. In other words, these reports were available while the DEIS was being prepared and are a more accurate reflection of EBRPD's current pesticide use because they reflect the increased pesticide use required to implement EBRPD's "Wildfire Hazard Reduction and Resource Management Plan" which was approved in 2009. These are the significant differences between more current reports and the outdated reports cited by the DEIS:

<sup>68</sup> University of California, Berkeley, "2020 Hill Area Fire Fuel Management Program," 2003

<sup>69</sup> Stott W. Howard, *Chemical Control of Woody Plants, Stumps, and Trees*, Washington State University, 1993

<sup>70</sup> [http://www.epa.gov/oppsrrd1/REDS/old\\_reds/glyphosate.pdf](http://www.epa.gov/oppsrrd1/REDS/old_reds/glyphosate.pdf)

<sup>71</sup> <http://www.epa.gov/oppsrrd1/REDS/2710red.pdf>

<sup>72</sup> [http://www.epa.gov/oppsrrd1/REDS/imazapyr\\_red.pdf](http://www.epa.gov/oppsrrd1/REDS/imazapyr_red.pdf)



- **EBRPD reported a 300% increase in pesticide use for “Priority Resource Projects” in 2009 (see Table 4).** “Resource Projects” is the euphemism used by EBRPD to describe its efforts to eradicate non-native species such as pampas grass, thistle, broom, and eucalyptus.
- Unlike earlier reports described by the DEIS, reports for 2009 and 2010 inform us of the volume of imazapyr and clopyralid used on an “experimental” basis: 203 gallons of imazapyr were used in 2009 and 121 gallons in 2010; 16 gallons of clopyralid were used in 2009. (see Table 3) Neither of these products has been approved for use by EBRPD. They have been used on an “experimental” basis at least since 2007. Just as the City of Oakland, EBRPD has an “approved” list of products, but also gives itself permission to use other products for years at a time by calling that use “experimental.”

### **Information regarding herbicides required for the proposed project is not credible**

The DEIS claims that only 5% of eucalypts and acacia will require retreatment to kill the roots of the trees and prevent resprouting in the future: “...past experience by EBRPD indicates that only about 5% of cut stumps survive to need re-treatment (Rasmussen 2013).” (DEIS 5.4-5) The reference cited for this statement is a personal communication from Mr. Rasmussen, who is identified as the Grants Manager of EBRPD. The DEIS provides us with no evidence to support this statement. For example, how many trees were observed, of what species, over what period of time?

The claim that only 5% of the trees will require herbicide retreatment is also not credible because it is contradicted by statements made previously by UCB and by other statements in the DEIS regarding retreatment.

- The City of Oakland’s “Wildfire Prevention Program, 2008-2010” says, “All cut tree stumps shall receive semi-annual follow-up treatment of herbicides on any emerging stump sprouts to ensure the permanent elimination of eucalyptus from the project area.” (DEIS 4.5-19)
- The DEIS also says, “In addition, the city [of Oakland] provided a response to questions as a result of the preparation of this EIS.” That response was, “All cut eucalyptus stumps shall receive annual follow-up treatment of herbicides (Garlon, Stalker) on any emerging stump sprouts...” (DEIS 4.5-20)
- When UCB applied for FEMA grants for its proposed project in 2005, it submitted a letter in support of its application regarding its planned herbicide use to prevent resprouting of the trees it proposed to destroy. In that letter, the Associate Director of UCB’s Physical Plant said semi-annual retreatment would be required for a period of 10 years to prevent resprouting: “I would recommend that **two chemical treatments be made to both sites each year for 10 years, with the objective of treating sprouts with herbicide.**” (see Attachment B)

### **Analysis of the consequences of herbicides required for the proposed project is inadequate**

#### **Red-legged frog**

For the record, I would like to observe that protections for endangered Red-legged frog described in the DEIS are meaningless, although they probably don’t violate the law. I offer this empty gesture to make a record of the fact that legal protections for endangered animals are inadequate and often trumped by the perceived needs of native plants.

The active ingredients of the herbicides that will be used by the proposed projects (glyphosate, imazapyr, and triclopyr) are banned by a Federal District Court from use around certain habitats of the California red-legged frog. (DEIS 4.11-11) However, that same court order provided many exemptions to that ban, including “Individual tree removal using cut stump application.” So, clearly most of the proposed project will be exempt from this ban, as most herbicide use will be for the purpose of destroying trees and preventing them from resprouting.

The DEIS also informs us, "*CRLF [California red legged frog] habitat may occur throughout the project area.*" (DEIS 5.1-8) Therefore, the DEIS proposes "mitigation," including using Garlon 3A instead of Garlon 4 Ultra within 60 feet of water. Unfortunately, the active ingredient in both of these products is triclopyr, one of the banned herbicides in CRLF habitat. Therefore, we should not assume that CRLF will not be harmed by this project.

### Use of flammable herbicide during fire season

The DEIS tells us that Garlon 3A will be used within 60 feet of water sources because it is slightly less toxic to aquatic life than Garlon 4 Ultra which is rated by the EPA as "highly toxic to aquatic organisms." The disadvantage of using Garlon 3A as a substitute for Garlon 4 Ultra is that the OSHA Hazard Communication Standard rates Garlon 3A as flammable. It is flammable because ethanol is one of its inert ingredients. Ethanol is "often used as motor fuel, mainly as a biofuel additive for gasoline," according to Wikipedia.

Garlon 3A will be used to treat the stumps of many of the trees that will be destroyed. UCB's policies governing its "fuels management" projects inform us:

- *"...herbicide would be hand-applied to eucalyptus species during the dry season (June 1 through October 31)."*<sup>73</sup>
- *"The herbicide treatment was provided by UC staff, which was pressed to treat 2 cut stumps per minute within 5 minutes after felling. Placing applicators in close proximity to an operating feller-buncher is somewhat hazardous and requires close coordination between applicator and equipment operator, typically through hand-signaling."*<sup>74</sup>

In other words, an herbicide rated as flammable will be used during the dry, fire season in close proximity to heavy, motorized equipment operating simultaneously. Yet, the DEIS tells us nothing about the potential risk of igniting a wildfire during a project that claims to reduce fire hazards.

### Collateral damage to native trees and vegetation

The DEIS reports that native oak and bay trees exist under the canopy of the non-native trees and that those trees will flourish once the non-native trees are destroyed: *"The goal of this project is to reduce the amount of fuel on the site by allowing the eucalyptus, and pine-dominated non-native forest to convert to a native forest of California bay laurel, oak, and native grass and shrub species present beneath the non-native trees."* (DEIS ES-12) In other words, existing native species are in close proximity to the trees that will be destroyed, even under them.

The DEIS also tells us, *"Trees not targeted for application in the project areas may also be impacted by Stalker [imazapyr] if the herbicide reaches the surface soil and is taken up by the roots."* (DEIS App L-2) The ability for imazapyr to migrate from the roots of the target tree to non-target trees is well known. Its product label clearly states that it should not be used under the canopy of trees that the user is not attempting to kill. Furthermore, Garlon is also known to migrate from the roots of the target plant to the roots of other plants in proximity.<sup>75</sup>

The risk of collateral damage to non-target plants is acknowledged by the DEIS: *"...terrestrial plants may be adversely affected if the product [Stalker] is applied directly...or indirectly as the result of drift or leaching."* (DEIS AP L-13) Imazapyr is both mobile and persistent in the soil: *"According to the U.S. EPA, the active ingredient of Stalker, imazapyr,*

<sup>73</sup> University of California, Berkeley, "2020 Hill Area Fire Fuel Management Program," 2003

<sup>74</sup> Tom Klatt, "Fire Mitigation Program, Annual Report 2005," University of California, Berkeley

<sup>75</sup> Stott W. Howard, *Chemical Control of Woody Plants, Stumps, and Trees*, Washington State University, 1993

*is persistent in soil and can reach surface water via either runoff or leaching in groundwater that discharges to surface water, since it is very mobile.”* (DEIS APP L-2)

These are the herbicides that are most likely to be used to treat the cut stumps of the trees that are destroyed. Roundup is not effective to kill the roots of eucalyptus. Yet the DEIS tells us nothing about the likelihood of harming or even killing the native trees that the project is attempting to preserve.

### **Killing mycorrhizal fungi in the soil**

Mycorrhizal fungi are microorganisms that exist in the soil that form a symbiotic relationship with many plants and trees, both native and non-native. They provide water and mineral nutrients in exchange for plant carbohydrates. *“Most forest trees and many other plants too, make use of mycorrhizae; some, like oaks and pines, seem particularly reliant on them.”*<sup>76</sup> And eucalypts are also dependent upon mycorrhizae: *“Many trees have mycorrhizae, but pines and eucalypts seem particularly adept.”*<sup>77</sup>

The active ingredient in Garlon 3A and Garlon 4 Ultra—triclopyr—is known to be toxic to microorganisms such as mycorrhizae:

*“Garlon 4, at concentrations of 0.74 ppm in growth medium (agar) over 26–48 days, can inhibit growth in the mycorrhizal fungi Pisolithus tinctorius, and Hebeloma longicaudum.<sup>94</sup> Soil concentrations of triclopyr are typically 4–18 ppm following application of 0.28–10 kg/ha.<sup>93</sup> At realistic application rates, triclopyr could affect some fungal communities, but the data are sparse, and there is significant uncertainty about the potential effects of triclopyr on soil microorganisms. Mycorrhizal fungi are symbionts with plants that provide water and mineral nutrients in exchange for plant carbohydrates. Cenococcum geophilum, the slowest growing fungus, was least sensitive to the effects of triclopyr, exhibiting decreased growth at 742 ppm a.e. A similar study found that triclopyr (formulation not reported) could inhibit growth in five mycorrhizal species: Hebeloma crustuliniforme, Laccaria laccata, Thelophora americana, Thelophora terrestris, and Suillus tomentosus.<sup>94</sup> Fungi were kept in liquid culture for 30 days and the reduction of biomass with increasing triclopyr concentrations was measured. A 90% reduction in biomass was observed for all species at concentrations of 720 ppm; greater than 50% reduction biomass was observed in four of the five species at 36 ppm. The most sensitive species, Thelophora americana, exhibited a 6% decrease in growth rates relative to controls at triclopyr concentrations of 0.072 ppm (this result was statistically significant). In other species, statistically significant decreases in growth were reported between 0.72 ppm and 7.2 ppm.”*<sup>78</sup>

To summarize, native trees are growing under and near the trees that will be destroyed. The predominant native tree, oak, requires mycorrhizal fungi to maintain its health and vigor. There are mycorrhizal fungi now in the soil of the eucalyptus forest. Those fungi are likely to be harmed by the herbicide that will be used to kill the roots of the eucalyptus forest. This sequence of events is likely to be detrimental to the health of the oaks, which are already under siege by the pathogen that is causing Sudden Oak Death. Yet, the sponsors of these projects tell us that oak-bay woodland will be the result of these projects. That seems very unlikely for many reasons and the loss of mycorrhizal fungi in the soil is one of them.

<sup>76</sup> Colin Tudge, *The Tree*, Three Rivers Press, 2005

<sup>77</sup> *Ibid.*

<sup>78</sup> Marin Municipal Water District, “Herbicide Risk Assessment,” 2010

### **Damage to pollinators will hinder conversion to native landscape**

The proposed project will have a devastating impact on honeybees and other pollinators. The Marin Municipal Water District Risk Assessment of herbicides reports, "*Triclopyr ranges from not acutely toxic to slightly acutely toxic to birds and honeybees.*"<sup>79</sup>

Furthermore, honeybees, unlike native bees, do not hibernate in the winter. Therefore, the nectar that eucalyptus provides in the winter months is crucial to the survival of honeybees because it is a period during which no nectar is available from native vegetation. If honeybees turn to the early-blooming native buckeyes to compensate for the loss of nectar, they will be killed by that nectar which is toxic to them.<sup>80</sup>

Native bees will be unable to compensate for the loss of honeybees, because most of them nest in the ground. The native bees cannot penetrate the deep mulch that will be spread on the ground of the project areas.<sup>81</sup>

Hummingbirds are equally dependent upon the nectar provided by eucalypts during winter months. Ornithologists say there were no hummingbirds in the Bay Area during winter months prior to settlement and the introduction of plants that provide winter nectar.

The assumption that the native landscape will magically return to the devastated project area without being planted is not credible. The loss of pollinators is one of many reasons why this is unlikely to occur.

### **Conversion to native vegetation will be hindered by pesticide use**

We have said before, and will repeat in the context of pesticide use, that the landscape resulting from the proposed project is likely to be dominated by non-native annual grasses, which is the most easily ignited herbaceous vegetation. Herbicide use will exacerbate that conversion:

*"Depending on the application rate, triclopyr may favor the development of grasses over broadleaf weeds...At a rate of 1.12 kg/ha (1 lb/acre) total grasses increased by a factor of approximately 2 over control plots and total broadleaf cover decreased to approximately 60% of that noted in control plots."*  
(DEIS APP L-12)

**Germination** of the native landscape which sponsors of the proposed project predict will magically emerge without being planted, **will also be hindered by the use of herbicides** depending upon the concentration of the products that are applied:

Garlon: *"The emergence of seedlings naturally occurring in the soil taken from an 8-year old mixed wood clearcut was monitored...substantial inhibition of Rubus species, other dicots, and monocots was observed...No seed germination was apparent..."* (DEIS APP L-13)

Stalker: *"Terrestrial plant toxicity studies with monocots and dicots indicate that seedling emergence and vegetative vigor are severely impacted by exposure to imazapyr acid and to the IPA salt of imazapyr."* (DEIS APP L-13)

<sup>79</sup> Ibid.

<sup>80</sup> [http://en.wikipedia.org/wiki/Bees\\_and\\_toxic\\_chemicals](http://en.wikipedia.org/wiki/Bees_and_toxic_chemicals)

<sup>81</sup> [http://nature.berkeley.edu/urbanbeegardens/general\\_mulchmadness.html](http://nature.berkeley.edu/urbanbeegardens/general_mulchmadness.html)

**To conclude this section of my public comment, I will quantify estimated herbicide volume required for the proposed project, using what little information is provided by the DEIS. The DEIS provides estimated tree removals for only the properties of UC Berkeley: Strawberry Canyon, Claremont Canyon, and Frowning Ridge. We are told that approximately 22,000 trees will be removed from Strawberry and Claremont Canyons and 32,000 from Frowning Ridge, for a total of 54,000 trees on 284 acres. We are not told how many of these trees are eucalypts and acacia, which will require herbicides to prevent resprouts. We are also told that 5% of the trees that require herbicide treatment will require retreatment, although this is not credible, given previous statements to the contrary. So, for the sake of argument, let's say that 5% of the trees are Monterey pines which will not require pesticide treatment, which will compensate for the claimed retreatment rate. The DEIS tells us that 1 – 2 ounces of pesticide will be required for each cut stump treatment. In that case, the project areas on UC Berkeley properties will require between 422 and 844 gallons of herbicide. If 844 gallons of pesticides are sprayed on the stumps of the trees that are destroyed, the maximum allowed per acre would be exceeded, as described earlier.**

This estimate does not include any foliar spraying of non-native shrubs for which we are given no information. Nor does it include any of the herbicides that will be used by the City of Oakland and the East Bay Regional Park District.

Given what we know about the toxicity of pesticides and the collateral damage that is predicted to the vegetation that remains and the wildlife that occupy these spaces, **we are adamantly opposed to this project as described.**

Given that we do not anticipate any reduction in fire hazards, and that significant damage can be predicted from the use of pesticides, we repeat that **the "no project" alternative is the only viable alternative.** There is no potential benefit from this project. There is only environmental damage and increased fire risk.

#### **Part IV: Other Environmental Issues and Unsupported assumptions about superiority of native plants**

##### **Other environmental issues**

##### **Erosion**

The proposed projects of UC Berkeley are a continuation of its effort to eradicate all non-native trees from its property in the hills. In the past ten years, UC Berkeley has destroyed at least 18,000 trees on its property in the hills.<sup>82</sup> Observing those projects enables us to compare the reality of the consequences of those projects with the claims in the DEIS about UCB's ability to avoid unintended consequences such as erosion.

Here is a photo of the erosion resulting from the removal of trees by UCB about 10 years ago. This erosion is located on the west side of Grizzly Peak Blvd, south of Claremont Ave.

<sup>82</sup> Tom Klatt, "Fire Mitigation Program, Annual Report 2005," University of California, Berkeley





This erosion has been getting steadily worse for at least 5 years. Nothing more sophisticated than plastic and sand bags has been used to stabilize this hillside during that period of time.

The DEIS claims that UCB can prevent erosion from occurring when they remove trees from steep hillsides. These claims are not credible, based on our experience with identical projects which are complete. The mitigation proposed by the DEIS for erosion is inadequate. For example hydroseeding of native annual plants will not be capable to providing the same stability as deeply rooted, large trees. The final DEIS should either acknowledge the consequences of removing trees from steep hillsides or remove similar sites from the proposed project.

### **Windthrow**

Unlike UCB and the City of Oakland, the East Bay Regional Park District plans to remove all trees in some locations and drastically thin trees in many locations. Where EBRPD intends to "thin" they will destroy approximately 90% of existing trees.

In EBRPD's response to public comments to its EIR for its "Wildfire Hazard Reduction and Resource Management Plan," EBRPD tells us that the density of existing eucalyptus forest on its properties varies from 400 to 900 trees per acre (page 392). This suggests that the average density of eucalyptus trees on EBRPD properties prior to the implementation of its plans was 650 trees per acre. EBRPD's proposed project will remove all trees from some areas and thin in others to create distances between eucalyptus trees of 25 and 35 feet. Such spacing would leave a maximum of 60 trees per acre, a reduction of over 90% of existing trees.

Such drastic thinning will make the few trees that remain vulnerable to windthrow. Windthrow is the complete failure of a tree which falls to the ground from its roots, particularly during periods of high wind.

Trees develop their defenses against the wind in a specific location in response to the wind conditions in that location. Their protection from the wind provided by neighboring trees is one of the factors that determine the wind hardness of each tree. The trees angle of repose, its root system, and the thickness of its bark are determined in part by the amount of wind it endures as it grows. Therefore, when it loses the protection from the wind provided by its neighbors, it is not adapted to increased wind. Although it can recover from that vulnerability after an indeterminate number of years, it is vulnerable to windthrow for a long period of time.<sup>83</sup>

**The potential for catastrophic failure of the few trees that remain after EBRPD has destroyed 90% of the eucalyptus in its project areas has not been acknowledged or evaluated by the DEIS.**

**The final DEIS must acknowledge this risk factor and propose mitigation**, such as eliminating locations that are subjected to a great deal of wind, e.g., west-facing, steep slopes. The prevailing wind in the East Bay is from the west and steep slopes accelerate the wind. Another method of mitigating potential windthrow is to sequence tree removals from the leeward side, with intervals of about 5 years, which enables the trees that remain to adapt to new wind conditions.<sup>84</sup> For the record, I will add that I oppose this drastic "thinning" on EBRPD's properties which is both unnecessary and detrimental to the environment. However, since EBRPD has satisfied CEQA requirements for its project, it is probably inevitable. Therefore, I take this opportunity to suggest that they implement their plans in the least harmful manner.

**Nativist assumptions used to justify the proposed project are unsupported by scientific evidence**

The DEIS attempts to justify the proposed projects by making negative judgments about non-native species and positive judgments about native species. The DEIS provides no scientific evidence to support these assumptions. There is considerable scientific evidence to refute these assumptions. **Unless the final EIS can provide scientific evidence to support these assumptions, they should be removed from the document.**

**Assumption that all non-native species are "invasive"**

The DEIS says repeatedly that the non-native plants and trees that will be eradicated by the proposed project are invasive. We will challenge that assumption only for the non-native trees which are the primary target of these projects: eucalyptus, Monterey pine, and acacia.

In fact, there is no evidence that any of these trees are "invasive." Although, the California Invasive Plant Council has classified eucalyptus as "moderately invasive," there is no scientific evidence to support this claim. According to the US Forest Service database of plants and trees, "It [Blue gum eucalyptus] does not spread far and rarely invades wildlands."<sup>85</sup>

<sup>83</sup> F. W. Telewski, "Wind induced physiological and development responses in trees," in *Wind and Trees*, edited by MP Coutts and J Grace, Cambridge University Press, 1995

<sup>84</sup> "Presidio of San Francisco, Wind Study, First Phase," Joe R. McBride, circa 2002. Unpublished. Available from Professor Joe R. McBride, UC Berkeley or the SF Presidio.

<sup>85</sup> <http://www.fs.fed.us/database/feis/plants/tree/eucglo/all.html>

William Russell (USGS) and Joe McBride (UC Berkeley)<sup>86</sup> used aerial photos of Bay Area parks taken over a 60 year period from 1939 to 1997, to study changes in vegetation types. (Note that this period of time ends before managers of public lands began to eradicate non-native trees around 2002.) They studied photos of 3 parks in the East Bay (Chabot, Tilden, Redwood), 2 parks in the North Bay (Pt Reyes, Bolinas Ridge), and one on the Peninsula (Skyline).

These photos revealed that grasslands are succeeding to shrubland, dominated by native coyote brush and manzanita. (They also noted that this conversion increases fire hazards.) **Eucalyptus and Monterey pine forests actually decreased during the period of study.** In those cases in which forests increased in size, they were native forests of oaks or Douglas fir. In other words, **they found no evidence that non-native trees are invading native trees or shrubs in the open spaces of the San Francisco Bay Area.**

The *Encyclopedia of Biological Invasions* was edited by Daniel Simberloff, who is a prolific proponent of invasion biology. According to the *Encyclopedia of Biological Invasions*, eucalypts are “*some of the most important solid timber and paper pulp forestry trees in the world.*” There are about 40 million acres of eucalypts planted in tropical, sub-tropical, and temperate countries. The predominant species of eucalyptus in the Bay Area, Blue Gum (*E. globulus*), is grown in 13 countries in addition to the US and Australia. About 70 species of eucalypts are naturalized outside their native ranges. “*However, given the extent of cultivation, eucalypts are markedly less invasive than many other widely cultivated trees and shrubs...they have been orders of magnitude less successful as invaders than pines and several other widely planted trees...Where eucalypts have invaded, they have very seldom spread considerable distances from planting sites, and their regeneration is frequently sporadic*”<sup>87</sup>

The *Encyclopedia* says that **eucalyptus seedlings die quickly** if they don't establish roots in moist soil quickly. If the soil is too moist they are susceptible to destruction by fungus. If there is too much leaf litter or there is an understory, they are unlikely to find the quick access to the soil they need to survive. There is a narrow range of conditions needed to successfully establish eucalyptus seedlings.

The seeds of eucalypts have no natural means of dispersal, such as fleshy tissue which can function as wings on the wind. Tests have shown that the seeds “*are dispersed over quite short distances.*”<sup>88</sup> “*Seed dispersal is mainly by wind or gravity and is virtually limited to twice the tree height.*”<sup>89</sup>

The California Invasive Plant Council classifies *Acacia dealbata* (Silver wattle) as “moderately invasive” and the impact of *Acacia melanoxylon* (Black acacia) as “limited” and adds, “impacts are low in most areas.” In fact, acacia does not spread unless it is cut down when it then resprouts vigorously from the roots unless it is poisoned repeatedly or the roots are dug out of the ground with heavy equipment. The misguided attempt to eradicate acacia is more likely to result in more acacia rather than less.

Neither Monterey cypress nor Monterey pine are invasive. Even the California Invasive Plant Council agrees with that assessment. And both are California natives with fossil evidence that they existed on the San Francisco peninsula in the

<sup>86</sup> William H. Russell, Joe R. McBride, “Landscape scale vegetation-type conversion and fire hazard in the San Francisco bay area open spaces,” *Landscape and Urban Planning*, Volume 64, Issue 4, August 15, 2003, pages 201-208.

<sup>87</sup> Marcel Rejmanek and David Richardson, “Eucalypts,” in *Encyclopedia of Biological Invasions*, eds, Daniel Simberloff and Marcel Rejmanek, University of California Berkeley Press, 2011

<sup>88</sup> Ibid.

<sup>89</sup> Craig Hardner, et. al., “The Relationship between Cross Success and Spatial Proximity of Eucalypts *Globulus* ssp. *Globulus* Parents,” in *Evolution*, 212, 1998, 614-618.



distant past. The eradication of these California natives is an example of the extremist agenda of native plant advocates who insist on recreating a landscape that is specific to both a location and a period of time.

### **Assumption that there are no insects in non-native vegetation**

The DEIS claims that non-native plants produce more leaf litter than native plants:

*"In part, non-native species produce greater fuel loads than the native vegetation they displace because of the absence of organisms (insects, soil microbes, and other plant species) from their native landscape that evolved with them and moderated their proliferation."* (DEIS 4.3-7)

This is the conventional wisdom amongst native plant advocates. However, they cannot provide scientific evidence to support their claim that insects do not eat non-native plants. There is considerable evidence to the contrary.

The scientist who is most often quoted to support beliefs of native plant advocates is Doug Tallamy who wrote an influential book, *Bringing Nature Home: How Native Plants Sustain Wildlife in our Gardens*.<sup>90</sup> Professor Tallamy is an entomologist at the University of Delaware.

Professor Tallamy's hypothesis in that book was that native insects require native plants because they have evolved together "over thousands of generations." Because insects are an essential ingredient in the food web, he speculates that the absence of native plants would ultimately result in "ecological collapse" as other animals in the food web are starved by the loss of insects.

Professor Tallamy freely admits in that book that his theory was based on his own anecdotal observations in his garden, not on scientific evidence: *"How do we know the actual extent to which our native insect generalists are eating alien plants? We don't until we go into the field and see exactly what is eating what. Unfortunately, this important but simple task has been all but ignored so far."*

This research has now been done to Professor Tallamy's satisfaction by a Master's Degree student under his direction. **The report of that study does not substantiate Professor Tallamy's belief that insects eat only native plants. In his own words, Professor Tallamy now tells us:**

*"Erin [Reed] compared the amount of damage sucking and chewing insects made on the ornamental plants at six suburban properties landscaped primarily with species native to the area and six properties landscaped traditionally. After two years of measurements Erin found that only a tiny percentage of leaves were damaged on either set of properties at the end of the season....Erin's most important result, however, was that **there was no statistical difference in the amount of damage on either landscape type.**"<sup>91</sup>*

A local study also found that non-native plants and trees—including eucalyptus—support as many insects as native plants and trees. Professor Dov Sax (Brown University) compared insects living in the leaf litter of the non-native eucalyptus forest with those living in the native oak-bay woodland in Berkeley, California.<sup>92</sup> He found **significantly more species of insects in the leaf litter of the eucalyptus forest in the spring and equal numbers in the fall.** Professor Sax

<sup>90</sup> Tallamy, Doug, *Bringing Nature Home*, Timber Press, 2007

<sup>91</sup> Tallamy, Doug, "Flipping the Paradigm: Landscapes that Welcome Wildlife," chapter in Christopher, Thomas, *The New American Landscape*, Timber Press, 2011

<sup>92</sup> Dov Sax, "Equal diversity in disparate species assemblages: a comparison of native and exotic woodlands in California," *Global Ecology and Biogeography*, 11, 49-52, 2002

also reports the results of many similar studies (comparing eucalyptus with native forests) conducted all over the world that reach the same conclusion.

Neil Sugihara tells us in *Fire in California's Ecosystems*, "Dead biomass accumulates in Mediterranean ecosystems because weather conditions are favorable for growth while decomposition is active for a relatively short part of the year. Fire complements decomposition in these systems by periodically removing debris through combustion."<sup>93</sup> In other words, conditions for accumulated leaf litter in California's ecosystems are not unique to non-native species. Rather they are a function of California's climate. Native and non-native vegetation are equally likely to accumulate leaf litter in California's Mediterranean climate. Native vegetation in California promotes fire, just as non-native vegetation does. Destroying non-native vegetation to promote native vegetation will not reduce fire hazard.

#### **Assumption that wildlife benefits from native plants**

The DEIS acknowledges that wildlife is likely to be harmed in the short run by the implementation of the proposed project, such as pesticide use. However, the DEIS claims that short-term harm will be mitigated by the long-term benefit of native habitat to wildlife:

*"Although extensive mitigation measures would be implemented to protect wildlife during implementation of the proposed and connected actions, some wildlife would inevitably be harmed, including protected species. In the long term, conditions would improve for native wildlife that benefits from native habitat."* (DEIS 5.17-1)

There are two flaws in this assumption:

1. We cannot assume that a native landscape will be the result of this project because nothing is going to be planted and the natural succession landscape is much more likely to be non-native, as we have explained earlier in our comment.
2. Even if a native landscape is capable of surviving the devastation of the proposed project and out-competing the existing non-native vegetation, there is no evidence that wildlife is dependent upon or benefits from native habitat.
  - o We cited earlier a study by Dov Sax of diversity of insect species found in eucalyptus forest compared to diversity in oak woodland in Berkeley, California. In addition to quantifying species of insects, Professor Sax also found equal numbers of species of amphibians and birds in both types of forest.
  - o In 1975, Professor Robert Stebbins (Emeritus, UC Berkeley) was hired by East Bay Regional Park District to conduct a survey of vertebrate animals living in several parks (Sibley, Chabot, and Tilden). The forest types that Professor Stebbins studied were redwood, Monterey pine, eucalyptus, and oak-bay woodland. Here is how he described his findings:
    - *"Redwood and Monterey pine habitats are notably depauperate in vertebrate species.*
    - *"Eucalyptus habitat is far richer in vertebrates than either redwood or Monterey pine and vies with 'dry' chaparral and grassland in species diversity and 'attractiveness.'*
    - *"Oak-bay woodland is the richest in both species and 'attractiveness.'*
    - *"Grassland is a little less rich in species and 'attractiveness' than the other native habitats, but only slightly richer than eucalyptus habitat."<sup>94</sup>*

<sup>93</sup> Neil Sugihara and Michael Barbour, "Fire and California Vegetation," in *Fire in California's Ecosystems*, University of California Press, 2006

<sup>94</sup> Robert Stebbins, "Use of Habitats in the East Bay Regional Park by Free-living Vertebrate Animals," August 1975. In "Vegetation Management Principles and Policies for the East Bay Regional Park District," June 1976

The DEIS acknowledges that wildlife will be harmed by the proposed project in the short-term and it provides no evidence that wildlife will benefit from the proposed project in the long-term. Therefore, the final EIS cannot claim that wildlife will benefit from the proposed project. The final EIS must either provide scientific evidence of long-term benefit of the proposed project to wildlife, or it must acknowledge that wildlife will be harmed by the proposed project both in the short-term and in the long-term.

**In conclusion**, the DEIS relies on unsubstantiated assumptions about the superiority of native plants and the inferiority of non-native plants to justify the proposed project. It also does not acknowledge the potential for windthrow that is the likely result of "thinning" 90% of the forest on the property of the East Bay Regional Park District. Finally, its analysis of the potential for erosion is inadequate and does not acknowledge the existing erosion resulting from identical projects on the property of UC Berkeley. These flaws must be corrected by the final EIS or the proposed project altered to mitigate for the environmental damage resulting from these projects.

#### **Part V: "No Project" is the only viable alternative**

The "No Project" alternative is the only viable alternative because it will deny FEMA funding for projects that will increase fire hazards in the East Bay by

- Distributing tons of dead wood on the ground
- Conducting prescribed burns that increase risks of wildfire
- Promoting a landscape that will be more flammable than the existing landscape
- Eliminating fog drip and shade that keep the ground moist and reduce risks of ignition
- Eliminating the windbreak that can stop a wind driven fire

FEMA funding should not be used to increase risks of catastrophic wildfire. The reduction of hazards such as wildfire should be FEMA's only criterion for grant funding.

The "No Project" alternative does not prevent the sponsors of the proposed projects from performing fire hazard management on the public lands for which they are responsible. They can, for example, continue to mow herbaceous vegetation from the roads that border their properties in order to reduce risks of ignition responsible for most fires in California. In the event of another deep, sustained freeze that is capable of causing exotic vegetation to die back, they can remove the dead leaf litter that has contributed to wildfires in the East Bay in the past. Given that these deep freezes are rare and less likely to occur in our warming climate, this responsibility is not an onerous task.

The proposed projects would violate California law regarding the reduction of greenhouse gases. If the projects of UC Berkeley and the City of Oakland proceed as planned, they will surely be subjected to legal challenge on those grounds.

The proposed projects will damage the environment in significant ways that can be avoided by adopting the "No Project" alternative without increasing fire hazard risks.

- This project will release thousands of tons of greenhouse gases into the atmosphere, contributing to climate change.
- This project as defined by the DEIS will require huge amounts of herbicide to implement.
- This project will cause erosion, as similar projects have in the past.

- The drastic “thinning” of most non-native trees by the East Bay Regional Park District will result in the failure of the few remaining trees that are not adapted to wind to which they will be exposed.

There is no potential benefit to the proposed project, as presently defined. It presumes that conversion to a native landscape will be the benefit. Even if we accept the assumption that a native landscape is somehow superior to the existing landscape—and we do not—this is an unlikely outcome since there are no plans to plant anything after all non-native vegetation is destroyed. Nor do we accept the assumption that a native landscape is less flammable than the existing landscape.

Respectfully submitted,  
Mary & Keith McAllister  
Oakland, CA  
[marymcallister@comcast.net](mailto:marymcallister@comcast.net)  
[kmcallis@ccsf.edu](mailto:kmcallis@ccsf.edu)

**From:** [Mark McDonald](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comment on Tree project  
**Date:** Sunday, June 16, 2013 11:29:08 PM

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June 16, 2013

To whom this may concern;

I am writing to voice my opposition to the tree removal project as it now exists. As I continuously contact people concerned with this subject who have not heard anything about this project, I believe not adequate notice was employed. I am familiar with the venues that were employed but I still believe the lack of media involvement allowed the deadlines to slip by for many interested folks. This is always true at this time when the myriad demands of graduation and summer preparations.

Furthermore, I oppose the solution selected for a problem I agree is serious and has to be addressed. I believe inadequate attention has been given to effects on species habitat and what effects will occur when entire tree areas are cut and stumps dosed with a dangerous herbicide. I also believe the problem could be addressed by removing all the ground level brush that is the main fire hazard. I have read studies that assert that without the ground level brush the trees would not be able to ignite and be a fire hazard.

I also object to the use of Round Up, or glyphosate as a usable tool to be distributed into the environs. The herbicide is known to heavily affect microbial populations which can cause all kinds of disastrous problems, as many of these life forms inter-weave with many others in a check and balance relationship that could be disrupted with the introduction of this much of the herbicide. The manufacture of the herbicide is known to produce deadly dioxins which are extremely hazardous and any alternative should be considered. One that comes readily would be to employ many of the currently unemployed to create brush removal teams, a healthy approach that provide two solutions to two serious problems. The obvious response would be excessive costs but I really wonder if that is true when one considers all the connected costs of storage and treatment of the hazardous materials plus the potential damage from employing the herbicide.

Finally, I specifically object to the part of the project that is U.C. related, as it appears to me to be just another attempt to expand their development mania into Strawberry Canyon, a place that should be spared as one of our last adjacent natural areas. The U.C. segment should be separated and engaged on its own issues which are not the same as the others.

accepting my comments, Mark McDonald  
1815 Parker St Berkeley Ca

Thank you for

**From:** [greenhtheglobe@juno.com](mailto:greenhtheglobe@juno.com)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** tree removal  
**Date:** Friday, May 17, 2013 7:40:06 AM

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To those concerned:

I submit that although it is a good plan to remove some of the large trees which have grown up in the East Bay hills, to use large quantities of Roundup or other organophosphates on the trees is dangerous and poses a hazard to wildlife, which abounds in the hills. Monterey Pines need no herbicide once cut; they will just die. Eucalyptus can be controlled by using a small amount of herbicide on the cut stumps as a follow-up; surely much smaller amounts of herbicide than have been mentioned can result in the same or better effects. I speak as someone who has participated in eucalyptus control on Albany Hill, and brush control in Nevada county. Thanks, Dave McFarlane

**From:** [Jamie McGrath](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Removal of 80,000 trees in the East Bay Hills  
**Date:** Monday, June 17, 2013 4:33:20 PM

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Dear FEMA,

I strongly oppose the proposed plan to cut down thousands of non native trees in the Berkeley and Oakland hills. As someone who lived in the Hills after the firestorm in 1991, I know that the fire department's continual monitoring of the Hills and requirements for us to keep grasses cut, lower tree branches pruned and other fire safety measures have been effective in preventing another severe fire. The devastation that removal of all non native trees will cause to our Regional Parks, along with UC Berkeley and Oakland plans for tree removal, will leave our most beautiful Parks and greenbelt areas barren and unprotected from soil erosion as well as enhancing and creating additional fire hazards from lack of shade and moisture given by the non native trees.

The Eucalyptus wood chips up to 2 feet in depth that would be left also pose a fire danger. If dead, dying or dangerous trees of various species must be removed for fire safety then they should be removed. But this massive cutting down of healthy trees followed by a massive use of toxic herbicides is a danger to us, our children and pets.

I attach the following article for the record, which points out in excellent detail that clearcutting INCREASES fire danger -- we already have an example of that happening here in the Bay Area recently on Angel Island.

I am sure the Federal Government would not want to be sued for deliberately creating a situation in the East Bay hills that made our neighborhoods a tinder box. That is, indeed, the situation that will be created with this highly dangerous plan. It is a waste of taxpayer money and a threat to our safety.

I believe a less drastic plan would result in a safer and more aesthetic result. As someone who greatly enjoys the beauty of our greenbelt areas and Regional Parks, I hope this plan will not be approved in its present form.

Sincerely,

Jamie McGrath (former resident 1845 Manzanita Drive, Oakland)  
836 Marin Rd.  
El Sobrante CA

[http://www.contracostatimes.com/montclarion/ci\\_12946185](http://www.contracostatimes.com/montclarion/ci_12946185)

My Word: Task force report confirms trees are not primary fire hazard -- Contra Costa Times

By David Maloney

Posted: 07/30/2009 10:42:02 AM PDT

I retired from the Oakland Fire Department in 1988. In 1989 I began working for the

Department of Defense as chief of fire prevention at the Oakland Army Base. In 1991 I was appointed to the Oakland-Berkeley Mayors' Firestorm Task Force. Our job was to investigate the causes of the 1991 Hills Fire and make recommendations to prevent its recurrence.

The Task Force Report concluded that the spread of the fire was mostly due to the radiant heat generated by burning houses. A burning house has a sustained radiant heat transmission of 2,500-3,000 degrees. The spread of the fire was not due primarily to burning trees — eucalyptus or any other species.

The July 17 article failed to mention another crucial fact. There are two species of eucalyptus that predominate in the East Bay Hills: The blue gum, which is highly fire-resistant, and the dwarf blue gum.

The characteristics that determine the fire resistance of any tree are how high from the ground its branches begin and the thickness of the tree's bark. The blue gum has a very thick bark, enabling it to withstand fire, and its branches begin about 25 feet from the ground, — a ground fire will blow past it without catching its leaves on fire. An example of the blue gum is the copse of trees on the University of California campus close to Oxford Avenue.

The dwarf blue gum has a thick bark but its branches are low to the ground. A ground fire will transmit relatively easily to its leaves, thereby causing the tree to burn. Many native California trees, such as oak, also have branches low to the ground.

In the late 1990s the federal government clear-cut blue gum eucalyptus from Angel Island. The eucalyptus canopies that provided shaded avenues for countless hikers and bikers were replaced by grass, brush and shrubs. In 2008 the worst fire in modern Angel Island history occurred, and consumed 400 of the island's 740 acres. It burned much of the grass, brush and shrubs that had taken the place of the clear-cut eucalyptus. Blue gum eucalyptus is a dominate species. It precludes grass, brush and shrubs from growing around it. If the blue gum eucalyptus had not been cut down, the grass, brush and shrubs could not have survived, and the fire would not have been as extensive as it was.

My experience on the task force was that many people who wanted only native California plants and trees on our hillsides seemingly deliberately ignored the facts of the major cause of the fire, and the difference between the blue gum and dwarf blue gum.

The Hills Conservation Network is correct in its support of thinning out the East Bay Hills wooded areas. It would be a waste of taxpayers' money to clear-cut the East Bay Hills of trees that are highly fire-resistant, and it could lead to another devastating fire. Because of our conclusions, new fire prevention codes relative to housing construction were promulgated by the State of California and various cities throughout California. There were no new fire codes promulgated relative to the species of trees that would populate the East Bay hills.



**From:** [Virginia Megley](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Strawberry Canyon Plan  
**Date:** Monday, June 17, 2013 5:24:54 PM

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To FEMA,

I am writing to state my opposition to FEMA's proposed plan to clear-cut Strawberry Canyon as part of the UCB's plan to extend the University. I am a former resident of Berkeley and often hike in the canyon area. The canyon is a beautiful area that is widely used for recreation and greatly contributes to the aesthetics of the campus environment. Second the trees there do contribute to the absorption of CO2 and help slow down global warming. If the existing trees are cut down they should be replaced by native trees that would also absorb CO2 and prevent soil erosion. Third, the use of herbicides should be prohibited; manual labor could be used (thereby creating jobs) to trim, weed and prune shrubbery.

I am opposed to any more building in the canyon area. Building in that area is not practical for the University. It is an area that is not easily accessible. In the event of a building fire, fire prevention teams would have a difficult time getting equipment in to fight any fire. If the University wants to expand it's more practical to expand west toward the flat lands of Berkeley.

Last, I'm wondering if this is an appropriate use of FEMA's funds. I thought the purpose of this agency was to provide assistance in the event of a disaster. I do not think this proposal is the way for FEMA to utilize its resources.

Thank you for considering my suggestions.

Sincerely,  
Ginger Megley

**From:** [Baba Michael](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** up coming project  
**Date:** Saturday, May 18, 2013 9:24:17 PM

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Greetings,

I am writing to you to let you know that i disagree with the upcoming plan to use Roundup herbicide on the proposed trees to be cut down in the East Bay. This chemical has been shown to be toxic to human tissue ( see this article in Scientific American: <http://www.scientificamerican.com/article.cfm?id=weed-whacking-herbicide-p> )

This would be potential dangerous to the employees applying the herbicide, not to mention the effects on our ecosystem.

I'm all for the removal of the invasive eucalyptus, but not with poisons. As a resident of the East Bay for 9 years, and a person who loves hiking in the parks of Oakland and Berkeley, I ask that you find another, more creative solution to this problem.

Thank You,

Michael Jacobson

**From:** [Michael Oswald](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** Opposition to The FEMA Draft EIS for UC, Oakland, and EBRPD  
**Date:** Monday, June 17, 2013 10:51:41 AM

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The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it will cause severe negative impact to the entire community of Berkeley and Oakland.

The slaughter of our community's lower hills forests along with the application of herbicides will have the following negative impacts:

- Complete destruction of the nearest outdoor trails access for low income disadvantaged communities of west Oakland and south Berkeley.
- Raping of the native bird and animal populations of their precious and beautiful ecosystem.
- Diminish the value of all properties close to the hills of UC Berkeley.
- Turn a once beautiful land into a sun fried, dried up, wasteland only increasing the fire danger.
- Waste our tax payer money in a project that tax payers do not want.
- Set a terrible example for the children of our community of how people in power to squander the community's wealth can do so without a chance for the community to voice opposition.
- Spark outrage among the entire East Bay citizenship that is going to become national headlines as this will certainly lead to occupy type action.

DO NOT move forward with this project. I, on behalf of my family, my friends, and my community, ask that you retract the EIS and insist that the project be re-worked with input from the city and residents of Berkeley and Oakland having the input we deserve.

Thank you,  
Michael Oswald  
2914 Forest Avenue  
Berkeley CA 94705

**From:** [Michael Seaman](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** UC, Oakland, and EBRPD vegetation management project  
**Date:** Wednesday, May 22, 2013 10:45:57 PM

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The FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written. I have known the project area in depth for decades as a resident and as a former property owner who dutifully performed annual vegetation control for fire protection. The property I once owned, as well as my family home, burned in the Oakland Hills firestorm, which also took the lives and property of friends and neighbors. Further, having spent 7 academic years at the University of California earning design and environmental management degrees, I am well aware of the hills' historic habitat vs. the present condition. Yet I cannot support the conclusions of the draft EIS.

The draft EIS not adequately address the cost or the risks associated with use of the proposed herbicide. FEMA should retract the EIS and revise it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak communities that will emerge as a result of the loss of shade canopy.

Neither does the draft EIS adequately analyze reasonable alternatives proposed for fire risk mitigation. There are more effective, cheaper methods of vegetation management than those discussed in the draft EIS. Those alternatives would bring much less harm to the environment. The draft EIS should be revised to consider them.

The National Environment Policy Act, which governs the preparation of environmental documents for this type of project, was not enacted to provide a platform for justification of a preconceived solution. It was instead intended to help decision-makers understand the consequences of proposed actions so as to lead to better projects, in balance with their environmental setting. The consequences of the proposed project are clearly detrimental to the environment. The project as proposed is ill-conceived and, as many public commenters have stated, cannot be supported. FEMA should revise the draft EIS to address the myriad problems inherent in the proposed project, including herbicide use and alternative methods to mitigate fire risk.

Thank you for your attention to these comments.

--

Michael Seaman  
Arden Arcade CA 95825  
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**From:** [michelle delon](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comment  
**Date:** Sunday, May 19, 2013 11:57:30 AM

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I am writing after reading of the plans to cut thousands of trees and to replace them in some areas with wood chips and to use toxic herbicides to prevent regrowth. While I understand the importance of fire prevention, this is clearly not the best solution to address the hazards of fire.

To start, we need trees. They supply oxygen and absorb CO2. Plus the root systems allow water when it falls to be absorbed in the land rather than creating dangerous runoff, which this plan will increase. Wood chips are not the answer.

In addition we need to stop the use of dangerous herbicides not increase their use. Please consider these issues and find another solution that really addresses the long term problem.

I thank you for your attention.

Kind regards,  
Michelle Victoria-Delon

SmartLifeways  
Michelle Victoria-Delon  
[www.SmartLifeways.com](http://www.SmartLifeways.com)

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**From:** [Mike Bradley](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Tree Removal Proposal  
**Date:** Saturday, June 01, 2013 10:59:40 AM

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I am opposed to the current plan for massive tree removal in the East Bay hills. It is a wrong-headed approach to fire prevention. Removing undergrowth is more effective than tree removal. A 2-foot-thick carpet of wood chips would be swept down the slopes in a heavy rain. Overuse of herbicide would kill unknown numbers of beneficial flora and fauna.

= Mike Bradley  
Oakland CA

June 12, 2013

Robert Miller  
727 Bayview Court  
El Sobrante, CA 94803



FEMA  
P.O. Box 72379  
Oakland, CA 94612-8579

RE: Draft EIS, East Bay Hills Hazardous Fire Risk Reduction

Dear FEMA,

I am a deaf resident of El Sobrante. My wife became disabled as a result of exposure to herbicides.

The project for which the three applicants—UC Berkeley, East Bay Regional Park District, and the City of Oakland—seek FEMA funding is profoundly disturbing, and the draft EIS is inadequate and deeply flawed.

One of the criteria for funding is “net benefit to the community.” But the project calls for widespread and prolonged use of herbicides over a vast area of public lands, a plan which will inevitably have negative impacts on humans. The draft EIS fails to adequately assess these impacts.

Herbicides are especially damaging to vulnerable populations, even at very low doses. While the report does recognize, in passing, the concerns of “sensitive” groups such as children, pregnant women and the elderly, people with chemical sensitivity are not mentioned. Large numbers of people are now experiencing adverse health effects from even very low levels of chemical exposure. A substantial body of evidence now demonstrates that the standards currently in place for evaluating the risk to human health posed by pesticides are inadequate. Furthermore, the draft EIS contains no evaluation of the impact on humans of so-called “inert” ingredients in the herbicides intended for use, despite the fact that many compounds which have been classified as “inert” have been shown to be as toxic as the “active” ingredients.

Chemical sensitivity is recognized as a disability in American jurisprudence. All of the acreage which is targeted under this plan is public land, intended for the enjoyment of all the people, not merely those with healthy respiratory systems. The widespread application of pesticides in these public spaces would erect a barrier to use of these spaces by people with disabilities, and would therefore constitute a violation of the Americans with Disabilities Act.

But I am concerned not merely with the well-being of humans, but with the entire multitude of creatures which dwell in the targeted habitats. Because they cannot speak for themselves and are thus powerless to restrain this juggernaut of development and greed, I feel obligated to speak for them by pointing out, as forcefully as possible, the fact that this plan will cause displacement, death, and disability to countless species of animals and plants. This is outrageous.



**From:** [Christopher Patrick Miller](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Please Absolutely End This Plan!  
**Date:** Friday, May 17, 2013 8:09:21 AM

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To Whom it May Concern,

I am a graduate student at UC Berkeley and often run in the hills of both Strawberry Creek and Claremont Canyon, cycle on the roads in Tilden park, and hike with my dog through similar areas. Let me tell you why this would be a disastrous decision for two main reasons, but there are others of course.

The first is obviously ecological and the herbicides would cause more long-term damage to the water table and ecosystem than any speculative fire. Having read about the long-term effects of Roudup-like products in soil, I am highly suspicious that this project is being conceived as a wholistic effort to protect and enhance life.

I suspect it is more of a risk management calculation. This is not to say that forest fires aren't a real threat to human homes and lives, but as you are probably aware, periodic fires are actually necessary for a forest to regenerate itself. This kind of decision-making logic about eliminating a risk before it is a risk could legitimate many horrendous environmental disasters and this is a bad precedent to set for FEMA. In making this decision, you have the potential to ruin soil in a pivotal growth area that feeds directly into the water-tables of Berkeley and Oakland. You will increase erosion and you will eliminate the ability for those trees to capture carbon from the neighboring urban environments.

If you have not already encountered it, here is one article about the long-term damage of herbicides for soil: <http://www.motherjones.com/tom-philpott/2011/08/monsantos-roundup-herbicide-soil-damage>

Second, the east bay is an area which attracts cyclists, hikers, and urban dwellers who value the ability to move outside of urban density and into a network of areas for natural recreation and study. Have you ever been on Tunnel Road on a Saturday? Or ran up Strawberry Creek on a Friday afternoon? The areas are flooded with people. To remove the growth in these canyons is to diminish what is essentially one of the greatest, most used resources in the city and region, what sets it apart from others. This is not a change of mistake one can recover from either and you will be diminishing the quality of life in this region for generations and generations.

Given the scale of environmental risks and damages to quality of life, I just don't see how this is a responsible decision.

Sincerely,

- Christopher Miller

PhD Candidate  
University of California, Berkeley

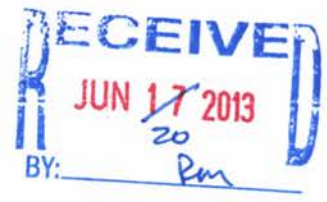


To FEMA

June 17, 2013

Re Environmental Impact Report(s)  
on cutting trees in Berkeley -  
Oakland hills

From: Merrilie Mitchell  
1612 Delaware St.  
Berkeley CA, 94703



I and a number of associates in Berkeley have great concerns re. your plan to cut so many trees — the danger to wildlife & to residents from your plan to use herbicides & chemicals (herbicides have been linked to Parkinson Disease in studies where the herbicides were used in farming areas) & poisons will be in the wind.

— concern for Greenhouse Gases (GHG) — increased by using chemicals, machinery and rearing →

- (removing) so many trees which absorb GHG + other pollutants + also cool the earth + prevent soil erosion
- concern re fires from grass + weeds (prickly sappy, so dry + combustible) as weeds will return with invasive species + will require more herbicides, GHG and destruction of the wildlife area between regional parks
- also concern re UC + LBNL (The Labs) building + paving the land up there as we have heard they refused to sign a statement that they will not. UC + Labs use tremendous amounts of GHGs, and should not be paving over open-space + potential parkland needed for a healthy environment for living things!

**From:** [Tim Morgan](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** East Bay Hills  
**Date:** Wednesday, May 22, 2013 3:04:23 PM

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Dear FEMA Officials:

From 1992 to 2001 I lived near Tilden Park. I knew it well when I attended UC Berkeley Law in 1975-78. I watched the Oakland Hills Fire flames from an apartment in San Francisco.

In California fires happen, especially when it is dry. The Oakland Hills problem was a lack of preparedness, including inadequate road access and egress. Exploding Eucalyptus trees, while newsworthy, did not cause the fire.

Deforestation would be at best a temporary fire safety solution. Whatever grows back will be flammable.

There is no herbicide that can guarantee a return to native flora. The diversity in the Oakland Hills is here to stay. I doubt even just removing Eucalyptus trees would eliminate problems, but it can be done with less drastic means.

These are some of the environmental factors inadequately address in the EIS, from what I've read.

Yours truly,

Tim Morgan  
916-445-7342

**From:** [amosman2@juno.com](mailto:amosman2@juno.com)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Oakland trees  
**Date:** Wednesday, May 22, 2013 4:02:26 PM

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Regarding the proposed huge tree removal from the Oakland hills, I agree with the many negative comments you have already received and will not repeat them here, but rather I'd like to add observations which you may not have considered.

One group of proponents wishes to restrict the plants on the hills to "native species". The original native growth was mostly thousand year old redwoods and plants which grow with them. There is no way to return to that native state. The trees which replaced them do form a forest which does a lot of good and has lived there for many years without major problem, not a bad substitute considering that most alternatives would have been worse, and individual problem areas can be addressed case by case.

The fire storm which swept down from the tunnel highlands was caused by human error not by any special quality of the trees. If the brush fire had been actually put out there would have been no fire. During Santa Ana wind conditions all leaves for the firemen should be cancelled and all fire personnel should be on alert. Any small fires such as the brush fire in question should be continuously flooded with spray for hours, perhaps all night. The ground would soak the water making it impossible to support a fire. Those winds die down during the night so water can accumulate. None of this was done during those drastic conditions which occurred that weekend. My point is that the idea that this fire indicates a high fire danger from the trees is incorrect. For example, a house on my block in Oakland caught fire, the fire department responded and put out the blaze, the occupants left for the night, the firemen left too and the house burned down during the night. No trees in sight. Human error again. With normal care the Oakland area forests are not a great fire danger. They can burn, but that one event is being misused as an excuse to cut them down.

The grasses which brown in the summer on all the hills around are non native species and are a true fire danger. There are some efforts to reduce the amount of such grasses but they are only partly successful. Remember the big one was caused by a grass fire allowed to re ignite.

Obviously there are other agendas here whose proponents are using fire danger as an excuse to cut trees. Those agendas should be addressed on their own, case by case. It is my opinion and experience that the present forest does so much good in so many ways that other agendas would have a high bar to reach in order to justify cutting down the forest or even part of it. Any plan to cut massive amounts such as the one being presented is completely against the public good.

Sincerely,

Albert P. Mossman

**From:** [mramato](mailto:mramato)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Subject:** Fw: tree removal  
**Date:** Tuesday, June 04, 2013 11:28:55 PM

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-----Forwarded Message-----

>From: mramato <mramato@earthlink.net>  
>Sent: Jun 4, 2013 10:56 PM  
>To: EBH-EIS-FEMA-RIX@femadhs.gov  
>Subject: tree removal  
>

>To whom this may concern, I could only agree with the tree removal project throughout the East Bay Regional Park District land IF and only IF the trees are removed slowly over a 10 year period and replacement trees such as redwood, bay, oak and other trees are immediately planted in their stead..to remove all the trees at once would be a mini-ecological disaster . The canopy that the trees provide is home to avian as well as mammalian species...the trees also provide shelter from the sun for those of us who like to hike as well as for the animals that we occasionally get a glimpse of...the trees, be they eucalyptus or oak, also take up the excess co2 in the environment and exhale the oxygen that we humans prefer to inhale. And if you cut them down please do NOT apply herbicides to the stumps of the eucalyptus. That will only end up in the small creeks which I have noticed sometimes hold a very fragile community of tiny trout...I dont think they could survive the toxins in the water...I appreciate the SF Chronicle informing the public of this impending disaster...Rose Amato



**From:** [Richard A Muller](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [Elizabeth Muller](#); [Rosemary Muller](#); [Rahal Waladi](#); [Melinda Muller](#); [Rachel Findley](#)  
**Subject:** Eucalyptus  
**Date:** Wednesday, May 22, 2013 3:58:43 PM

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Dear FEMA,

Please do not cut down the beautiful and historic eucalyptus that cover the hills behind my home.

They look as if they were painted by Vincent van Gogh! They rise tall and gracefully into the skyline. I am 69 years old, and walking through them several times each week is one of my great pleasures. The smell is refreshing. The play of light through their rustling leaves is lovely.

They are more "native" than I am, even though I have lived here most of my life. Anything over 100 years old can be legally classified as an "antique." They are certainly historic. They were planted before my grandfather was born -- before my granddaughter's great-great-grandfather was born. Some botanists claim they are not native. If they aren't, then neither are the people who live in this area.

Some people say that the trees present a fire danger. However that claim needs to be evaluated locally. In the hills they intercept much of the fog, and that can reduce fire danger; they replace grasses which can spread fire even more rapidly. Don't evaluate the threat solely from Eucalyptus statistics in other locations. Beware of the Euca haters who put forth untested and unexamined arguments claiming scientific basis when, in fact, they are just making up plausible but not necessarily true claims. You'll hear a lot of pseudoscience claims from "experts" who have never published a single scientific paper.

The planned cutting, with hiking trails denied for three years, will also interfere greatly with my weekly exercise hikes. Three years is a long time! And the Eucalyptus provides some of the best wind breaks in those hills.

Richard Muller  
Professor of Physics, U.C. Berkeley  
2831 Garber St.  
Berkeley CA 94705  
(2 blocks away from the beautiful historic Eucalyptus trees on the hill)

**From:** [Muriel Strand](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EIS for "hazardous fire risk reduction"  
**Date:** Monday, May 20, 2013 5:05:46 PM

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the proposed project is a cure worse than the disease.

clearcutting thousands of trees will destabilize hillsides and lead to increased sedimentation of san francisco bay as well as substantially increase the danger of landslides.

drenching the landscape with glyphosate will compromise the health of many plants and animals for no good reason.

this is totally crazy and this idea should be dropped immediately. the environmental impact will be worse than the alleged hazard it pretends to prevent.

just the increased carbon dioxide emissions are enough of a reason to deep-six this insanity.

Muriel Strand, P.E.

PO Box 5625  
Sacramento CA 95817

If you are proved right, you accomplish little; but if you are proved wrong, you gain much: you learn the truth.

- Hasidic proverb

[www.perma-investment.blogspot.com/](http://www.perma-investment.blogspot.com/)  
[www.work4sustenance.blogspot.com](http://www.work4sustenance.blogspot.com)

**From:** [Nathan J. Winograd](mailto:Nathan.J.Winograd)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** No on Berkeley/Oakland Tree Removal  
**Date:** Sunday, June 02, 2013 10:27:15 AM

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We are residents of the Oakland hills and we are writing to you in opposition to the current Draft EIS plan by UC Berkeley and Oakland to cut down/poison 50,000 eucalyptus, acacia and pine trees in the Oakland and Berkeley hills.

Those of us who chose to live in the Oakland hills did so because of their natural beauty. To be surrounded by majestic, towering trees – to quite literally live within a forest – is the reason we moved here. To us, it does not matter what the species of those trees are, and to most people, it doesn't matter. However, a small group of individuals who have an irrational hatred of certain species of trees that transcends bias into the realm of fanaticism are continually threatening to destroy the natural habitat where we live, to reduce the beautiful landscape of towering trees to stumps and decay. And they do so by misportraying particular species of trees as "non-native," an unscientific, wholly arbitrary distinction that scapegoats some species for eradication based on wholly subjective criteria and narrow, personal prejudice.

My family lives here and we don't want this, my neighbors don't want this, and it is certainly not in the best interest of the animals who also call the forest home and who will be displaced and killed by the plan to decimate their habitat through clear cutting and poisons. The current Draft EIS is unacceptable as it will inflict enormous environmental damage, expose the public and wildlife to thousands of gallons of toxic herbicide, destroy raptor habitats, destabilize steep slopes, and actually increase the risk of hazardous wildfires.

FEMA should retract this EIS and remove those portions of the EIS that call for clear-cutting tall trees. For true fire abatement, the EIS should instead support a far less destructive methodology that would focus on a "species-neutral" approach, focusing on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires. This would also prevent the loss of thousands of CO2 absorbing trees at a time when the interests of our planet dictate that we should be planting more trees, not eliminating thousands of them. Killing more than 50,000 trees and poisoning them for up to 10 years will have disastrous effects on this beautiful and healthy ecosystem, and cannot be allowed to happen.

My family and I don't want to live in an environmental war zone, to watch with sorrow and great heartbreak as decades old trees fall to the chainsaw, to see animals displaced, harmed and poisoned, to watch beautiful, lush forests be reduced to hillsides of barren stumps merely to satisfy the perverse preferences of a tiny but very vocal, very persistent minority which cleverly cloaks their agenda of destruction in an faux "environmentalism" disguise. Please, the proposed plan does nothing but satisfy the interests of a very small, very extreme consistency that does not have the greater good or the interests of those who actually live in the hills in mind. They are using FEMA funds to mask an agenda they have long had and one that does not enjoy popular support: clear cutting the stunningly beautiful Oakland and Berkeley hills.



We bought our home in late 2007 just before the beginning of the Great Recession. As it is, our home has already lost several hundred thousand dollars worth of property value. A plan that would threaten one of the most appealing characteristics of the hills – the forest – would place our property value in even greater jeopardy. Shouldn't the economic and aesthetic interests of those of us who live in the hills and therefore have a very keen interest in the continued existence of the forests outweigh the interests of people who are motivated by nothing more than a warped philosophical disdain for certain trees? In the end, what do they gain and what do we stand to lose? Victory for them is an ugly, barren hillside of stumps, a tree cemetery that is painful and heartbreaking to look at and which will cause property values in the hills to plummet even further. It isn't fair. In fact, it is the very definition of insane. Please, stop the madness. Save one of the Bay area's greatest treasures: the forests of the Berkeley and Oakland hills.

Nathan & Jennifer Winograd

**From:** [lechroy@gmail.com](mailto:lechroy@gmail.com) on behalf of [Lech Naumovich, Golden Hour Restoration Institute](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comments on EIS  
**Date:** Monday, June 17, 2013 5:47:33 PM  
**Attachments:** [Comment letter - FEMA Hazardous Fuels Reduction in East Bay - Golden Hour Restoration Institute.pdf](#)

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Please find the attached PDF with EIS comments. Thank you for confirming receipt of this document.

Sincerely,  
Lech Naumovich

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Lech Naumovich

Executive Director  
Golden Hour Restoration Institute  
Alameda, CA  
[www.goldenhour.org](http://www.goldenhour.org)

**The mission of the Golden Hour Restoration Institute is to provide engaging, science-based instruction and project leadership in order to conserve and restore native species and habitats.**

**From:** [lechroy@gmail.com](mailto:lechroy@gmail.com) on behalf of [Lech Naumovich, Golden Hour Restoration Institute](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comments on EIS  
**Date:** Monday, June 17, 2013 5:47:33 PM  
**Attachments:** [Comment letter - FEMA Hazardous Fuels Reduction in East Bay - Golden Hour Restoration Institute.pdf](#)

---

Please find the attached PDF with EIS comments. Thank you for confirming receipt of this document.

Sincerely,  
Lech Naumovich

--

Lech Naumovich

Executive Director  
Golden Hour Restoration Institute  
Alameda, CA  
[www.goldenhour.org](http://www.goldenhour.org)

**The mission of the Golden Hour Restoration Institute is to provide engaging, science-based instruction and project leadership in order to conserve and restore native species and habitats.**

*A dynamic, inspiring field-based restoration ecology institute*

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JUNE 17, 2013

To: Federal Emergency Management Agency  
Department of Homeland Security  
500 C Street, SW  
Washington, DC 20472

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## RE: COMMENTS ON HAZARDOUS FIRE RISK REDUCTION ENVIRONMENTAL IMPACT STATEMENT: CONTRACT No.: HSFHQ-09-D-1128

### To whom it may concern;

Pursuant of the National Environmental Quality Act (NEPA) [42 U.S. Code [U.S.C.] §§ 4321–4347], we are providing the following comments on the FEMA Hazardous Fire Risk Reduction Environmental Impact Statement. Golden Hour Restoration Institute is a small non-profit that provides engaging, science-based instruction and project leadership in order to conserve and restore native species and habitats. Golden Hour staff has worked extensively in the East Bay Hills and provides guidance to a number of projects in the Claremont Canyon area. While our organization does support the concept of the proposed project, we believe that once the planning is adequately vetted, the implementation of this project will be a critical component to its success for both fire reduction and habitat restoration. Implementation details are critical to understanding environmental impacts as described by NEPA.

The Oakland-Berkeley hills, in particular, have a storied history of wildland-urban fires, as well as plans to attempt to reduce fuels. These same areas are home to extremely unique flora and fauna including some 100+ locally rare plants (See EBCNPS comment letter) and several state-listed animals. Management activities if well intentioned and executed can improve or create habitat for some of the rarest flora and fauna including the Pallid manzanita (*Arctostaphylos pallida*) and the Alameda whipsnake (*Masticophis lateralis*). Some fuel reduction treatments have been successful in reducing eucalyptus while retain native vegetation; others projects have potentially increased the risk of ignition and fire while allowing for the spread of invasive species. We have been working with local agencies, park districts and non-profits in order to help identify critical factors that minimize environmental impacts while increasing habitat quality for native species, increasing fire awareness and fire safety.

### General Comments

The EIS fails to provide organized, detailed information on how the physical work will proceed. Although this is not typically included in an EIS document, the manner by which the work is completed is critical in the assessment of what impacts may occur. Additionally, the methodology by which trees

are removed, invasives are reduced, and how follow up work will be completed is essential to the long term impacts of this project. *How the treatment is conducted may be as important as where it occurs.* Timing, approach and the type of tools used should be critical components of this environmental review. We recommend text and an appendix that would closely outline a few removal scenarios in the treatment areas.

Monitoring and follow-up treatments are the key to long term success of such projects. This document fails to provide information to reveal that the authors understand the value of monitoring. Section 5.1.2.2.1 Mitigation and Monitoring Plans (MMP's) is at best a cursory attempt at a rigorous, well-vetted MMP that will help ensure this project is successful. The East Bay Regional Park District is conducting similar work and they at least have created a standard form which is publically accessible once a treatment prescription is approved. We recommend a similar form be presented in this document with specifics on how the 3, 7, and 10 year monitoring will be completed besides the obvious comparison of aerial photographs. The procedure and form should be vetted beyond a draft form in the FEIS document.

### **Critical Failures in Past Fuels Reduction Projects**

I (Lech Naumovich) have been involved with fuels reduction/habitat improvement projects (through various employers: Golden Hour, California Native Plant Society-East Bay Chapter, independent consultant) with Garber Park Stewards, The Claremont Canyon Conservancy, The City of Oakland, University of California at Berkeley, and the East Bay Park District. Each of these organizations has carried out or contributed to fuels management. While much of the physical on-the-ground work is completed by contractors and agency professionals, input from volunteers and locals has helped shape the specific treatment so that the desired results are achieved. Volunteers cannot and should not serve as a replacement, but rather a complement to the fuels work. In most cases where failures occurred and impacts were aggravated occurred when agencies/contractors (A/C's) or even a single person within an A/C tried to undertake a project without a complete understanding of the ecological setting and its constraints. Involved local volunteer groups can often help provide critical information that is otherwise forgotten at the time of treatment.

The following are critical components that led to past failures in fuels management and increased environmental impact during the project implementation phase:

- **A lack of expertise in the ecology of the local area including understanding when fuels reduction most effectively ties in with habitat restoration.** We highly recommend that the direct supervisor undertaking the fuels treatment be supported on site by an ecologist or botanist – the equivalent of a biological monitor with the ability to provide input to the

treatment. The A/C undertaking treatment is often more focused on the machinery, while a biologist can provide ecological guidance.

- **A lack of leadership from the project lead.** Often the project lead is not on site when critical work is being undertaken. Although they may understand the project and its impacts, typically all the management staff is not as well versed in the project. Typically, the actual construction foreman often doesn't understand the potential environmental impacts of the project as well as the office personnel, and this creates a disconnect. Typically, poorly informed decisions can occur at critical junctures due to this disconnect.
- **Poor communication between agencies.** The project leads should be required to have regular meetings wherein all parties can come meet and discuss concurrent operations. These meetings may help minimize confusion around treatments, timing and shared responsibilities. Additionally, regular meetings can create a forum wherein all partners have access to each other and can share general information about project implementation successes and difficulties.
- **Lack of public involvement.** Although FEMA will be funding this first critical step in reducing fire danger, it should be completed in a manner that engages the public. People react most adversely when they are surprised. FEMA and its partners should work to minimize the surprise factor by considering neighborhood project liaisons who can be briefed regularly about ongoing activities. The liaisons can then share information through social media and neighborhood networks. Public involvement should help create long term interest in fuels and resource management long after the contractors have departed. Additionally, the public often can share local expertise and help contractors complete projects with greater success. Golden Hour has expertise in engaging layperson project managers that can help continue to steward critical fire prone landscapes and help bring attention and resources to areas in need of treatment.

### Critical Opportunities for Success

The projects that we believe epitomize success are ones that have successfully integrated a multi-disciplinary approach to reducing the risk of wildfire. Treatment of fuels and ecological management is only a part of a long term solution. In fact, many of the Alternatives listed in in **Section 3.3 Alternatives Considered but Eliminated from the Study** are critical components of a multidisciplinary approach to make fire safety a priority in high risk areas. Although this FEMA project is limited in scope, there should be considerations and finances for a second round of funding that will follow-up the initial treatment with more contract work, as well as:

1. Increase public awareness about fire history in the region
2. Increase awareness about how to homes can be made more safe from embers

3. Increase an understanding about how natural resources at the wildland-urban interface need regular management due to the permanent effects of human infrastructure
4. Create a small grants clearinghouse to allow for interested public to apply for funding to re-treat or improve treatment in any given polygon that has been reviewed by this document. These grants should be reviewed and approved in a timely manner.

**Given the scope of this project, it is imperative that a coordinator position be created that manages all the different agencies and ongoing treatments.** This person should have strong interpersonal skills, leadership experience, and in depth knowledge about fire ecology and the local vegetation and fauna. This hire should be onsite for many of the treatments when they reach critical stages.

Thank you for continuing to improve the existing document so that there is a clear and robust way that communication between all involved parties. There should be a portal for the public to learn about the progress of this project as it is in progress.

Please do not hesitate to contact me with any further questions.

Sincerely,

*Lech Naumovich*

Lech Naumovich

Executive Director, Golden Hour Restoration Institute

**From:** [Negar](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Against the plan to clear cut in Berkeley  
**Date:** Friday, May 17, 2013 12:49:34 PM

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Dear FEMA,

Yes, forest fires happen. Are we supposed to clear cut all the forests with homes nearby and salt the earth with herbicide? This is ridiculous. And a "wildlife movement corridor" is supposed to fix everything? You're removing animals from their homes, decreasing their habitat, forcing them into a new place, and will inevitably kill some in your clear cutting efforts. You're decimating animals and vegetation long-term for a short-sighted goal. Stop.

Negar



**From:** [Nicole Walthall](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public Comments Re: East Bay Hills Hazardous Fire Risk Reduction Environmental Impact Statement (EIS)  
**Date:** Monday, June 17, 2013 11:49:21 AM

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[EBH-EIS-FEMA-RIX@fema.dhs.gov](mailto:EBH-EIS-FEMA-RIX@fema.dhs.gov)

Public Comments Re: East Bay Hills Hazardous Fire Risk Reduction  
Environmental Impact Statement (EIS)

1. The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. We ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees.
2. The FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written in that it does not adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.
3. The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.
4. The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects on air quality resulting from the proposed plan. We ask that you retract the EIS and rework it to fully consider all the implications of the proposed projects on air quality.
5. The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that would exist the

day after 100k+ trees are cut. This is a meaningless comparison as the EIS does not specify any means by which the project proponents will maintain the environment in this state. Because of this, shortly after the projects are completed, the fire danger will increase as more flammable weed/brush and tall grass vegetation takes hold. Because of this, we ask that you retract the EIS and rework it to modify the fire modeling to compare the current state to the expected new equilibrium state, not a completely meaningless state.

5. The argument that getting rid of eucalyptus trees helps to reduce fire risk is a questionable one. What will be left when those trees are cut down is: grass, brush, wood chips and FELLED eucalyptus. All wildly flammable. Many argued that mature trees attract fog/moisture; keep the water table up, temps down, etc. It should be considered that mature trees are LOWER risk than the proposed alternative.

6. Please consider the following evidence in your FEIS: On Angel Island: just as many fires there since clear-cutting as before.

7. Please evaluate completely in the FEIS: Whether or not native species ACTUALLY will re-propagate on their own.

8. Please evaluate use of ROUND-UP impacts on HUMANS (as well as wildlife/fish) by using the modern scientific evidence of the pesticide's breakdown chemicals ending up in HUMAN bodies and acting as endocrine disruptors.

9. Please require the funded agencies (UC Berkeley, City of Oakland) to disclose any long term plans to develop the "fire" areas they are supposedly using your federal funding to "clear cut". If this is readying for built out rather than fire safety (because how could 3 feet of mulch be considered fire safe), then this is an entirely bogus use of federal funds. (and illegal).

Thank you for your responses to my comments,  
Nicole Walthall  
Berkeley CA  
nwalthall@hotmail.com

**From:** [John O'Brien](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comment  
**Date:** Wednesday, May 29, 2013 1:42:56 PM

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Hello,  
I have just become aware of this issue and feel somewhat connected to it as a former resident of Berkeley. Having read (among other articles) the story in the Berkeley Daily Planet, I want to weigh in with the author:

"What I suspect is that a much more gradual approach to replacing the eucs with natives should be employed, one which among other things closely monitors the potential devastation which sudden oak death might wreak on native oaks, California bays and other susceptible parts of the original hills ecosystem. Fears about using the Monsanto herbicide Roundup to prevent re-sprouting would be allayed if non-chemical mechanical means of dealing with unwanted sprouts could be employed.

"Of course, doing things slowly and carefully would be more expensive. In the end, decisions like this often come down to money, sadly."

My 2 cents is NO to herbicide use, an ABSOLUTE NO on that.

Thanks for your consideration

J

--

Karin Obal  
776 65<sup>th</sup> Street  
Oakland, CA 94609



June 6, 2013

FEMA - Public Comment  
P.O. Box 72379  
Oakland, CA 94612-8579.

Re: UC Berkeley/City of Oakland Deforestation request

EIS means Environmental Impact Statement, correct? I have seen quite a bit of view points on the request of UC Berkeley and City of Oakland and the request seems skewed and therefore the discussion is not complete.

I am concerned with the concept of leaving deforested trees, chipped, on the ground:

- I grew up when sawmills let their chips and sawdust smolder, smoking for years, filling the air of mountain valleys with fragrant smoke. I can imagine a smoldering coastal range filling our air with smoke and worries about something else sparking.

- Putting herbicides in such quantity at the top of a water shed begs for problems as those toxins denude the banks of streams going down & out to the bay! Imagine neighborhoods and property owners dealing with loss of bank stability and losing property as banks fall in the first heavy rains season. I can imagine damming and local flooding causing additional property damage. Who will take responsibility? Please confirm adequate emergency and litigation costs in the EIS.

- All the efforts of preventing toxics draining to the bay will be for naught as the runoff rolls into the bay killing marsh flora & fauna and leaving us with heavier loss of fingerlings and fish than we already have.

Did anyone talk of how much other wild life would be displaced by this?

- Native Bees, honeybees and Beekeepers have come to depend on the eucalyptus to prove nectar and pollen during the three death periods we have annually. Non-native honeybees transformed California from a ranching and hunting economy to an agricultural economy. JS Harbison, the first successful importer of honeybees to California, addressed the National Beekeepers Association on August 19, 1903, and referred to the [importance of] 'red gum during mid-and late summer, for honey, and the blue gum and other varieties of Eucalyptus during the winter and spring for substance and increase, so that more of the later fine honey may be heart harvested"

Harbison urged beekeepers to plant their own bee pasture to improve their bee ranges. He told of his successful efforts seeding wild sages, especially black and white and

**From:** [Susan Oehser](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Hills conservation  
**Date:** Monday, June 17, 2013 5:44:45 PM

---

Gordon V. Oehser  
1845 Manzanita Dr.  
Oakland, CA 94611

Dear Sirs:

The proposal to cut down trees in the Oakland East Bay Hills is crazy.

The excuse of fire protection is false-the fires in 1991 were out of control because the Fire Chief decided it was OK to use the water reserved for fire-flow for residential construction. Trying to eliminate alien species is nuts. 90% of all the grasses are non-native. Go ahead and cut down a few eucalyptus == until you can get rid of the French broom, you haven't done a thing. It looks like a boondoggle to keep down insurance rates of those who want to live close to the forest.

Please spend FEMA money on some better use.

**From:** [James Orman](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Hazardous Fire Risk Reduction Proposal  
**Date:** Tuesday, May 28, 2013 1:19:51 AM

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Hello, as a concerned citizen, I propose that pumping water from aquifers, and redirecting other water sources into areas that are fire prone is a much safer alternative to the methods proposed in the Executive Summary. Safe in terms of the biological health of citizens and environmental health. There are several additional benefits.

- Increased Income from Tourism
- Reduced Carbon Dioxide Due To New Vegetation
- Long Term Reduction In Fire Risks

Please consider saving our beautiful state in the long term. Americans are counting on your trust and integrity.

Best Regards,  
James Orman





TO: FEMA [EBH-EIS-FEMA-RIX@fema.dhs.gov](mailto:EBH-EIS-FEMA-RIX@fema.dhs.gov),

FAX: (510) 627-7147

FROM: Catherine Orozco

RE: DRAFT EIS EBH

East Bay Residents are delighted that FEMA is considering proposals to reduce fire risk in our area. Unfortunately, proposals in the Draft EIS are completely unacceptable. The stated purpose of the project is to substantially reduce hazardous fire risk to people and structures in the East Bay Hills and the vicinity of Miller/Knox Regional Shoreline. If the only objective were to reduce fire risk, one could remove all trees and plants and cover the ground with concrete. Of course, that is ridiculous because there are other concerns--biological resources; soils; water resources; air quality; climate and micro-climate; aesthetics, visual quality and recreation; and human and environmental health, and the current proposal fails to adequately address these concerns.

The UC application proposes to cut down 54,000 non-native trees in Strawberry Canyon, Claremont Canyon and Frowning Ridge. While the stated goal is to allow the forest to convert from a eucalyptus-dominated, non-native forest to a native forest of California bay laurel, oak, big-leaf maple, California buckeye, California hazelnut, and other native tree and shrub species, there is no plan for planting native trees, and it is likely that highly flammable invasive species such as scotch broom would take over. While UC states that native species provide less fuel to potential wildfires than the non-native species, the native bay trees provide as much fuel as the eucalyptus. I suggest a preferable plan is to thin dense areas, remove lower limbs from remaining trees and clean up all woody debris on the ground.

UC's proposal to leave two feet deep of wood chips creates an extreme fire danger--EBRPD's plan to leave 4 inches of chips is much safer. Furthermore, there is no evidence that the chips would decompose in 5 years in the East Bay climate.

I am troubled by the effects of the project and do not believe the mitigations are adequate. There will be increased potential for soil erosion and landslides. The best management practices do not eliminate these dangers.

1. Soil. The soil will be damaged by decomposing wood chips. There will be sedimentation of streams and water bodies during and after implementation, regardless of the mitigation. Herbicides will reach streams and water bodies in storm water runoff, even if minimized by best management practices and use restrictions near water.
2. Air pollution. There will be air pollution during pile burning and broadcast burning of cut vegetation, including carbon monoxide emissions exceeding the California Air Resources Board de minimis threshold for general conformity. The FEMA Draft vegetation management project does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis uses an inappropriate baseline and fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects.
3. Climate and Microclimate—carbon dioxide will be created during pile burning of cut vegetation and broadcast burning in a few project areas.
4. Aesthetics, Visual Quality and Recreation. I love the tall graceful eucalyptus. Humans enjoy walking and hiking in the forests. The dry wood chip covered hills and land will be nothing less than ugly. Please consider the environment—with no plans for planting—what will we have?
5. Health There is great potential adverse health effects of herbicides on vegetation management workers, nearby residents, and users of parks and open space, even given the mitigated restrictions and management practices. The FEMA Draft EIS does not adequately address the cost or the risks associated with the herbicide use that is being proposed. It must consider all the implications of the expected herbicide use to kill trees and the resulting hemlock, broom, thistle, and poison oak that will emerge after the loss of shade canopy.

In light of the negative effects the current proposal would have on biological resources, fire and fuels, climate, aesthetics and visual quality, and recreation, I urge FEMA to require modifications of the proposed actions as a condition of funding the applications.

I believe the EIS should require a far less destructive methodology that focuses on eliminating ground fuels and the fire ladder, thinning where appropriate, and limbing up as needed to ensure minimal risk of crown fires. Killing more than 50,000 trees and poisoning them for up to 10 years will have disastrous effects on this beautiful and healthy ecosystem, and cannot be allowed to happen.



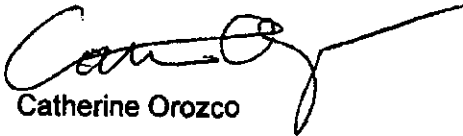
I also believe the FEMA Draft EIS vegetation management project is unacceptable because it does not meet its own stated goal of reducing flame lengths to 2 feet. The proposed treatments will result in an environment with flame lengths of between 14 feet and 69 feet. This flame length is worse than what could be expected with the trees that exist currently. I urge you to retract the EIS and rework it to develop a proposal that actually fixes the problem.

The FEMA Draft EIS vegetation management project is unacceptable because it does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

The FEMA Draft EIS is unacceptable because it relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that will exist the day after some 100,000 trees are cut. This is a meaningless comparison, as the EIS does not specify any means by which the project proponents will maintain the environment in this condition. Because of this, shortly after the projects are completed the fire danger will begin to increase. The Draft does not compare the current risk to the risk that would exist 2-5 years from now if the trees were cut down and the earth was covered with 2 feet of eucalyptus chips and scotch broom, thistles and other high fire ground growth.

I submit there are better solutions for fire prevention than clear-cutting acres of UC land and covering it with w feet of wood chips and herbicides. I urge you to require revision of the plan. In light of the negative effects the current proposal would have on biological resources, fire and fuels, climate, aesthetics and visual quality, and recreation, I urge FEMA to require modifications of the proposed actions as a condition of funding the applications.

Respectfully,



Catherine Orozco

208 Panoramic Way

Berkeley, CA 94704

**From:** [Karen Perkins](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Removal of 80,000 trees in the East Bay Hills  
**Date:** Sunday, June 16, 2013 11:40:57 PM

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Dear Fema,

I am opposed to the proposed plan to cut down thousands of non native trees in the Berkeley and Oakland hills. As someone who lived in the Hills after the firestorm in 1991, I know that the fire department's continual monitoring of the Hills and requirements for us to keep grasses cut, lower tree branches pruned and other fire safety measures have been effective in preventing another severe fire. The devastation that removal of all non native trees will cause to our Regional Parks, along with UC Berkeley and Oakland plans for tree removal, will leave our most beautiful Parks and greenbelt areas barren and unprotected from soil erosion as well as additional fire hazards from lack of shade and moisture given by the non native trees. In addition, as the environmental engineering company, URS, has written, "Monterey Pine and Acacia trees in the treatment area only pose a substantial fire danger when growing within a eucalyptus forest." They also write that the Eucalyptus wood chips up to 2 feet in depth that would be left also pose a fire danger. If Eucalyptus trees and dead, dying or dangerous trees of other species must be removed for fire safety then they should be removed. But this massive cutting down of healthy trees followed by a massive use of toxic herbicides is a danger to us, our children and pets.

I believe a less drastic plan would result in a safer and more aesthetic result. As someone who greatly enjoys the beauty of our greenbelt areas and Regional Parks, I hope this plan will not be approved in its present form.

Sincerely,  
Karen Perkins

**From:** [Jean Pfann](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EBH-EIS : objections to the proposed plan  
**Date:** Wednesday, June 12, 2013 11:27:22 AM

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Dear Sirs:

I was shocked and horrified to learn of the proposed plan by FEMA for reducing the risk of fire in the East Bay Hills. From what I understand of it, this plan intends to reduce the risk of damage by fire, by doing the damage ahead of time. The mess that is proposed to be made would take longer for the hills to recover from, than an actual fire.

- 1) Wholesale clearcutting of non-native trees over a wide area, all at once, is a drastic destructive act that will be devastating to wildlife in the area. Wildlife will have no way to adapt. The eco-system will be changed, and nothing is proposed that would lead to an improved eco-system in the future. Quite the reverse: for the next ten years at least, the environment would be continuously degraded by the application of pesticide, and scattering of wood chips.
- 2) There is a problem of the environment being overwhelmed by non-native species, but the total elimination of non-native trees is a gross over-reaction, and a wrong policy. Eucalyptus and Monterey pine are both beautiful, useful trees, both for the enjoyment of people, and for wildlife. Eucalyptus in particular is valuable for the wildlife that we have here. Native oaks are desirable, but eucalyptus and pine have special virtues: beauty, climate maintenance, soil protection, wildlife habitat. I would be sorrowful and angry if my favorite stands of eucalyptus were eliminated. Cutting down these trees would lead to their eventual replacement by brittle, fire-attracting non-native shrubs and plants like broom and star thistle.
- 3) Trees are essential to the health of the bay area eco-system. They provide shelter and shade, prevent drying out of the soil, protect native plants in the understory. The tallest trees also provide substantial fog drip, which captures essential moisture, and reduces the fire danger. Trees improve the climate and help keep the bay area cool and comfortable. Eliminating large numbers of trees all at once will drastically change the ecological and aesthetic character of the East Bay for a long time.
- 4) I fiercely object to any plan that requires the use of herbicides, especially the extremely toxic ones that are proposed. I and many other people in the affected area have spent their whole lives advocating for organic farming and gardening practices. How can you think we will accept plan to dump huge volumes of herbicides over such a wide area of this "green" community.
- 5) No plan has been made to provide for a better, healthier, more fire-proof environment in the future. The plan is essentially a scorched-earth policy. Either total suppression of growth by scattering chips and herbicides, and after, the most likely replacement will be non-native weed plants like star thistle and broom, already a nasty pernicious problem.
- 6) The plan will lead to irreversible soil erosion, clogging of streams, and damage to the health of the water drainage system. The danger of

landslide will increase.

7) The cutting and burning or slow decomposition of a forest of trees will be a big negative contribution to the greenhouse gas problem that is destroying our planet.

Besides these objections to the plan, based on its ineffectiveness in meeting the long-term goal, and bad side effects, I also object that there are better alternatives, that will meet the goal more effectively, and make positive, rather than negative progress towards a healthier eco-system:

- 1) Thin, rather than raze big stands of trees. Concentrate efforts on brush reduction near roads and houses.
- 2) Aim to preserve the best stands of eucalyptus. Leave Monterey Pines alone unless they are sickly or too close to houses.
- 3) Use no herbicides
- 4) Cutting should be mitigated by planting of more desirable species: shrubs, trees, and native understorey plants that will be damaged by the fire-prevention activity.
- 5) Concentrate cutting effort on eliminating broom and other trash non-native weeds, by supporting replacement of native, fire-resistant shrubs and trees.

This alternative would have the added benefit of putting more money into the local labor economy, instead of into chemical mega-corporations which are already too powerful.

Yours truly,

Jean Pfann

**From:** [Rondi.Phillips](mailto:Rondi.Phillips)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** FLAWED FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects  
**Date:** Thursday, June 06, 2013 10:26:19 AM

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Dear FEMA Representatives,

I am astonished and greatly concerned after learning about the FEMA draft to cut down 100,000 trees in the Oakland and Berkeley Hills. This, I believe, would be a HUGE mistake! For the reasons listed below, please reconsider this draft and continue to look for alternative measures.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately address the effects of these projects on Greenhouse Gas emissions and the ongoing reduction in carbon sequestration capacity. The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. We ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees.

The FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written in that it does not adequately address the cost or the risks associated with the herbicide use that is being proposed. We ask that you retract the EIS and rework it to fully consider all the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately analyze reasonable alternatives proposed for fire risk mitigation. Far less costly, far less environmentally damaging, and far more effective methods have been proposed, but the EIS fails to consider them. The EIS needs to be retracted and reworked to analyze reasonable alternatives rather than simply dismissing them without any serious analysis.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it does not adequately the effects on air quality resulting from the proposed plan. We ask that you retract the EIS and rework it to fully consider all the implications of the proposed projects on air quality.

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it relies on a fire model that is fundamentally flawed in that it compares the risk of the current environment with the environment that would exist the day after 100k+ trees are cut. This is a meaningless comparison as the EIS does not specify any means by which the project proponents will maintain the environment in this state. Because of this, shortly after the projects are completed, the fire danger will increase as more flammable weed/brush and tall grass vegetation takes hold. Because of this, we ask that you retract the EIS and rework it to modify the fire modeling to compare the current state to the expected new equilibrium state, not a completely meaningless state.

Sincerely yours,  
Rondi Phillips

**From:** [stuart\\_phillips](mailto:stuart_phillips)  
**To:** [tklatt@berkeley.edu](mailto:tklatt@berkeley.edu); [EBH-EIS-FEMA-RIX](#)  
**Subject:** DO NOT CUT ANY TREES IN OAKLAND/BERKELEY CA EVER!  
**Date:** Saturday, May 18, 2013 2:06:04 PM

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DO NOT CUT ANY TREES WHATSOEVER IN BERKELEY, OAKLAND, OR ANYWHERE IN THE BAY AREA OF CALIFORNIA, EVER!! THESE MISGUIDED PROJECTS WOULD ACTUALLY EXACERBATE FIRE BY DRYING OUT SOIL, HEATING UP GROUND, CREATING MORE FLOOD & MUDSLIDE PRONE AREAS WHERE CUT, INCREASING HEAT TO AREA.

TREES SHADE, MOISTEN SOIL, KEEP WATER FROM RUNNING AWAY, KEEP SOILS INTACT, PROVIDE WILDLIFE & QUALITY OF LIFE HABITAT, SHADE ENVIRONMENT, CLEAN AIR.

DO NOT CUT ANY TREES IN OUR BAY AREA, EVER, THIS IS A HUGE WASTE OF MONEY THAT DESTROYS OUR LOCAL ENVIRONMENT TOTALLY AT BEST!

stu lips, oakland, ca

**From:** [Susan Purtle](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** cutting of trees  
**Date:** Wednesday, May 29, 2013 9:32:25 AM

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Please, please stop cutting down our trees, not just around Berkeley but in all surrounding areas. Foxes, mountain lions, etc. are now being seen in areas where they shouldn't be. Their homes are being taken away from them. Their environment is changing so quickly they can't adjust. I'm sure others are sending letters. Please care about our environment and our animals.

Thank you,  
Susan



**From:** [kpyle@sonic.net](mailto:kpyle@sonic.net)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [kpyle@sonic.net](mailto:kpyle@sonic.net)  
**Subject:** East Bay Hills fire risk reduction EIS  
**Date:** Monday, June 17, 2013 8:33:10 AM  
**Attachments:** [How Removing Trees Can Kill You PBS NewsHour.pdf](#)

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Dear Sirs & Madams--

I have been slogging my way through the 3,100+ pages of "Sections" and "Appendixes" and "Summaries" for this plan to remove trees and brush from the East Bay Hills "in order to reduce fire danger to built-up areas." The sheer volume is pretty overwhelming.

And yet, four things very quickly became quite clear on page after page:

(1) EBRPD wants to carry out a reasonable vegetation-control plan that will reduce fire danger with the least possible impact on wildlife and East Bay residents (which is commendable).

(2) UC wants to turn its areas into weed-filled wastelands, which will make it much easier for the University to build on the land and/or sell to developers who will build there, and its plan includes heavy use of herbicides (all of which is NOT so good for hillside stability, local native vegetation and the wildlife that depends on it, or the surrounding human population).

(3) Whoever wrote this proposal is practiced in the art of setting up false choices -- for example, summarily labeling ALL of the public's suggestions as unreasonable/impractical, then saying the ONLY choice is to do nothing or accept the UC/EBRPD/Oakland plans exactly as submitted....which is obviously NOT true.

(4) Or perhaps whoever wrote this proposal is simply oblivious to how important trees are (for both people and wildlife) in this region where many hillsides display nothing but dead grass for much of the year [see attached PBS News Hour article for more about this].

I trust that you will see through all the false limitations, misleading assumptions, and other mistakes that are scattered through this set of documents, and help us all reach some sort of reasonable compromise.

Katherine Pyle  
2209 McGee Ave  
Berkeley, CA 94703

**From:** [William Quarles](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comment on trees  
**Date:** Friday, June 14, 2013 11:31:51 AM

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## **Cutting the Eucalyptus Trees without Replanting Natives is a Bad Idea**

About a half million trees are slated for removal from UC Berkeley, Oakland, and East Bay Regional Parks. Eucalyptus, pine, and acacia will be removed. Sprouting from stumps will be prevented by repeated applications of triclopyr (Garlon). This is a 2,4-D analog and many gallons will be used because of the large number of cut trees. According to the Environmental Impact Statement, Garlon is soluble in water and is toxic to tadpoles and to aquatic invertebrates. It could contaminate water. It is a moderate risk for bioaccumulation (MSDS Garlon 4). Another proposed herbicide imazapyr (Stalker) is persistent and moves in soil. It could also contaminate water (Appendix L EIR).

The cut trees will be shredded and UC plans a layer of about 24 inches of chips. East Bay Parks, about 6-12 inches. This represents a large amount of carbon, and will immobilize all the nitrogen in the soil where applied. It will take a long time to degrade (Waksman 1952).

No replantings of anything are planned. Disturbances of this type favor invasive weeds, not natives. Probable colonizers are pepperweed, *Lepidium latifolium*; yellow starthistle, *Centaurea solstitialis*; pigweed, *Amaranthus palmeri*; lambsquarters, *Chenopodium album*; Scotch Broom, *Cytisus scoparius*, and other invasive species (James et al. 1991; Radosevich and Holt 1984; Woo et al. 1999). East Bay Parks already has a large infestation of Scotch Broom (Woo et al. 2004). Likely, thistles and other sun loving weeds will proliferate. To counter this, UC and East Bay Parks plan widespread use of glyphosate (Roundup). Widespread use of glyphosate will contaminate water, and probably kill amphibians (Relyea 2005). It is supposed to bind to the soil, but where it is used, it ends up in streams. In some areas, glyphosate ends up in 69% of surface waters tested (Chang et al. 2011; USGS 2008). Other problems with Roundup can be found at [www.birc.org/MarApr2011.pdf](http://www.birc.org/MarApr2011.pdf)

Unless natives are planted, it is not likely they will naturally repopulate the area. In Iowa where they have a large native restoration program along the

roadside, they do not rely on the seedbank. They cut and burn invasive weeds and plant natives (Harper Lore and Wilson 2000).

In many cases, the native seedbank may be depleted near the eucalyptus. Eucalyptus trees have been there more than 100 years. Some natives, such as oak trees, are in decline due to sudden oak death. Even if oaks and other native trees emerge, there will be a long interval of time where slopes will be susceptible to mud slides and erosion because there will be no trees.

In terms of fire hazard, it is likely that it will be greater after the trees are gone. Grasses will be the initial colonizers where trees are cut. The last Oakland Hills fire started in grasses, not eucalyptus trees. It would seem also, that wood chips and chopped up trees might be more of a hazard than intact ones because of the larger surface area.

Removal of all these trees will at least in the short term put birds and raptors at risk. Where will they nest? Will artificial raptor perches have to be provided?

The cost and environmental risk from this kind of widespread disturbance far exceeds the gain. If the idea is to replace eucalyptus, trees should be cut gradually and native trees should be replanted.

Sincerely,

William Quarles, Ph.D.

Bio-Integral Resource Center

## **References**

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**From:** [Rachael Walker](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** East Bay Hills  
**Date:** Monday, June 17, 2013 11:01:41 AM

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Dear Fema,

I am a resident of the Bay Area and would be devastated to see the trees in the Oakland Hills destroyed.

I'm asking you not to fund a futile Native Plant restoration project that will only increase the fire hazard by:

Destroying the wind-break;

Converting living trees into dead fuel on the ground;

Reducing landscape moisture from fog drip during the summer; and

Encouraging the growth of more-flammable plants.

It will also use thousands of gallons of toxic pesticides on steep hillsides where they can get into the watershed. It will release carbon emissions on a huge scale. This project is not only environmentally destructive, it is a waste of funds that should be used to actually reduce hazards, not increase them.

Not only will the deforestation increase fire likelihood, it would also further destroy the last nature we have in the Bay area- Urbanization is ever more present, and it is our duty to preserve the trees we have left.

I sincerely encourage you not to proceed with this plan and to back the No Project Alternative.

A concerned citizen,  
Rachael Walker

**From:** [Radmila Raikow](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** planned removal of Eucalyptus trees around Wild Cat Canyon Park  
**Date:** Sunday, May 19, 2013 7:26:46 PM

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Please do NOT try to remove the Eucalyptus trees around Wild Cat Canyon Park quickly and cheaply! Doing so will make things a lot worse and even increase fire danger. I agree with the points made by my neighbor, Indigo Dutton. These trees, although non-native, now provide wind and soil erosion control. We need to replace them gradually with native trees. Burning and use of pesticide is definitely not called for and will harm our environment! R. Raikow at 5871 McBryde Ave.

**From:** [Ethan Ramirez](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Against current East Bay hills fire mitigation proposal: I want revision or no action  
**Date:** Sunday, June 16, 2013 10:26:36 PM

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Dear FEMA,

I am against this proposal.

I am a long time resident of the East Bay and frequent visitor to the Berkeley hills. I am firmly against any federal money being given to UC Berkeley to cut down trees and poison the land for ten years, even if they are non-native. I believe that their are much less damaging ways to insure the stated objective: fire mitigation. Clearing ground fuels and thinning trees is a much more preferred and widely used alternative. Essentially clear cutting and not replanting native trees, especially when UC Berkeley has a long term expansion plan into that area, makes their proposal seem like a ploy to use public tax dollars to do their dirty work. Everyone from the Berkeley knows that UC Berkeley cares very little about native trees when they want to expand ex. stadium expansion.

Moreover, the EIS stated that the chemicals used will potentially harm the environment, surrounding community, hikers, and site maintenance workers. I believe that FEMA has a responsibility to protect the community in the safest way possible. Seeing statements such as that on an EIS should be unacceptable for those that run FEMA.

I urge you to continue extensive research into what is the most viable option for fire prevention control in the Berkeley Oakland hills prior to executing the plan as it currently stands.

Is removal of the non-native Eucalyptus truly the best answer to this serious issue?

Will these plots without vegetation truly prevent fire from spreading?

The local fire department has contained fires in the hills since 1991 successfully. That's 22 years without any major threat to communities living in the hills. They have learned how best to handle fires through continued extensive training. Their mistakes of the past have pushed them to where they are now, able to successfully control fire in the area. Additionally, those that choose to live in such close proximity to this potential threat have begun to better educate themselves and are continuing to take better preventative fire control measures around their properties.

And of more concern to me, why is the plan to use toxic chemicals such as RoundUp to prevent future growth? These are protected lands free from major industrialization and commercialization. Please seriously consider alternatives to chemical based herbicides and pesticides. States such as Massachusetts and Oregon have had similar needs for such research and have found positive results for their areas. We would need to conduct similar research to ascertain what could work in this area - let's do it! Please see this document for information regarding what Massachusetts found in it's research:[http://www.mhd.state.ma.us/downloads/vmp/Herbicide\\_Alternatives.pdf](http://www.mhd.state.ma.us/downloads/vmp/Herbicide_Alternatives.pdf). And this for Oregon:<http://www.corvallisoregon.gov/modules/showdocument.aspx?documentid=4567>

I am strongly opposed to this project moving forward.

Thank you for your time.

Sincerely,

Ethan P. Ramirez



**From:** [Meehan Rasch](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EBH-EIS  
**Date:** Monday, June 03, 2013 5:05:40 PM

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What's the carbon storage impact of removing so many large trees? I favor natives over eucalyptus, and read an EPA report that in the early stages of growth, trees store carbon rapidly; consequently, as tree growth slows, so does carbon sequestration (see <http://www.epa.gov/climatechange/waste/downloads/Forest%20Carbon%20Storage.pdf> ). But does it actually pencil out to remove big trees that have stored decades worth of carbon and replace with younger natives in early stage of growth?

**From:** [Rebecca](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EIS Hazard Reduction Plan  
**Date:** Saturday, May 18, 2013 12:50:43 AM

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Dear FEMA,

I am writing today as a Berkeley resident who lives directly downstream from Strawberry Creek and works next door to Strawberry Creek Park, in strong disagreement and opposition to the plan to deforest this area. There are several important reasons not to allow this plan to go through, including:

1. These projects would permanently alter the Berkeley/Oakland hills ecosystem. UC and Oakland will clearcut tens of thousands of mature, healthy trees, some more than 100 feet tall and more than 100 years old. You won't see tall trees in the hills any more. What you will see, as soon as the rain stops, will be weeds and highly flammable brush, brown, dry, and ready to burst into flame.
2. The fire danger would be increased. The landscape would be transformed to easily ignitable chaparral (including scrub oaks), weeds, grass, hemlock, thistle and broom. Why will it burn more easily than trees? Because it is lower to the ground and dry as kindling. Thick trunks don't burn easily, and fire does not reach the crowns of trees unless there are ladder fuels (like weeds, grass, etc. under them).
3. When local matching funds are included, over 7 million dollars of taxpayer money would be wasted on destroying forests miles away from any residences. This is money that could and should have been spent on creating defensible space around houses and other structures, which is what FEMA originally intended that it be used for.
4. To prevent trees from resprouting, the hills would be drenched with massive amounts (30,000 + gallons) of toxic pesticides. In addition, pesticides will be sprayed throughout the watershed to knock down the weeds, hemlock, poison oak, thistle and broom that will emerge with the loss of canopy. Toxic sediments will seep into our creeks and could permanently alter the watershed. Garlon causes cancer and so does glyphosate (Roundup) when sprayed broadcast over large areas. Tons of pesticides will be needed to maintain the site—to kill the weeds—after the trees are removed. Making matters worse, UCB has not posted signs when pesticides are sprayed.
5. Trees would be chipped on site, leaving up to 24 inches of chip litter on the ground. Additional risks: The danger of subterranean fire under the chips, as well as spontaneous ignition in the hot sun. Worst of all, this approach has been shown to not work, with massive invasion of hemlock, thistle, broom and poison oak where it

has been tried.

6. An enormous amount of habitat would be destroyed; the tall trees favored by raptors such as owls and hawks would be lost forever. Without raptors to keep them in check, the rodent population will undoubtedly increase. We saw this after the 1991 fire. And what about the federally protected Alameda whipsnake? These shy, easily frightened creatures will not endure being trapped and moved away until these projects have been completed.

7. Without tree roots to hold the soil in place, erosion and landslides will increase.

8. Significant amounts of sequestered CO<sub>2</sub> will be released, adding not only to global warming, but also to local climate changes: more wind, more dry air, less fog, more air pollution. Big trees are needed to store carbon. No other type of vegetation stores as much carbon as tall hardwood trees. Ongoing carbon sequestration capabilities will be reduced from what they are now, and will never recover.

9. Visual blight, daily road closures, and constant chainsaw noise for 3 years will accompany these projects that are the most expensive, wasteful and ineffective way to reduce the potential for fire in our hills.

10. HCN has proposed an alternative that is less expensive, less environmentally destructive, and more effective at reducing the risk of fire. Alternatives were dismissed out of hand. We want FEMA to consider less destructive alternatives. The natural environment and the landscape that we love are at stake.

11. The fire model is wrong. It compares the fire danger of standing forests with the fire danger (zero) after the trees are cut down to stumps. It does not consider the fire risk danger—much worse—of what will replace the trees.

12. Fostering the growth of native plants such as bay trees, chaparral and oaks is native plant restoration. It has nothing to do with fire risk mitigation.

Thank you for your time,

Rebecca Sang

Berkeley, CA

Sent from an itty bitty little sending machine

**From:** [Tom Reich](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** my comment regarding east bay hill tree removal  
**Date:** Monday, June 17, 2013 9:43:53 PM

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To whom it may concern,  
I understand that I may comment regarding the planned tree removal in the east bay up until the end of June 17th.

I am:  
Tom Reich  
9 Diablo Drive,  
Oakland CA 94611

My comments are:

1. I agree that all eucalyptus should be removed from the east bay hills.
  2. I agree that Garlon should be used to kill eucalyptus stumps, but only if painted onto the stumps, not sprayed onto foliage at any time. I personally painted a Garlon -like product (same active ingredient) on over 40 eucalyptus trunks on my and my neighbor's properties this past Feb. I got a 75% kill rate. I bought a colony of bees and set them up in my yard in April, with no kill to the bees. However, I did not spray foliage.
  3. I believe the 'cut anything that is not native' is arbitrary and will lead to de forestation of the hills. I argue for maintaing existing trees where practical and fire danger isn't high.
  4. I believe that Monterey Pines over 30 feet tall should remain in the parks, but thinned where practical. I realize that there is a risk of crown fires, and that these large trees drop very large branches in winter storms. But I believe they are a valuable home and protection for other plants and animals. Also, over the next 20 - 30 years they will mostly die and there will be a natural transition in the parks.
  5. I strongly believe that what I will call "specimen" trees, should not be cut. For example the Monterey Cypress in Sibley park, along Skyline Blvd. should remain, as should the 2 very large trees at the entrance to Sibley (Atlas cedar and a 2nd cypress.) Similarly, sycamore trees should remain where planted. In Sibley and elsewhere, many trees have been tagged and numbered (small metal tags). Note that some specimen trees in the parks are highly unusual. For example the Santa Lucia Firs across the street from Tilden Park golf course are unique. (There is speculation that these were planted by Willis Jepson.) Extra care should be taken not to cut specimen trees.
  6. Coastal redwoods should be planted where ever feasible in parks. Redwoods are native to the east bay hills. It is well known that they were cut down 150 years ago and never replanted. Best yet, redwoods are fire resistant. (2 fire scarred trees remain on Broadway terrace where all houses were burned in 1991.)
  7. Besides redwoods, other Native shrubs and trees should be planted in areas stripped of eucalyptus, especially 1. Madrone, 2. Pallid Manzanita (and other endangered species) 3. coffee berry (excellent fast growing and holds hillside soil),
- Please let me know if community groups, or I, could help reforest parks with redwoods and other native plants.  
Please let me know if I can help identify and preserve what I called 'specimen trees.'

Thank you,  
Tom Reich



Re: ~~the proposed~~ Mass Cutting of Eucalyptus  
Trees in the East Bay Hills:


I am deeply opposed to the cutting of the eucalyptus and the poisoning of the earth with thousands of gallons of deadly herbicide. It would be wasteful and harmful, a giant boondoggle at a time when government money is in short supply and <sup>when</sup> "valuable, essential programs are being cut. I moved to the East Bay Hills (Canyon) in 1965 after spending the summer as a U.S. Forest Service fire lookout in Idaho. I have seen fires there and in the Bay Area, and read about them. I have also worked in the area that burned in the 1991 Oakland fire. There has long been disagreement about the role the eucalyptus trees played in that fire. I remember (and agree with) a headline that said the houses, not the trees, spread the fire. Of course, trees burn - all kinds of trees I have seen pine trees "explode" in a fire. Eucalyptus trees are an integral part of our landscape now - they provide oxygen, moisture, shade, habitat and are no more fire-prone than

- A single eucalyptus tree that is 45 feet tall will transpire over 80 gallons of water a day.
- A willow tree will transpire 5,000 gallons of water per day.
- A single tree can provide the same cooling effect as ten room-size air conditioners working twenty hours per day.<sup>32</sup>



# Less Runoff Means Less Water

## Trees Help Control Runoff

provide great beauty. - T.   
for the park service, in my opinion, when they decided to cut down all the eucalyptus at the juncture of Skyline Boulevard and Pinehurst Road, a lookout spot which was one of the most beautiful in the Bay Area. It is now very ordinary, greatly diminished and no safer.

The eucalyptus have been demonized by people who believe they are a greater hazard than other trees and by those who want to get grants and make a lot of money from cutting them down. I've also seen how people use these grants to <sup>enhance their careers</sup> gain political power by deciding who will get the jobs. Jobs are needed badly but not this kind, that results in <sup>the</sup> destruction of nature, especially at a time when our air, water and earth have never been more endangered. Trees, especially large ones, are one of the restorers of the environment. I've seen the grading effect on both the land and the people who do the cutting of many trees. We need to break this chain of disrespect and violence towards living things, which often leads to more fires and other damage. No cutting or herbicides!

261\_Reime\_Nancy, Nancy Reime

**From:** [Jill Reinier](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** please do not cut down the trees  
**Date:** Saturday, May 18, 2013 10:17:13 AM

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Dear Sir or Madam,

I grew up in the Berkeley Hills and spent most of my summers in Strawberry Canyon as a child. I beg you to reconsider the plan to remove the trees from the East Bay Hills.

It reminds me of conversations I had in my children's high school after the Newton school shooting this spring. At our PTA meeting, we were seriously discussing the expense of replacing all the glass partitions in a school with bullet-proof panes, even while state and federal budget cuts threatened teaching positions and extra-curricular activities we once took for granted.

Risk is real. And the risk of fire in the East Bay Hills is significant, and should be addressed. But the reduction of risk should be carried out with an awareness of the impact it will have on quality of life at a local level.

As children growing up in the East Bay hills, we were always aware of the weather and the potential risk for fire on any given day - and we acted accordingly, changing our behavior to adapt to the environment. We were extremely careful about fire hazards, and vigilant for other people's tossed cigarettes.

Instead of "removing" the living environment and replacing it with wood-chips and fireproof stone, we must educate residents to regulate their behavior and serve as stewards of a living environment. We need to consider clear-cutting and maintaining fire blocks near residential areas, but should always prioritize all forms of life in areas that are still undeveloped.

If it turns out that this measure is just the first step towards developing the Hills, then it should be discussed openly and honestly with the community. Otherwise governing agencies lose the trust of the people.

I sincerely hope that these grants to UC Berkeley are not funded, or - if funded - implemented with sustained monitoring of local impact on quality of life, and meaningful community involvement at the planning stages.

Thank you.

- Jill Reinier, deep-rooted native of Berkeley, California



**From:** [renay davis](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Berkeley/Oakland Tree Cutting!  
**Date:** Sunday, June 02, 2013 9:55:49 AM

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June 2, 2013

The real hazard of your proposed fire hazard reduction "project" will be to the environment: by removing the very things that work to keep the climate cooler (hence helping to prevent fires and the over-heating of the planet) TREES. Trees that house birds and animals and the bees that pollinate our crops.

I suggest we put people to work helping property owners, including UC Berkeley, take sensible steps, like clearing brush and trimming trees, replacing flammable roofing, creating defensible perimeters, to make their properties safer.

This "plan" to remove 85,000 trees to save property sounds like a diabolical, sci-fi movie plot, not something produced by sound minds.

Surely, a university of the supposed stature of UC Berkeley has minds capable of coming up with a plan that does not include destroying the environment to save it!

Renay Davis, concerned resident of Planet Earth  
3964 26th Street  
San Francisco, CA 94131  
415-845-4498  
parent of UC Berkeley & UC Santa Barbara Alumnae

**From:** [Michelle Reyes](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Berkeley/Oakland Hills Fire Prevention Proposal  
**Date:** Monday, June 03, 2013 11:16:02 AM

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Dear FEMA,

I was born and raised in Contra Costa County, and have been living in San Francisco for eight years. I am a graduate student at the Presidio Graduate School, pursuing a Masters of Business Administration in Sustainable Management. The Bay Area is an amazing place to live, and this is supported by the people who live here. These people may be at risk based on your proposal to distribute toxic chemicals into the Berkeley and Oakland Hills. I urge you to continue extensive research into what is the most viable option for fire prevention control prior to executing the plan as it currently stands.

Is removal of the non-native Eucalyptus truly the best answer to this serious issue?

Will these plots without vegetation truly prevent fire from spreading?

The local fire department has contained fires in the hills since 1991 successfully. That's 22 years without any major threat to communities living in the hills. They have learned how best to handle fires through continued extensive training. Their mistakes of the past have pushed them to where they are now, able to successfully control fire in the area. Additionally, those that choose to live in such close proximity to this potential threat have begun to better educate themselves and are continuing to take better preventative fire control measures around their properties.

If it comes to light through extensive research that the removal of these non-native species is warranted, then why is there no plan to plant native species?

And of more concern to me, why is the plan to use toxic chemicals such as RoundUp to prevent future growth? These are protected lands free from major industrialization and commercialization. Please seriously consider alternatives to chemical based herbicides and pesticides. States such as Massachusetts and Oregon have had similar needs for such research and have found positive results for their areas. We would need to conduct similar research to ascertain what could work in this area - let's do it! Please see this document for information regarding what Massachusetts found in it's research: [http://www.mhd.state.ma.us/downloads/vmp/Herbicide\\_Alternatives.pdf](http://www.mhd.state.ma.us/downloads/vmp/Herbicide_Alternatives.pdf). And this for Oregon: <http://www.corvallisoregon.gov/modules/showdocument.aspx?documentid=4567>

We cannot simply take what appears to be the easiest route. The plan as it currently stands will have long term effects on not only human health, but also animal habitats. Water and air quality will potentially be effected. People who walk the surrounding trails will be much less likely to visit, etc.

In all honesty none of us truly know the effects of what will happen. And that is really my point. A lot more research is needed before moving forward with this project. Who will be effected, man and animal? How will water be effected? How will air be effected? Where will the animals go? And many more questions have not

satisfactorily been answered.

I am strongly opposed to this project moving forward.

Thank you for your time.

Michelle Reyes

--

Michelle L. Reyes

[michellereyes415@gmail.com](mailto:michellereyes415@gmail.com)

(916) 798-6119

LinkedIn: [linkedin.com/in/mlreyes415/](https://www.linkedin.com/in/mlreyes415/)

"Be the change that you want to see in the world" – Mahatma Ghandi

**From:** [deanerimerman](mailto:deanerimerman)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX); [peacefromtrees@gmail.com](mailto:peacefromtrees@gmail.com)  
**Subject:** Official Comments For FEMA EIS for East Bay Hills from Deane Rimerman of OLYecology's Forest Policy Research Project  
**Date:** Monday, June 17, 2013 5:28:11 PM  
**Attachments:** [06c16f9188105dd453d206674edbf2aa249cc8930c897d91a81ed308c64fda0e14aedf433c1fcb5fecc66fd69ccb89f321f1aafb8dbd5b8060db78d15384aa64d692a3e909ee0c194af90d6f70048f78e00083d6ac89d1c620cbef44454aae7626735d53715294fc805d047e9d0194c56a2b7a037b8d865cc3c2b6d6083cfe444](#)

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Official Comments For FEMA EIS for East Bay Hills  
 By Deane Rimerman of  
**OLYecology's Forest Policy Research Project**  
 PO Box 2640 Olympia, WA 98502  
[deanerimerman@gmail.com](mailto:deanerimerman@gmail.com)

Dear EIS decision maker,

This draft EIS as presented is inadequate and must be rewritten in a revised draft if the document is to past legal requirements under NEPA as well as under all associated rules, laws and guidelines. This plan fails to adequately "*evaluate the environmental effects that could occur if specific projects designed to reduce wildfire hazard and risk are implemented.*"

Here's a summary of 12 points that address why this plan as presented is inadequate for FEIS status and must be rewritten and re-presented as a DEIS:

- 1) Additional plant and wildlife surveys prior to, as well as after, ground disturbing activities are not planned for in an actionable or legally credible way. This means that required botanical and wildlife surveys are inadequate and as presented are overly-narrow, which excludes essential information from the decision maker.
- 2) The total amount of all non-native deforestation over time has not been documented in the planning area, nor are future removal plans being documented. That means the required cumulative effects analysis have been completed in an overly-narrow way which deliberately excludes essential information like all locations where previous non-native tree removal led to further negative effects via loss of biodiversity and habitat over time. This is essential information that the decision maker needs to make a decision regarding potential negative environmental effects has not been provided.
- 3) Required range of plan alternatives are not offered and NEPA requires more plan alternatives than the "plan or no plan alternative" that's been presented.
- 4) Protection from herbicide use for ESA listed species such as Steelhead and Red-legged frogs are not being addressed and significantly exceed the limits of allowance for invasive weed removal.
- 5) The plan lacks detailed maps for heavy equipment use on and off roads/trails, as well as detailed yarding and chipping locations for all 105 project areas. Without detailed maps negative impacts such as erosion and the risk of an increase in invasive weeds, especially grasses, can't be adequately analysed by the decision maker.
- 6) Required estimates of the social costs of this project's carbon production (locked up carbon released via tree loss and fossil fuels use from all equipment) @\$45 per ton has not been estimate as per: [http://www.whitehouse.gov/sites/default/files/omb/infoereg/social\\_cost\\_of\\_carbon\\_for\\_ria\\_2013\\_update.pdf](http://www.whitehouse.gov/sites/default/files/omb/infoereg/social_cost_of_carbon_for_ria_2013_update.pdf)
- 7) Long-term recruitment of future large downed logs and future large live and dead snags is not being planned for. This will cause a serious long-term negative impact on wildlife by maintaining a significantly understocked landscape when it comes to future dead wood, snags and large woody debris recruitment.
- 8) The East Bay Hills have been intensively managed for thousands of years for many different kinds of us and the serious fire hazards of 25 years ago have been nearly eliminated. The further removal of naturalized non-native trees / whole forests is not only overkill, it will lead to long term negative effects that have not been accurately estimated or mitigated. This plan as proposed implies that fire-hazard reduction is the primary use of the project area, which means the plans fail to adequately analyze negative effects this project will have on other uses of the project area.

9) The plan lacks mitigation for replanting and wildlife habitat creation, as well as long term surveys for an adaptive management plan that protects native tree and plants before, during and after the project. This is essential to ensuring that biodiversity is improved rather than degraded.

10) There is no valid analysis of associated negative human health effects that this degenerative project will cause, nor does the project seek to propose plan alternatives or mitigations that are generative both socially and ecologically in order to help to mitigate negative effects. For example:

*A team of researchers with the U.S. Forest Service looked at data from 1,296 counties, accounted for the influence of other variables -- things like income, race, and education -- and came to a simple conclusion: Having fewer trees around may be bad for your health. Their findings, published recently in the American Journal of Preventive Medicine, suggest an associative rather than a direct, causal link between the death of trees and the death of humans. Geoffrey Donovan, a research forester at the Forest Service's Pacific Northwest Research Station, joined the NewsHour recently to discuss why.*  
<http://www.pbs.org/newshour/rundown/2013/06/can-lack-of-trees-kill-you-faster.html>

11) The plan lacks a comprehensive planning process that meaningfully engages with the many concerns of neighboring landowners and the greater social community who heavily use these landscapes for recreation, education and spiritual renewal.

THESE ARE HIGH HUMAN USE AREAS, NOT DESOLATE TREE FARMS THAT IF CLEARCUT THE PUBLIC WON'T NOTICE. HUNDREDS OF THOUSANDS OF PEOPLE WILL SEE THIS DESTRUCTION FIRSTHAND AND THE PLAN AS PROPOSED FAILS TO RECOGNIZE THAT / MITIGATE FOR THAT IN A SUBSTANTIVE WAY! WE NEED A MORE GENTLE GRADUAL PLAN ALTERNATIVE THAT IMPROVES BIODIVERSITY, NOT JUST CLEARING THE LAND OF NON-NATIVE FUELS AND HOPING NATIVES GROW BACK ON THEIR OWN.

12) Many more details of what's wrong with the DEIS are mentioned below in my essay, which first appeared on the website <http://milliontrees.me> This essay and all it associated comments beneath it are hereby submitted into the public comment record for this FEMA EIS for the East Bay Hills

Thank you for taking the time to consider all of my comments!

Be well, Deane Rimerman  
360-789-7843  
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<http://milliontrees.me/2013/06/08/guest-article-about-fema-projects-by-a-student-of-the-forest/>

## Guest article about FEMA projects by a student of the forest

JUNE 8, 2013

*A few days ago we received a comment from a fellow tree-lover and student of the forest that deserves our attention. He visited the project areas that may soon be cleared of all non-native trees and expressed his opinion of this planned devastation. With his permission, we are posting his comment as an article.*

tags: environment, eucalyptus destruction, forest management

*His name is Deane Rimerman and he describes himself as "Hybrid Car Geek, PNW Landscape Restorationist, Web Builder, Arborist, Writer, Poem Performer, Life-long Photographer & Audio Engineer" on [his website](#).*

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*Frowning Ridge before "vegetation management"*

Yesterday I toured the Oakland hills for the first time since I visited it a week after the 1991 fires. That torched landscape turned me into a lifelong student of the forest. So after my visit back to those hills yesterday I started reading everything I could about these FEMA plans!

In the interest of providing the most value I'll focus on what's not been mentioned yet in the debates I've read on this website thus far. Primarily it revolves around moisture and the value of tall standing trees for the purpose of capturing fog drip during the dry season.

I once worked with a forester named Rudolph Becking on studies that show 200 foot tall old growth redwoods can capture up to 7 inches of fog drip during the dry season. The biggest tallest eucalyptus, and pines, invasive or not also have the ability to do this. And if we're talking about fire safety don't we want to increase humidity in soil and in the air during the hottest driest times of the year? If the answer is yes, that can be done by protecting sites that are most exposed to fog in the dry season.





*Frowning Ridge after 1,900 trees were removed from 11 acres in 2004*

Also eucalyptus are huge water users only when they are young and exposed to full sun, but like most trees, once in a closed canopy forest they consume far less water during the dry season compared to open canopy forests.

Point being, we need to maintain landscapes that don't dry out because plant and tree diversity won't thrive and really aggressive invasive weeds will take over if we don't intentionally map out and seek to protect the highest existing levels of soil moisture. The SF Bay Area climate is very arid. If a time of drought were to coincide with this fire hazard removal plan, we could have a mass die-off native species and an even greater shift to drought tolerant non-native weeds that will eliminate most biodiversity.

And regardless of drought, desert like alterations to the landscape is what happens when we lose too much shade and moisture all at once. Many native plants growing under semi-shade conditions right now can't survive if all the non-natives are clearcut or near clearcut as proposed in this plan.

Also what is missing from this landscape is lots of tall dead trees that act as bioreactors for flora fauna and rhizo diversity. Tall dead trees are like a bank account for future healthy soil, homes for so many birds and bugs too. There is a great poverty of standing deadwood on this landscape, yet no significant mention of snag retention and snag creation in this plan. If we cut down all the largest live and dead standing trees there will be no large downed log recruitment for another century and that would be a misguided tragedy that will further impoverish the soil.

In a word: DIVERSITY. You don't have to cut down all the trees to increase diversity. We could have thousands of us spending every winter in these hills replanting hundreds of different species of native plants, as well as clearing weeds away from existing native plants in a low-impact site-specific way. This of course is a labor intensive approach and humans have been manipulating these hills for thousands of years in very labor intensive ways.

In my view we've neglected these lands for too long and it's about time we get back to all of us working together as volunteers meant to cultivate a garden of biodiversity with an eye toward carbon absorption and keeping as high as possible soil moisture and air moisture in order to prevent catastrophic fires.

But instead in this plan we see the usual lazy, super aggressive approach in which a forester, whose job is to cut down forests, is asked to solve our problems. And without any site-specific observation of fog drip and areas of high soil moisture in the dry season we log the forests as quickly and cheaply as possible thinking if we do it severely enough we won't ever have to come in and fix anything ever again.

The homeowner version of these two approaches is akin to one homeowner who makes their landscape beautiful with hard work and lots of hands-on low impact cultivation of plant and tree diversity without herbicides. And then we have the other lazy homeowner who hates his yard and weedwacks his yard to bare ground every other year thinking once he does it one more time (and even more severely this time

with extra herbicide) he won't ever have to do it again.

And habitat-wise, if we inoculate eucalyptus and pine with heart wood rot to create cavities for habitat we will help fuel the whole food chain, not to mention create homes for myriad species.

And to all the folks who say these hills were mostly shrub oak and grassland I say that natural ecosystems in this region were mosaics of conifer and hardwood woodlands amongst mosaics of shrublands and small grassy meadows and it was all maintained by humans who for thousands of years used fire to maximize productivity in traditional cultivation areas. Those cultivation practices were based on specific sites where species grew best. The current plan as proposed is the antithesis of this. The current plan treats the whole landscape as if there's very little variability of moisture levels and species compositions. It's as if the planners know more about growing corn in Iowa than they do about growing an ecosystem in the arid San Francisco Bay Area.



Frowning Ridge 2013

Lastly, the Monterey Pine is entirely native to a landscape that's less than 100 miles away. And yes some of these pines might be a hybridized New Zealand variety but so what?

I'll have more to say on all this soon... Maybe a whole website or book perhaps? 😊

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Remember that public comments are due by June 17, 2013. You may submit written comments in several ways:

1. Via the project website: <http://ebheis.cdmims.com>
2. By email: [EBH-EIS-FEMA-RIX@fema.dhs.gov](mailto:EBH-EIS-FEMA-RIX@fema.dhs.gov)
3. By mail: P.O. Box 72379, Oakland, CA 94612-8579
4. By fax: 510-627-7147

These public lands belong to you and the money that will be used to implement these projects is your tax dollars. So, please tell the people who work for you what you think of these projects.

mycophile PERMALINK  
June 8, 2013 3:17 pm



It's a real shame that Californians are stuck with having to debate the pros and cons of non-native vegetation because of the past practices of wiping out the native ecosystems. Good luck.

From my knowledge and experience with of the issues in fire ecology, wildfire management, species diversity, public land manager politics/incentives/paradigms, how science is used, how science is abused, Deep Ecology, and else, I find Deane's comments so far to suggest his ability to find paths to clarity in this muddy maelstrom may be as good or better than anyone's, and certainly way better than whomever(s) wrote the FEMA DEIS. I strongly encourage his written thoughts to generate extremely respectful discussion – COLLABORATIVE BRAINSTORMING, not argument only to support pet solutions or to claim him ignorant or overly biased. I know no one has yet posted such derision, but I want to pre-emptively cut it off at the knees.

Like I wrote, you guys are in uncharted waters, here. There is no such thing as an expert on how the use of non-native vegetation to replace (let alone 'improve' upon) the ecosystems of native vegetation can or does or will play out. NO SUCH THING. Be humble, be reflective, be smart. Whatever is done will be an experiment. Two things that should NOT be done are: A) to try things that, should they fail, would foreclose other options, and B) to repeat experiments that repetitively failed in the past

[REPLY](#)



• **tbcrawford** [PERMALINK](#)  
June 8, 2013 3:23 pm

Thank you for very informative and encouraging article. I especially appreciated your call for volunteer opportunities, which I suggested in my FEMA comments...Perhaps we could even consider a low-income jobs opportunity for those who are homeless or close to it. To give people who have next to nothing something to do, a chance to earn some income, has got to be a positive effort in our community!

[REPLY](#)



• **Kenneth Gibson** [PERMALINK](#)  
June 8, 2013 6:09 pm

Deane, Thanks for your article. Today I drove up to the Skyline Staging Area and waked through a bit of Roberts Park into the Redwood Regional Park. To be brief I walked various trails including the Tres Sendas Trail down to the Stream Trail and walked along it as far as the bottom of the Chown Trail. A couple of years ago I walked that stretch of the Stream Trail and noted some newly planted Redwoods standing about 12 to 18 inches

tall. I found them again. Now they are four to eight feet tall. If I can find my old photos I'll try to do a count and growth analysis.

The slopes in Redwood Regional Park between the West Ridge Trail and the Stream Trail are largely covered by redwoods. These are the original fog collectors and they are doing a good job. Small redwoods, growing in the shadow of the second growth trees, show bright green tips of spring growth, about an inch long, on each tiny branch. Since there has been little rain, fog drip gets the credit. The streams themselves show little moisture as they slip both under and over their sandy, rocky beds. The redwoods take advantage of the water there is along the slopes of hills and narrow channels of the creeks.

Along the Skyline Blvd. side of the West Ridge Trail, and in the area where the Redwood Peak Trail and the Madrone Trail meet the West Ridge Trail the eucalyptus predominate. One tree in this area appears mutilated. It is one of the last remaining redwoods! I think the Park District clears this area of underbrush, or the foot traffic does the job. It would be nice to see a few redwoods planted here and fostered for a few years as the "invader" trees are removed. Replacement is better than removal.

[REPLY](#)



**Keith McAllister** [PERMALINK](#)

June 9, 2013 10:28 am

Where were the redwoods in the East Bay?

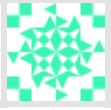
The Oakland Museum's Natural History section has just re-opened after significant remodeling. There is a terrific new item: An inter-active, touch screen computer map of the East Bay's pre-European vegetation. You can look at the map and zoom in or out. If you touch a spot on the map you are told exactly what vegetation was there: oak/grass savannah, grassland, oak/bay forest, redwood forest, coastal scrub, etc. You can easily spend an hour at it without getting bored. Unfortunately you have to go to the museum; it's not available on-line or for download.

And the redwoods? Less than I expected, but still a significant presence. And they were exactly where Kenneth places them now, in creek bottoms and on the east facing slopes of canyons. (More protected from the drying effects of sun and wind?) Not in Claremont Canyon, so the Conservancy's planting there is really

an experiment. And of course not on the steep, dry, west facing slope of Frowning Ridge.

Disclaimer: As an enthusiastic member of the Museum's Natural History Guild, I hope others will be inspired to join.

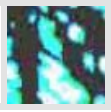
[REPLY](#)



• **linda** [PERMALINK](#)  
June 9, 2013 11:53 am

This is beautiful—a wonderfully clear and well-informed article. I'm forwarding it to friends. Thank you for posting it. Linda

[REPLY](#)



• **armedwithvisions** [PERMALINK](#)  
June 9, 2013 12:39 pm

Thanks everyone for your comments... And great you point this out Keith... Of course it's important to remember that by the time there was photography europeans had already spent a half-century destroying the land and enslaving the indigenous population so those photos are far from what this land looked like for thousands of years when it was actively cultivated. There's a poem I posted that includes a painting of what SF looked like further back before photography, but again the painting was many decades after so much deforestation and enslavement of the traditional peoples. <http://armedwithvisions.com/2012/12/09/kush-ancient-lake-dolores> Point being we have no idea and no way of knowing what these hills once looked like.... Though I have read that old growth Redwood in the hills of Oakland were so huge that according to earliest ship's logs those trees were what they looked for when they navigated up the coast to know where the entry of the SF Bay Area was...

[REPLY](#)



• **Keith McAllister** [PERMALINK](#)  
June 10, 2013 7:02 am

The Oakland Museum's historical vegetation digital map I described above is not a collection of photographs. It's not quite accurate to say we have no idea what these hills looked like when Europeans arrived. We don't have to rely solely on photographs. The Portola expedition had three diarists who described in detail the landscape they encountered in their peregrinations. The first visit to the East Bay was in 1772. Most of Alameda County was granted to Peralta in 1820, and Peralta divided his land among his sons in 1842, all of which involved maps and descriptions of the landscape. (1842 is when full scale logging began in the East Bay.) Diaries, letters, reports to the King of Spain, mission records, etc. all contribute to what we know about the early East Bay. It would be nice to have a set of aerial maps of the East Bay in 1772, but in their absence many historians have put a lot of effort into reconstructing the East Bay's history, including vegetation.

I think you have misremembered the "redwood navigation" story, in which ships used two particular trees to navigate within the Bay, not to find the Bay. I have read that these two trees are still visible in an 1852 photograph taken from Telegraph Hill, but I haven't seen it. They were gone in 1855.

[REPLY](#)



**armedwithvisions** [PERMALINK](#)  
June 10, 2013 12:51 pm

Oooh, that's fascinating Keith... I'd so love to see those navigation trees I've heard

mentioned so often. Is that available at the Museum? Also can you point me to a summarizing narrative of East Bay vegetation that draws on all these documents in an objective way?

[REPLY](#)



**Keith McAllister** [PERMALINK](#)

June 10, 2013 1:57 pm

Well, there's two questions I can't answer. I've only read about the Navigation Trees photo, never actually seen it. The Bancroft Library on the UC campus might be a good place to begin a search. I've always been in awe of the magic reference librarians can perform. As for a vegetation history: Eventually I'll get back to the Oakland Museum and ask who developed their map. Then I can ask them about their sources. You'll probably get to those tasks before I do; please let me know what you find out.

[REPLY](#)



• **Bev Jo** [PERMALINK](#)  
June 10, 2013 1:00 pm

This is brilliant, and I wish everyone could see those tragic photos. We have no idea how many of our native trees will die from Sudden Oak Death. We need every tree we can get, and especially those that have adapted to the dramatic climate changes we are facing.

It is heartbreaking to see trees killed, the landscape left ugly and empty of the wildlife who once lived there. On another site some who wrote in, wanting Eucalyptus dead at any cost, repeat myths and deny what personal experience and photographs show of the incredible variety of animals who nest in, live in, and eat from Eucalyptus. Their bigotry really is reminiscent of the human nativist movement, also ironically led by non-native humans.

Most completely forget the other trees that will be killed, like the Monterey pine and Monterey cypress, which make our parks much more beautiful and with far more species diversity than we'd have with just oak/bay forest, which is darker and drier.

Many people do not seem to know how much of our forests are non-native also, and what we might lose.

The original logging of the Redwoods destroyed many understory species, which can still be seen in second-growth Redwoods in Marin. Some believe it was the heavy machinery, which of course is what is again planned. The earth will be compacted and ruined, with so many native plants and animals killed. Now, we have to travel to Marin to see the Clintonia and Scoliopus lilies, which should be still living under our Redwoods. (I recently heard that one Clintonia was found in the East Bay.) Did we used to have the beautiful Calypso orchids? What all did we lose, and what more will we lose? What about the endangered species?

NO tree should be cut, "thinned," or pruned. There is no need for anything to be done to prevent fires. Let those trees get as tall as they can and we will have more water that we desperately need. When the inevitable fires start (most are from arson), they will start in the grasslands. More trees, less grasslands.

[REPLY](#)



• **Michael** [PERMALINK](#)  
June 14, 2013 4:20 pm

This is a truly complex issue, and because the very act of removing so many trees invokes a visceral

response, it is unlikely that a plan like this could go forward with any semblance of consensus. I appreciate the first comment asking for opinion to be given in a constructive way, rather than an argumentative way.

My opinions here are based both on education and personal/anecdotal experience.

There are a few misleading things on this page which I think should be addressed.

For starters, The title of the page is "Death of a Million Trees" which is in my opinion a bit inflammatory. It could almost as easily be called "Rebirth of a Native Forest", as there have already been enormous tracts of land cleared of eucalyptus trees in the surrounding area, some just a stones throw away from where this article's photo was taken. This happened somewhere around 8-10 years ago (give or take) but I remember being quite surprised how even after 2 years, how quickly the native plants were rebounding. They are still thriving and I find it quite beautiful now when I visit. I take photos.

With respect to the article and the area in question being "arid", I live right off Grizzly Peak just north of this particular site, and have been visiting these very same pullouts along Grizzly Peak for over thirty years. In fact as a teenager we would regularly hang out there, and so I know the area really well, so It's hard for me to see how this particular microclimate can be considered arid. In fact I sometimes wish it were more 'arid' because I often find myself pining away for more sunshine and warmth, as a river of fog invariably comes right through the Golden Gate and engulfs the East Bay hills above Berkeley and North Oakland. This happens on a high percentage of days, and yes, even in the summer.

I have been an ISA certified arborist for the last 25 years (in the interest of full disclosure I own/operate a tree service) and I have been working on trees since 1981. I that time I have learned and observed many things about the trees in the area and how they interact. It is widely known accepted that the eucalyptus globulus is allelopathic, which means it produces growth inhibiting substances that stifle the competition. So in addition to growing faster than other native species and getting more of the sunshine, they suppress other plants chemically. It's just downright difficult to get new trees to thrive under this kind of canopy. I really like the idea of volunteers replanting, and I would join such an effort. but I would be skeptical of attempting to interplant in these conditions, as I feel the new trees would have little chance of flourishing, and it would take a sustained commitment.

I would support a phased in approach of removing and replanting large portions every 6-10 years. I know large government budgets don't work that way, but at least it transitions the loss/regrowth of the biomass.

Lastly, I do believe that Monterey pines have a tough time in this particular area. They really need even more fog/summer water than what is available. I'm not a stickler for natives of this exact location, but the beetles really go after these pines, especially in dry years.

Open to alternatives.

FEDERAL EMERGENCY MANAGEMENT AGENCY  
DRAFT ENVIRONMENTAL IMPACT STATEMENT  
ON HAZARDOUS FIRE RISK REDUCTION



COMMENTS SUBMITTED BY  
BARBARA ROBBEN  
1964 EL DORADO  
BERKELEY CA 94707  
510-524-2383  
17 JUNE 2013

PLEASE NOTIFY ME WHEN THE FINAL ENVIRONMENTAL  
IMPACT STATEMENT IS AVAILABLE.

COMMENTS ON FEDERAL EMERGENCY MANAGEMENT AGENCY'S DRAFT ENVIRONMENTAL STATEMENT REGARDING HAZARDOUS FIRE RISK REDUCTION IN THE EAST BAY HILLS, SAN FRANCISCO BAY AREA, CALIFORNIA.

COMMENTS ON THE DOCUMENT ITSELF.

THE TYPE-SIZE WAS NICELY READABLE, WITH MULTIPLE MAPS GREATER THAN 8½" x 11" FOLDED NEATLY TO THE SIZE OF THE PAGES. THE MANY APPENDICES APPEAR TO BE THOROUGH AND INFORMATIVE, BUT THEY ALSO CONTRIBUTE TO THE DOCUMENT'S CUMBERSOME QUALITY. IN THREE BINDERS, AND AT APPROXIMATELY 8 INCHES IN TOTAL THICKNESS, IT IS A DAUNTING TASK TO READ AND CROSS-REFERENCE THE VARIOUS TOPICS. APOLOGIES IF THE INFORMATION CONTAINED IN THIS DOCUMENT WAS NOT ADEQUATELY DIGESTED BEFORE THE DEADLINE TO SUBMIT THESE COMMENTS.

ACCESSIBILITY OF THE FEMA E.I.S. DOCUMENT.

THE PUBLIC WAS GIVEN A LIST OF 10 LOCATIONS WHERE THE PRINTED DOCUMENT WOULD BE AVAILABLE. IN ACTUAL PRACTICE ACCESSIBILITY WAS EXTREMELY LIMITED. (see appendix A).

NEWSPAPER COVERAGE OF THE ISSUE BECAME MORE FREQUENT BY MID-MAY BUT NOT AT THE OUTSET, WHEN IT WAS PRESUMABLY MADE PUBLIC. PUBLIC MEETINGS WERE HELD AT ODD HOURS, IN OUT-OF-THE-WAY LOCATIONS. MEETINGS SHOULD BE HELD

IN EVERY COMMUNITY AFFECTED BY THE FIRE-RISK REDUCTION PLAN. RESIDENTS WOULD BE AFFECTED FROM RICHMOND TO HAYWARD, A WIDE-SPREAD AREA, AND THEY SHOULD NOT HAVE TO TRAVEL TO OAKLAND TO HEAR THE PROPOSAL. MEETINGS ALSO SHOULD BE ACCESSIBLE BY PUBLIC TRANSPORTATION. INFORMATION SHOULD ALSO BE RELEASED TO THE MEDIA IN ADVANCE OF ANY PROPOSAL OR ACTION, SO THAT THE PUBLIC CAN BE WELL INFORMED.

A WRITTEN SUMMARY OF SEVERAL PAGES LENGTH SHOULD BE AVAILABLE IN MANY LOCATIONS; LIBRARIES, ON CAMPUS, INCLUDED IN THE DAILY CALIFORNIAN NEWSPAPER; PLENTY OF COPIES SO THAT EVERYONE WHO IS INTERESTED CAN TAKE ONE. PLEASE INCLUDE DATES AND TIMES OF MEETINGS AND CONTACT INFORMATION, AS WELL AS SOME GENERAL FACTS ABOUT THE PROPOSED PROJECT.



IT IS UNDERSTANDABLE THAT THE THREE PUBLIC AGENCIES MIGHT COMBINE THEIR EFFORTS TO CREATE A REDUCED FIRE RISK AREA IN THEIR COMBINED TERRITORIES. HOWEVER, THOUGH THEIR RISK FOR FIRES IS SIMILAR, THEIR MISSIONS ARE DIFFERENT.

#### I CITY OF OAKLAND.

ITS NEED IS MOSTLY TO PROTECT THE INDIVIDUAL DWELLING UNITS AND BUILDINGS OF THOSE IN THE DENSELY FORESTED OAKLAND HILLS. THOUGH OAKLAND MIGHT COMBINE FORCES WITH THE OTHERS, ITS METHODS AND FUNDING MIGHT WELL BE DIFFERENT. OAKLAND'S HILL AREA ATTRACTS PEOPLE WITH FINANCIAL MEANS TO PROTECT THEIR PROPERTIES, AND AS A WHOLE THEY VALUE THE BEAUTY OF THEIR FORESTED SURROUNDINGS. TO BE SURROUNDED BY PILES OF DEAD AND POISONED SLASH WOULD NOT MEET THEIR NEEDS.

#### II THE EAST BAY REGIONAL PARK DISTRICT.

THE DISTRICT HAS BEEN MANAGING ITS PROPERTIES IN EXEMPLARY FASHION SINCE 1934. ITS MISSION IS TO PROVIDE OPEN SPACE FOR THE ENJOYMENT OF HUMANS AND TO PROVIDE HABITAT FOR THE OTHER SPECIES OF THE EARTH IN THIS AREA, NEAR TO WHERE HUMANS DWELL, SO THAT THEY CAN INTERACT. THIS INCLUDES NOT ONLY ANIMALS BUT ALSO TREES. DEBRIS PILES OF FALLEN TREES WOULD NOT MEET THEIR MAIN GOAL. ALSO TO BE CONSIDERED IS THAT THE BAY RIDGE TRAIL RUNS THROUGH ITS PROPERTIES. THIS TRAIL MUST TRAVERSE BEAUTIFUL AREAS IN ORDER TO BE USEFUL TO HIKERS; ATTRACTIVE AND NATURAL.

### III THE UNIVERSITY OF CALIFORNIA.

THE UNIVERSITY'S BERKELEY CAMPUS LIES AT THE FOOT OF THE BERKELEY HILLS, AND THOUGH SLOPING TOWARD THE BAY, THE CAMPUS ITSELF IS RELATIVELY FLAT. THE CAMPUS TREES ARE BEAUTIFULLY CARED FOR - THOUGH THERE ARE LESS AND LESS OF THEM AS BUILDINGS CONTINUE TO GO UP.

IN CONTRAST TO THIS IS OTHER PROPERTY THAT U. C. OWNS. THE HAYWARD FAULT IS THE DIVIDING LINE BETWEEN THE GENTLY SLOPING CAMPUS AND THE STEEP AND FORESTED STRAWBERRY CANYON ABOVE.

HISTORY NEEDS TO BE CONSIDERED AT THIS POINT.

THE BERKELEY SITE WAS SPECIFICALLY CHOSEN FOR THE UNIVERSITY BECAUSE OF THE ABUNDANT SPRINGS IN STRAWBERRY CANYON. IT WAS TO BE THE SOURCE OF PURE WATER FOR THE FLEDGLING UNIVERSITY.

IT IS IMPORTANT TO NOTE THAT THIS FORMERLY PURE WATER SOURCE IS HEAVILY POLLUTED NOW. SEE APPENDIX G: "EXISTING CONTAMINATION AND LOCATIONS OF WATER WELLS INSIDE AND SURROUNDING PROPOSED AND CONNECTED PROJECT AREAS."

THIS IS AN EXAMPLE OF POOR MANAGEMENT OF ITS RESOURCES BY THE UNIVERSITY.

IN ADDITION, THIS WATER SOURCE WHICH WAS ONCE CONSIDERED VALUABLE IS PRESENTLY THOUGHT OF AS DETRIMENTAL. GROUND WATER IN THE HILLS ABOVE THE CAMPUS IS CAUSING BUILDINGS IN THE HILLS TO SLIDE DOWNHILL. LANDSLIDES ARE COMMON AND SOMETIMES THERE IS FLOODING AND LOSS OF PROPERTY WHEN RAINS AND THE AQUIFER COMBINE. EMERGENCY HYDRAUGERS AND WELLS HAVE BEEN PRESSED INTO SERVICE TO SAVE THE BUILDINGS, WITH VARYING RESULTS.

HISTORY AGAIN NEEDS TO BE CONSULTED. WHY WERE THERE BUILDINGS IN THESE STEEP FORESTED HILLS ABOVE THE CAMPUS? IT IS BECAUSE OF WORLD WAR II: A REMOTE LOCATION AWAY FROM THE CAMPUS WAS CHOSEN FOR SECRET AND PERHAPS DANGEROUS WORK ON AN ATOMIC BOMB. WHEN THAT PROJECT WAS FAMOUSLY SUCCESSFUL IT ATTRACTED OTHER SCIENTISTS TO THE HILLY, FORESTED AREA. WHAT WAS ONCE HIDDEN AND REMOTE HAS BECOME A HUGE CITY OF LARGE BUILDINGS, AND PROBLEMS ABOUND. DANGEROUS CONDITIONS ARE CONSTANTLY ARISING FROM THE UN-NATURAL LARGE LAB ON THE HILL. WILDFIRES ARE ONE OF THESE PROBLEMS. YET THE UNIVERSITY, WHICH IS SUPPOSE TO BE OUR PREMIER EDUCATIONAL INSTITUTION IN THIS STATE, HAS ALLOWED ALL OF THIS TO HAPPEN. QUESTIONS NEED TO BE RAISED ABOUT U.C.'s STEWARDSHIP AND ADMINISTRATION, WHEN A VALUABLE RESOURCE IS TURNED INTO AN IMPENDING DISASTER. HEAVY CUTTING OF TREES, ALONG WITH LEAVING THEIR FALLEN DEAD REMAINS IN PILES, IS NOT A SOLUTION TO THE PRESENT WILD-FIRE PROBLEM, BUT INSTEAD IS A RECIPE FOR A FUTURE DISASTER. ADDING POISONS TO THE MIX BODES EVEN WORSE FOR ALL CONCERNED, INCLUDING NEIGHBORS, WILDLIFE, SOIL, OTHER PLANTS, HEALTH OF FUTURE GENERATIONS, AND THE IMPORTANT FACT THAT IF THE UNIVERSITY CHOOSES A CRUDE, EXPEDITIOUS TYPE OF INDUSTRIAL SOLUTION TO ITS CURRENT WILD-FIRE DILEMMA, IT WILL SET A PRECEDENT POSSIBLY TO BE FOLLOWED THROUGHOUT THE STATE AND BEYOND. INNOVATIVE SOLUTIONS NEED TO BE FOUND.

## PROPOSED VEGETATION MANAGEMENT APPROACHES.

IT HAS BEEN PROPOSED THAT EUCALYPTUS AND OTHER NON-NATIVE TREES WOULD BE REMOVED.

PLEASE ANSWER THESE QUESTIONS IN FINAL E.I.S.:

WHY IS A CUT TREE, LEFT ON THE GROUND DEAD AND DRY, OR CUT INTO CHIPS, LESS OF A FIRE DANGER THAN THAT SAME TREE, ALIVE.

DISCUSS THE OVER-WINTERING HABITS OF NATIVE MONARCH BUTTERFLIES, AND HOW THEY HAVE BEEN GATHERING IN NON-NATIVE EUCALYPTUS TREES IN RECENT YEARS.

DISCUSS SUDDEN-OAK-DEATH, WHICH HAS BEEN A RECENT PLAGUE OF OUR NATIVE OAKS. DISCUSS THE ROLE OF OUR NATIVE BAY-LAUREL TREES IN THIS. IF WE WOULD CUT THE NON-NATIVE TREES, ONLY TO FIND THE REMAINING NATIVES DYING OF DISEASE, IT WOULD BE A BARE LANDSCAPE INDEED. PLEASE DISCUSS THIS AND PROVIDE EXAMPLES OF SITUATIONS IN OTHER LOCATIONS WHERE HUMAN ACTIVITIES HAVE INFLUENCED THE LANDSCAPE, PARTICULARLY IN REGARD TO FIRE DANGER.

IN STRAWBERRY CANYON, THE FIRE TRAIL ACTS AS BOTH A FIRE-DEFENSE TRAIL AND A RECREATIONAL TRAIL. COULD MORE FIRE TRAILS IMPROVE BOTH FIRE SAFETY AND RECREATION USES? WHAT WAS THE RATIONALE FOR THE FIRST FIRE TRAIL? WHAT WOULD ADDITIONAL FIRE-ROADS

COST, AND COULD THEY BE USEFUL IN THE CANYON? FIRE ROADS COULD BE LIGHTLY LANDSCAPED SO THAT THEY WOULD PROVIDE ENJOYMENT AND EXERCISE TO THE UNIVERSITY COMMUNITY. IN CONTRAST, AN AREA DEVASTATED OF ITS TREES AND COVERED WITH PILES OF DEBRIS WOULD BE AN EYE-SORE. EXPLORE HOW THE UNIVERSITY AS A WHOLE COULD BENEFIT FROM A MORE AESTHETIC APPROACH. CONSIDER WHETHER PIPELINES AND FIRE FIGHTING EQUIPMENT COULD BE INSTALLED ALONG FIRE TRAILS. WOULD ADDITIONAL FIRE TRAILS BE HELPFUL TO THOSE COMING IN TO REMOVE SPROUTS?

CONSIDER STRAWBERRY CANYON AS A WELL-WATERED FERTILE VALLEY IN THE TEMPERATE ZONE, WITH ITS MEDITERRANEAN CLIMATE. WHAT USES COULD BE MADE OF THIS VALLEY OTHER THAN CONSIDERING IT TO BE A LIABILITY IN CASE OF FIRE. CONSULT THE UNIVERSITY COMMUNITY, AND ALSO THE GREATER BAY AREA COMMUNITY, WHO MAY POSSIBLY PROVIDE SOME USEFUL IDEAS. THERE ARE OTHER AREAS AROUND SAN FRANCISCO BAY THAT HAVE VEGETATION AND TOPOGRAPHY SIMILAR TO STRAWBERRY CANYON. IT WOULD BE PRUDENT FOR THE UNIVERSITY TO DISCUSS COMMON PROBLEMS WITH OTHER AREAS, AND TO SHARE IDEAS AND INSIGHTS. CONSIDER WHICH PARTS OF THE GREATER BAY AREA FACE SIMILAR URBAN-WILDLAND INTERFACE ISSUES, AND TRY TO DEVELOP IDEAS THAT WOULD BE BENEFICIAL RATHER THAN DESTRUCTIVE. THE UNIVERSITY IS IN A PERFECT POSITION TO HOST SEMINARS, DISCUSSIONS, OPEN MEETINGS.

## INNOVATIVE SOLUTIONS.

WITH AGRICULTURAL COLLEGES, FORESTRY DEPARTMENTS AND ALL OF ITS OTHER RESOURCES, THE UNIVERSITY SYSTEM HERE IN CALIFORNIA IS PERFECTLY POISED TO BE A LEADER IN URBAN/WILDLAND INTERFACE MANAGEMENT, INCLUDING WILDFIRE RISKS.

WITHIN THE UNIVERSITY COMMUNITY YOU HAVE BRILLIANT THINKERS AND ENERGETIC YOUNG PEOPLE. WHAT WOULD THEY, INDIVIDUALLY OR COLLECTIVELY, DO IF STRAWBERRY CANYON WAS THEIRS TO USE AS A RESOURCE.

AS IT IS PLANNED, STRAWBERRY CANYON WOULD BECOME PILES OF SLASH AND POISONED STUMPS; BUT IT COULD INSTEAD BECOME A BEAUTIFUL RESOURCE. WHAT HAVE PEOPLE IN OTHER PARTS OF THE WORLD DONE WITH THEIR CANYONS:

FRANCE: VINEYARDS

SWITZERLAND: COW PASTURES AND FUNICULARS

PERU: MACHU PICCHU

SOME OF THE FOLLOWING MIGHT BE APPEALING, OR,  
AT LEAST OPEN OUR MINDS TO INNOVATIVE IDEAS:

TRAMS OR LIFTS FOR FIRE-FIGHTERS AND SUPPLIES.  
NATIVE AMERICAN GATHERING OF NATURAL MATERIALS.  
WATER STORAGE TANKS  
ROTC TRAINING GROUNDS  
AN EXTENDED, BUT LESS MANAGED BOTANICAL GARDEN  
COMMUNITY GARDENS OR RESEARCH GARDENS  
VERTICAL ACCESS, SUCH AS MARIN AVENUE, BY STAIRS  
APPLE ORCHARDS, OLIVE ORCHARDS

U.C. COULD ESTABLISH A DEPT. OF HILLSIDES, AND CARRY  
OUT RESEARCH IN STRAWBERRY CANYON, ESTABLISHING  
'BEST PRACTICES,' WHICH WOULD BE USEFUL TO OTHERS.

A POISON OAK TRAIL COULD BE ESTABLISHED, AT THE VERY  
LEAST, WHERE SIGNS WOULD IDENTIFY THE PLANT IN  
ITS VARIOUS COLORS AND TRANSFORMATIONS, WITH  
INFORMATION FOR THE NUMEROUS OUT-OF-STATE  
AND FOREIGN STUDENTS NOW AT U.C. BERKELEY.

IF INDEED THERE ARE 70,000 TREES SLATED FOR CUTTING,  
U.C., THROUGH ITS FORESTRY DEPARTMENT, COULD  
CONSIDER THAT IT HAS 70,000 PRACTICE STUMPS  
AVAILABLE FOR RESEARCH AND EXPERIMENTS.  
WORK TOWARD FINDING A METHOD TO PREVENT UN-  
WANTED SPROUTING FROM STUMPS WITHOUT THE  
USE OF POISONS.

## REGARDING THE 1991 OAKLAND HILLS FIRESTORM.

THE DIRECTION AND FORCE OF THE WIND WAS A MAJOR FACTOR IN THE 1991 FIRE, WHICH WOULD HAVE BURNED TO THE BAY HAD NOT THE WIND SHIFTED AND DIED DOWN. FUEL LOAD IS NOT AS IMPORTANT AS THE WIND.

SOME OF THE PEOPLE LOST IN THE 1991 FIRE STORM WERE HEROES; HOWEVER, SOME WERE PEOPLE WHO WERE UNAWARE OF THEIR EMERGENCY EXIT OPTIONS, AND WHO UNTHINKINGLY HEADED FOR THEIR AUTOMOBILES, CREATING TRAFFIC JAMS. TREES SHOULD NOT BE BLAMED FOR CARELESS BEHAVIOR ON THE PART OF HUMANS. PROMBLEMATIC BEHAVIOR ALSO INCLUDES SMOKING, BBQ FIRESTARTERS, CANDLES LEFT UNATTENDED, APPLIANCES INADVERTENTLY LEFT ON. IN ANY CASE, WE SHOULD ALL LEARN OUR EVACUATION ROUTES, PREFERABLY THOSE NOT INVOLVING CARS AND DRIVING. IN ADDITION, SOME AREAS ARE MORE AT RISK THAN OTHERS, IN TERMS OF FIRE. SOME AREAS ACT AS CHIMNEYS DURING A FIRE-STORM; YET THOUGH DEVASTED, IN SOME OF THESE AREAS BUILDINGS WERE PROMPTLY REBUILT AFTER THE FIRE. TREES SHOULD NOT BE BLAMED FOR THIS TYPE OF BEHAVIOR.

IN ADDITION WE ARE SUBJECT TO EARTHQUAKES, LANDSLIDES, FLOODS: WE MUST BALANCE OUR FIRE RISK MANAGEMENT PRACTICES SO THAT THEY ARE COMPATIBLE WITH THE VALUES THAT DRAW PEOPLE TO LIVE HERE.



**From:** [Robert Gannon](#)  
**To:** [EBH-EIS-FEMA-RIX@FEMA.GOV](mailto:EBH-EIS-FEMA-RIX@FEMA.GOV)  
**Cc:** [bob.gannon](#)  
**Subject:** East Bay Parks DEFORESTRATION  
**Date:** Sunday, June 02, 2013 9:50:07 PM

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I am an instructor and scientist for the last 50 years and have some comments which I hope you will briefly listen to regarding protection of EBRParks, the trees, the vegetation and general health of the environment.

1. Some care for native species is a must.
2. Everywhere globally environs change and evolve. Ours has too. We must take care not to do widespread killing of trees, shrubs, or even insects.
3. I am not much of an "activist" but when I hear that Monsanto products are used I shake. They have been proven dangerous in the case of weed-killers, stump degeneration, insect prevention and even in drugs used by humans. I see this company, sorry to say, as rather unethical. I can chemically prove how leaching of certain compounds into the soil is dangerous (such as roundup around were people eat elderberry, miner's lettuce, dock, etc.). I urge you NOT to use such chemicals...partly for MY safety.
4. There are other ways to protect from flash-fires (I have fought them myself!). More firebreaks, water sources, shrubs and succulents which burn very slowly do not seem to "be in your mix" at this point. I would be interested in your search for alternatives.
5. There are many "grandfather" Eucalypti which really should not be cut. They are part of the "new ecosystem". However, new sprouts could be weeded regularly.

I hope this helps. It is a small part of the entire proposal, I know. But I believe these are essentials to follow, not just consider.

Robert M. Gannon, MS,Mdiv  
Past science chair, Chemistry & Physics instructor

# California Native Plant Society

East Bay Chapter

P O Box 5597, Elmwood Station. Berkeley, CA 94705

June 17, 2013

Federal Emergency Management Agency  
 Department of Homeland Security  
 500 C Street, SW  
 Washington, DC 20472

**Subject: Draft HFRR EIS for the East Bay Hills, California**

Dear Sir/Madam:

The California Native Plant Society's East Bay Chapter appreciates the opportunity to comment on the 2013 Hazardous Fire Risk Reduction Environmental Impact Statement for the East Bay Hills of California.

The California Native Plant Society is a statewide non-profit organization that works to protect California's native plant heritage and preserve it for future generations. The Society's mission is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat. We promote native plant appreciation, research, education, and conservation through our 5 statewide programs and 33 regional chapters in California. The East Bay Chapter (EBCNPS) covers Alameda and Contra Costa Counties and represents some 1100 members.

EBCNPS has been involved with protecting and conserving native plant resources in the East Bay Hills for some 47 years. Our members have worked in these parks and preserves in partnership with EBRPD and other entities over many decades. Our insights and suggestions are derived from first hand experience.

This comment letter was coordinated by the Conservation Committee of EBCNPS, with substantial contributions from our plant scientists on the Rare Plant, Vegetation, and Significant and Unusual Plants Committees. Additionally, included in this letter are comments written by chapter members who are local experts with special knowledge of two of the regional preserves where fuels management work will occur.

These East Bay Hills are rich with native vegetation and rare and unusual plants that often are found nowhere else in the two- county East Bay area. The East Bay Hills are home to a large number of endangered, threatened, and locally rare plants, which could be affected by fuels management projects. EBCNPS wants to ensure that the EIS will address potential impacts to these plants, as well as to other more common, yet habitat rich vegetation types. Appendix A provides a list of CEQA protected A-ranked plants, or plants that are locally rare, including federally listed and state listed plants.

We understand FEMA's overarching charge in funding projects covered in the DEIS for the East Bay Hills and the Richmond shoreline is to steward the public monies wisely by



*Dedicated to the preservation of California native flora*

# California Native Plant Society

funding work that will be effective in substantially reducing fire hazard, while protecting to the greatest extent possible the natural resources and native habitat values of these important wildlands.

FEMA has accepted the strategy of U.C. Berkeley and the City of Oakland to remove whole populations of exotic trees and exotic shrubs and other invasive exotic weeds in the native shrublands, while encouraging native plant communities to expand. Why then, does this FEMA document allow the East Bay Regional Park District to potentially perform actions that will have significant, irreversible and adverse impacts to native habitats? These actions include radical thinning and clearing of extensive native brushlands, scrublands, and riparian associations, while merely thinning, not removing the highest fire hazard vegetation of all: the exotic acacia, pine and eucalyptus plantations?

A key important element of the FEMA funding criteria is 'avoidance of impacts'. Yet the Park District, which has a mission of protecting and enhancing native habitat values, is the main entity in designing projects with serious impacts that will degrade native habitat values by replacing viable stands of native vegetation with exotic annual grassland, known for drying out the top layer of soil, and extending the fire season with dried out flashy surface fuel that can act like a fuse to ignite other areas. Is this model of vegetation management really going to produce a less hazardous condition in the East Bay Hills? Will this approach break up stands of more fire-resistant, and firebrand-absorbing plant communities, and replace them with hugely expanded acreages of more flammable exotic weed monocultures? We certainly support efforts to remove broom and other weeds from brush and scrublands. Does FEMA support the conversion of the biologically diverse and richer native brush and scrublands to weedy exotic annual grasslands with little native habitat value? Does FEMA support radical 'thinning' of shrub lands and converting 50-70% of the biomass to weedy annual grassland as a good management strategy? Would FEMA, in some cases where shrubland reduction is unavoidable, favor reducing the amount of dead plant material by hand trimming, and allowing the native scrub to regrow, in a younger and more lush iteration of that plant association (as noted in DEIS, appendix M, page 13).

The FEMA grants require monitoring and weed maintenance for years to come. Yet the FEMA grants do not supply funding for any of the follow up weed abatement. The East Bay Regional Park District, City of Oakland, and UC Berkeley have great trouble keeping up with acres of weedy species now in their stewardship purview. There just isn't money available for comprehensive management of weedy invasives. This is demonstrated by the many acres of weedy 'fuels managed' areas, including fire roads. What mechanism is being instituted by FEMA in this DEIS to guarantee a commitment of money and personnel for management of greatly increased acreages of newly created annual weedy grassland?

Native perennial grasslands are altogether more fire resistant than exotic annual grasslands, as the hardy native bunch grasses are deep rooted and hold moisture in their above ground parts much longer than their weedy annual counterparts. Can FEMA in this



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DEIS require that funds be made available long term, for conversion of native shrublands into native perennial grasslands, where conversion to 'grassland' is deemed absolutely necessary? Alternatively, where such a strategy is not considered feasible for brush, scrub, and riparian associations, could FEMA in this DEIS, require hand thinning, removal of invasive exotics, and removal of all nearby high fire hazard exotic tree populations, as a more effective long term strategy?

This DEIS consistently lacks adequate vegetation naming, surveying and mapping, related to the proposed and connected project areas. Why was the current Manual of California Vegetation, Second Edition, not used in classifying the vegetation communities accurately? This is an important oversight that renders much of the document out of date and with questionable accuracy, regarding vegetation communities that will be negatively impacted by proposed fuels management work. The M.O.U. that established this requirement is appended to these comments.

In our EBCNPS letter prepared in response to the NOP for this DEIS on October 1, 2010 (Appendix B), we submitted a listing of Significant and Unusual Plants that we asked adequate field surveys for, and mapping of these resources be prepared as part of the resource assessment for this DEIS. Unusual and Significant Plants are those species that in the local biotic and geographic region of this Project Limits clearly meet defined standards for local rarity. These species should be considered in this DEIS; the concerned Project Applicants are required by California environmental regulation to consider these resources; projects potentially funded by FEMA should comply with local environmental regulations. Further justification for FEMA to consider both Federally and State Listed plants and plant communities together comes from the Memorandum of Understanding For Cooperative Vegetation Habitat Mapping and Classification which was signed in 2000 (Appendix C) by multiple agencies responsible for resource oversight in California, including both USFWS and CDFW.

Why has this document not included adequate survey and mapping data, assessments of potential impacts, and mitigations for these impacts? Please find appended, an updated listing of concerned species (Appendix A), as well as our original EBCNPS NOP response letter mentioned above.

## General Comments:

Throughout the document and maps botanical nomenclature and taxonomy are out of date. This DEIS was released in 2013. The primary reference manual of the California Flora is *The Jepson Manual: Vascular Plants of California, Second Edition* published in January 2012. Therefore the DEIS should follow the accepted names used in California in the preparation of this document. Updated names should be used in the Final EIS. Will improper botanical names be revised before the final document?

Although mitigation measures are included for *Phytophthora cinnamomi* there are no mitigation measures for *Phytophthora ramorum* (Sudden Oak Death). Sudden Oak Death is known to occur in the East Bay hills and its spread should not be amplified through this



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project's activities. Mitigation measures for addressing this serious threat to the integrity of our oak woodlands should include: surveys for the pathogen in project action areas, how trees with Sudden Oak Death infections are treated during risk reduction activities, and how tools are cleaned after Sudden Oak Death infected trees are cut.

New locations of individuals or small populations of pallid manzanita are most likely to occur deep in the understory of Eucalyptus or Pine stands where they are in shaded habitat. Because of their location in these understories, tree removal may result in sun shock, which may kill these understory occupants by a rapid increase in sun exposure and reduction in soil moisture. Trees in occupied pallid manzanita habitat should be removed at the appropriate time to reduce potential sun shock to these plants. Project actions should include the removal of the majority of the non-native and non-indigenous trees in the fall. The timing of the tree removal in late fall will allow existing pallid manzanitas to adjust to the increased exposure to light and heat during cooler seasonal temperatures before the following spring and summer.

CDFG protocols state: "A discussion of threats, including those from invasive species, to the plants and natural communities" must be included as part of the assessment of potential impacts in a project environmental document. This DEIS does not include a discussion of threats particular weed species may pose to existing populations of rare plants species and/or sensitive natural communities within project action areas. Without detailed information about the types of invasive weeds and the chemicals that may be used to treat them, an evaluation of real threats to rare plants and/or sensitive natural communities from weed species or herbicide application cannot be made. This document should include a detailed discussion of what weed/invasive species are of concern on site and what measures will be taken to protect rare plants and/or sensitive natural communities before, during, and after project related activities.

## Specific Comments (Wording from dEIS document in *italics*):

### Use of MCV2

**Section 4.2.2.1.3** *Vegetation Mapping Classification Mapping was conducted in general accordance with the California Native Plant Society (CNPS) 'A Manual of California Vegetation (Sawyer et al. 2008).*

Comments:

- The document says that MCV2 (referenced as Sawyer et al. 2008) was used to type the vegetation but the figures do not present MCV2 types. Why not?
- Utilizing the CNPS method, how many relevé or rapid assessment plots were used to characterize and classify the vegetation types within the project area? Can these data forms be appended to this document?



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- We assume the CNPS/CDFG vegetation mapping/sampling methods (2011<sup>1</sup>) were used in order to type the vegetation based on MCV2. If so, how many relevé or rapid assessment plots were used to characterize and classify the vegetation types within the project area?
- Were the ‘existing vegetation data’ referenced on page 4.2-4 (including EBRPD EIR data [EBRPD 2010] and potentially FEMA 2006a, FEMA 2006b, and EBRPD 2006) collected to MCV2 vegetation types? If not, then the data needs to be cross-walked to MCV2 in order properly assess impacts to sensitive natural community types.
- Results presenting MCV2 types should be presented in a recirculated DEIS so the significance of any impacts to sensitive natural communities due to project activities can be evaluated and commented on by the public. This data should either (1) be presented as an appendix to the DEIS and provided with a cross-walk between the broader community types presented in the figures and each MCV2 type or (2) the vegetation community descriptions should be written as MCV2 types, at least to the Alliance level.

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## **Sections Dealing With Sensitive Natural Communities**

**Section 4.2.3.1.1 Pages 4.2-25 and 4.2-26.** Database searches were conducted using the boundaries defined by the following USGS 7.5-minute quadrangles that overlap the proposed and connected project areas, hereafter known as “project quadrangles”: San Quentin, Richmond, Oakland West, Oakland East, Briones Valley, Las Trampas Ridge, San Leandro, and Hayward,

**Page 4.2-5 Table 4.2-2** lists the CDFW status of five locally distinct vegetation communities and their potential to occur in the proposed and connected project areas based on the California Natural Diversity Database (CNDDDB 2012) and field surveys. Northern maritime chaparral is the only locally distinct vegetation community present in the project areas.

### Comments:

- According to CDFW guidelines (2009)<sup>2</sup>, the database search for special-status plants and natural communities should include the quadrangles that the project is located on plus the adjacent quadrangles. This search would result in adding Coastal Brackish Marsh for consideration of the potential to occur in the proposed and connected project areas. This should be added to a recirculated DEIS.
- Sensitive natural communities are notoriously underreported. In addition, the data in CNDDDB is only for Holland vegetation types; data for vegetation stands typed with MCV2 has not been entered into the system yet (the only MCV2 types that

<sup>1</sup> California Native Plant Society/Department of Fish and Game. 2011. Protocol for Combined Vegetation Rapid Assessment and Relevé Sampling Field Form. May 2011.

<http://www.cnps.org/cnps/vegetation/pdf/protocol-combined.pdf> [Accessed June 13, 2013]

<sup>2</sup> Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. November 2009. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline=1> [Accessed June 13, 2013]



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have been entered into CNDDDB are those mapped under VegCAMP [approximately 1/3 of the State of California, but not yet including the San Francisco Bay Area] [Diana Hickson, CDFW, pers. comm. with East Bay CNPS 2013]). Consequently, some sensitive natural communities are much more prevalent in the proposed and connected project areas than is reflected in this document.

- The DEIS does not attempt to translate between the Holland types that were queried and MCV2 types which is the current standard. This results in some confusion of naming standards. For instance, Northern Maritime Chaparral is an outdated reference to what is Brittle leaf-Woolly leaf manzanita chaparral within the proposed and connected project areas; this alliance is more equivalent to Central Maritime Chaparral.
- Another reason for presenting the MCV2 types is that the list of mapped vegetation alliances should be checked against the most recent CDFW *List of Vegetation Alliances and Associations* (2013<sup>3</sup>) to determine if any of the types are considered sensitive natural communities (i.e., sensitive or special-status natural communities are vegetation types that have been identified on the most recent CDFW *List of Vegetation Alliances and Associations* as being critically imperiled [state ranking of S1], imperiled [S2], or vulnerable [S3]).

**Page 4.2-6, Table 4.2-2** *Northern maritime chaparral: Present. There are two CNDDDB occurrences present in the proposed and connected project areas at Sobrante Ridge and Huckleberry Botanic Regional Preserves.*

**Section 3.4.2.3.1** *Sobrante Ridge Regional Preserve. Sobrante Ridge Regional Preserve contains proposed project area SO001, a 4.1-acre area on the western edge of the preserve, opposite the eastern end of Rain Cloud Drive. The dominant type of vegetation is oak-bay woodland. EBRPD would convert 0.56 acres of northern maritime chaparral to successional grassland to enhance growing conditions for pallid Manzanita, a federally designated threatened species (see Section 4.2.3). The oak-bay woodland would be preserved.*

Comments:

- Maritime chaparral is a particularly important community type as it is considered to be among the rarest of the remnant plant communities found in the East Bay hills (Dr. Keeler-Wolf, co-author of MCV2 and Senior Vegetation Ecologist with VegCAMP in the Biogeographic Data Branch of CDFW, pers. comm. with EBCNPS 2013; also see Vasey et al. 2012<sup>4</sup>). It is not only present at Sobrante Ridge and Huckleberry Botanic Regional Preserves but also in other areas within or adjacent to the proposed and connected project areas including within

<sup>3</sup> CDFW 2013. Natural Communities --Background Information. California Department of Fish and Game, Sacramento, California. [http://www.dfg.ca.gov/biogeodata/vegcamp/natural\\_comm\\_background.asp](http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_background.asp) [Accessed June 13, 2013]

<sup>4</sup> Vasey, M.C., M.E. Loik, and V.T. Parker. 2012. Influence of summer marine fog and low cloud stratus on water relations of evergreen woody shrubs (Arctostaphylos: Ericaceae) in the chaparral of central California. *Oecologia*. October 2012. Volume 170, Issue 2, pp 325-337.



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- Knowland Park, near Canyon, near Briones Reservoir, Leona Heights (west, southwest, and south of Merritt College), and in the hills surrounding Upper San Leandro Reservoir (location data provided by Dr. Keeler-Wolf, CDFW, pers. comm. with EBCNPS 2013).
- There is a regulatory model for how to address potential impacts to rare maritime chaparral found within the California Coastal Commission (CCC):
    - The CCC requires protection of maritime chaparral as an Environmentally Sensitive Habitat Area (ESHA) under Section 30240 of the Coastal Act. An ESHA is described as “Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” Protection of ESHAs is achieved by avoidance of impact: forbidding any development, including roads and structures, within the ESHA and within a buffer zone of 50-100 feet from any development (John Dixon, California Coastal Commission, pers.comm. with EBCNPS 2013). Depending upon individual circumstances, the CCC may also calculate any previous loss of chaparral habitat at a project site due to roads or other development and can require that these areas be counted in the total impacts. It can also require restoration where appropriate because of previous "taking". Staff biologists undertake extensive reviews of every development proposal, and decisions whether and what to permit are based on a firm understanding of the ecology of the ESHA.
  - The statement in Section 3.4.2.3.1 that “EBRPD would convert 0.56 acres of northern maritime chaparral to successional grassland to enhance growing conditions for pallid Manzanita...” is nonsensical. Pallid Manzanita is a maritime chaparral species, not a grassland species. Converting maritime chaparral acreage to grassland will harm growing conditions for pallid Manzanita rather than “enhance” them. EBCNPS recommends avoiding impacts to maritime chaparral in order to preserve this rare and protected plant and habitat.

The proposed fuels treatment of shrublands and scrublands (removal of 50-70% shrub cover or the conversion of shrublands to annual grasslands<sup>5</sup>) must be avoided in any sensitive natural community, including within maritime chaparral.

**Page 4.2-6, Table 4.2-2** *Valley Needlegrass Grassland: No potential. The community is not present in the proposed and connected project areas. There were no observations of the community during field surveys, and there are no CNDDDB occurrences in the proposed and connected project areas.*

**Page 4.2-5** *Small patches of two other sensitive vegetation communities, serpentine bunchgrass and coastal terrace prairie, also occur as described below.*

**Page 4.2-18 and 19** *In the Miller/Knox Regional Shoreline area, native grasses in coastal prairie patches include seashore bentgrass (Agrostis pallens) junegrass (Koeleria*

<sup>5</sup> Biological Opinion for the Proposed Federal Emergency Management Agency (FEMA) Hazardous Fire Risk Reduction Project in the East Bay Hills of Alameda and Contra Costa Counties, California (HMGP 1731-16-34, PDM-PJ-09-CA-2005-003, PDM-PJ-09-CA-2005-11, and PDM-PJ-09-CA-2006-004). May 10, 2013. p 16.





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macrantha), and red fescue (*Festuca rubra*). These areas of coastal prairie were not mapped because the patch sizes were much smaller than the minimum mapping area identified in the methods of this project.

**Page 4.2-21** Scattered native grasses, including purple needlegrass, blue wild rye, and creeping wild rye (*Leymus triticoides*), occur sparingly in this community in the proposed and connected project areas.

## Comments:

- Areas of Purple Needlegrass (*Stipa pulchra*, formerly *Nassella pulchra*) Grassland, Valley Needlegrass Grassland, and Creeping Wildrye (*Elymus triticoides*, formerly *Leymus triticoides*), all considered sensitive natural communities, are present within the project area. Stating that these grasses occur sparingly is not enough information to indicate the cover values of these species within affected grasslands. Cover values determine if these patches qualify as distinct communities based on the membership rules for the subject community. Depending on the type, cover values can be as low as 20% for Purple Needlegrass Grassland. If the minimum mapping unit was 200 square feet (as described on page 4.2-4), there would certainly be some areas qualifying as these grassland types. Why were these areas not evaluated based on cover values, mapped, and included for impact analysis with this document? They should be included. In addition, numerous stands of purple needlegrass and creeping wildrye have been documented in other areas within or adjacent to the proposed and connected project areas including in the hills between Canyon and the southern edge of Upper San Leandro Reservoir (location data provided by Dr. Keeler-Wolf, CDFW, pers. comm. with EBCNPS 2013). These sensitive natural communities should be mapped and included for impact analyses.
- Coastal terrace prairie is not only present at Miller/Knox Regional Shoreline, but also in other areas within or adjacent to the proposed and connected project areas including Point Molate and Point Richmond. This sensitive natural community should be mapped and included for impact analyses.
- Other sensitive natural communities which exist in the proposed and connected project areas include Bay Woodland (which should be separated from Live Oak Woodland, particularly within the drainages) and Redwood forests. Need to ensure impacts to all potential sensitive natural communities are avoided.

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**4.2.3.1 Methodology for Evaluating the Presence of Sensitive Biological Resources** The evaluation of the sensitive biological resources in the proposed and connected project areas consisted of database searches, a literature review, and field surveys of vegetation communities.

## Comment:

This section does not include an evaluation of locally rare plant species. CEQA requires that impacts to “resources that are rare or unique to that region” be evaluated [CEQA Guidelines 15125(c)]. This includes botanical resources that



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are, but not limited to, peripheral populations and disjunct subpopulations. These are informal terms that refer to those species that might be declining or be in need of concentrated conservation actions to prevent decline, but have no legal protection of their own. Also, CEQA Guidelines Section 15380 states “a species not included in any listing...shall nevertheless be considered to be rare or Endangered if the species is likely to become Endangered within the foreseeable future throughout all or a significant portion of its range and may be considered Threatened as that term is used in the Endangered Species Act.” Locally rare species tracked by the East Bay Chapter of CNPS meet these criteria (Lake 2010<sup>6</sup>). Their status is based on their rarity and endangerment throughout all or portions of their range. Since the concerned Project Applicants are required by California environmental regulation to consider these resources; projects potentially funded by FEMA should comply with local environmental regulations.

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## Table 4.2-3

### Comment:

The following comments address the inadequacy of determinations for potentially occurring rare plant species within the project areas.

- Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*) = This species was determined as having no potential to occur within project areas. Based on specimen information included in the California Consortium of Herbaria<sup>7</sup> there are known records of this species from "Strawberry Canyon, Berkeley Hills" and Oakland". The potential to occur should be changed from "No Potential" to "Low Potential".
- Coastal triquetrella (*Triquetrella californica*) = based on information from our Rare Plant Committee Chairman This species' potential to occur should be changed from "No Potential" to "Moderate Potential". This is an often overlooked species that has been observed in new locations throughout the Bay Area in habitat resembling "successional grasslands" as described in this document. With little to know moss inventorying taking place in the East Bay it cannot be ruled out as not occurring within the project areas as there are historic records from Mount Diablo and new records from San Bruno Mountain (pers. comm. Bartosh 2013). Because there is abundant suitable habitat between these two localities this species should be considered as having a potential to occur within the project areas.
- Coast Iris (*Iris longipetala*) = This species was not addressed in the table. It should be treated as having a "Moderate Potential" to occur within the project areas based on herbaria records from the "top of the North Berkeley Hills" and "Point Isabel" (CCH 2013)

<sup>6</sup> Lake, Dianne. 2010. *Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties*. East Bay Chapter of the California Native Plant Society.

<sup>7</sup> Data provided by the participants of the Consortium of California Herbaria (CCH) ([ucjeps.berkeley.edu/consortium/](http://ucjeps.berkeley.edu/consortium/)).



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- Fragrant fritillary (*Fritillaria liliacea*) = The location Miller Knox should be added to the areas where this species has the potential to occur based on a collection from "Point Richmond" (CCH).
- Kellogg's horkelia (*Horkelia cuneata* var. *sericea*) = Herbaria records do exist for this species from the "Oakland" area (CCH 2013) and suitable habitat is present within the project areas, there for the potential for occurrence of this species should be changed from "No potential" to "Low Potential".
- Mount Diablo cottonweed (*Micropus amphibolus*) = This species is not addressed in the table though it should be based on numerous records appearing in the Consortium of California Herbaria from localities such as "Old Tunnel Road", "Strawberry Canyon", "North Berkeley Hills", and "Wildcat Canyon". This species should be treated as having a "High Potential" to occur within the project areas.
- Oakland Star-tulip (*Calochortus umbellatus*) = This species is not addressed in the table though it should be based on numerous records appearing in the Consortium of California Herbaria from localities such as "Grizzly Peak", "above Mills College", "East Oakland Hills", "Strawberry Canyon", "Wildcat Canyon", and near "Lake Temescal". This species should be treated as having a "High Potential" to occur within the project areas.
- Bristly leptosiphon (*Leptosiphon acicularis*) = This species was not addressed in the table. It should be treated as having a "Moderate Potential" to occur within the project areas based recent CNDDDB records from the Oakland Hills and the fact that this species is often overlooked and underreported (pers. comm. Bartosh 2013).
- San Francisco Bay sunflower (*Chorizanthe cuspidata* var. *cuspidata*) = The infraspecific name for this taxon is misspelled in the table.
- Pallid manzanita (*Arctostaphylos pallida*) = It should be noted that this species can also occur as isolated individuals or small groups in the understory of Eucalyptus forest in the East Bay Hill as this species has been observed in low numbers within this habitat type in Redwood Regional Park. Rare plant surveys should focus on identifying and locating these individuals or small populations within this habitat type (pers. comm. Bartosh 2013).

## 5.1.6.3.2 Proposed and Connected Actions

### Impacts during Implementation

This subsection states that special-status plant species “could be directly impacted if they are present in treatment, staging, or access areas during implementation. Plants could be damaged or killed by workers or heavy machinery or indirectly impacted from loss of suitable habitat conditions.”

### Comment:

The purpose of an Environmental Impact Statement is to evaluate impacts on the environment, in this case special-status species, from a proposed action. Since



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there have be no protocol-level rare plant surveys conducted in proposed action areas to date, the actual presence and distribution of special-status plant species and the affects of proposed project actions were not evaluated in this document. Without abundance and distribution information the potential significance of impacts to special-status plant species is inadequately evaluated in this document. Real impacts to rare plant species should be evaluated herein which can only take place after protocol-level rare plant surveys have been conducted, level of impacts based on proposed actions are evaluated, and this DEIS is recirculated with that information.

## Impacts from Habitat Loss or Alteration

*Temporary loss or alteration of habitat could result in impacts on special-status plants due to erosion or changes in soils from the placement of eucalyptus wood chips. During implementation of the proposed and connected actions, the best management practices described in Section 5.1.3.3.1 would be implemented to avoid potential impacts from soil erosion. In addition, MMPs would be implemented to restore and enhance native habitats in the long-term. An analysis of the potential for toxicity from eucalyptus wood chips indicates that short-term and localized effects on soil microbes, soil invertebrates, and terrestrial plant seedlings may result from exposure to fresh eucalyptus and possibly pine wood chips (see Appendix L).*

### Comment:

This evaluation and conclusive assumption that the effects of Eucalyptus and Pine wood chips are negligible on special-status plant species and their habitat is negligible is inadequate. This is based on a study produced out of Florida and assumes that allelopathic effects from Eucalyptus and Pine species last only three months. There is no data presented in this document, including Appendix L, on what species of Eucalyptus or Pine were studied. Are these the same species we have in California? This section also does not evaluate the potential affects of wood chip spreading to special-status plant species with differing life forms such as geophytes (bulbs), annuals, herbaceous perennials, and shrubs. Wood chips affect bulbs and herbaceous species in different ways that woody shrubs. An evaluation and action of how wood chip application is executed within occupied rare plant habitat based on life form should be included in this document.

## Impacts From Herbicide Application

*The application of herbicides could result in impacts on special-status plants if there is direct contact with chemicals that cause toxicity. Herbicide application is unlikely to affect pallid manzanita or Presidio clarkia because these species are not known to be present in the treatment areas proposed for herbicide application. However, if pallid manzanita, Presidio clarkia, or other special-status plants are present, they could be affected. Mitigation measures described in Section 5.1.6.3.3 would be taken to protect any special-status plants that could be present unexpectedly in or near the treatment areas.*

### Comment:



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This mitigation measure as well as mitigation measure 5.1.6.3.3 are inadequate as it they do not address or mitigate herbicide application near occupied habitat for special-status plant species other than Presidio Clarkia and Pallid Manzanita. This mitigation measure should address the timing and type of herbicide used based on the type of habitat and life form (annual, perennial, or shrub) of the subject rare plant.

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## 5.1.6.3.3 Mitigation Measures

### *Protocol Surveys (BR-8)*

*As described in Section 5.1.6.2.3, a biological monitor would be made available to be on site and/or on call during implementation activities to avoid or reduce potential impacts on special status species under the proposed and connected actions such that impacts would not be significant. In addition, the following measure specific to special-status plants would be implemented:*

*Pre-implementation surveys would be conducted to determine the presence of special-status plants within the project areas where vegetation management activities would be conducted. Botanists would conduct a botanical survey for the listed species during the blooming period for each species before vegetation management activities start. All special-status plants would be clearly flagged with high visibility flagging and avoided.*

### Comment:

Conducting surveys to locate special-status plant species after the release of this DEIS does not provide full disclosure of all rare plant species present within the project areas and allow for a full analysis of the significance of impacts resulting from this project. This mitigation measure is inappropriate to determine the significance of impacts to existing special-status plant populations or those yet unknown because of the lack of an evaluation of direct, indirect, and cumulative impacts to specific plant taxa throughout their overall range and within the region. This is also deferred mitigation. California Department of Fish and Game (CDFG) rare plant survey protocols<sup>8</sup> “meet California Environmental Quality Act (CEQA) requirements for adequate disclosure of potential impacts”. These protocols indicate that Botanical Survey Reports should include the following to assess potential impacts:

- A discussion of the significance of special status plant populations in the project area considering nearby populations and total species distribution;
- A discussion of the significance of special status natural communities in the project area considering nearby occurrences and natural community distribution;
- A discussion of direct, indirect, and cumulative impacts to the plants and natural communities;

<sup>8</sup> Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. November 2009. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline=1>



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- A discussion of threats, including those from invasive species, to the plants and natural communities;

While details of this information is provided for Pallid manzanita and Presidio clarkia, no information of this nature (bulleted items) is provided for any of the other rare plant species known to occur within or adjacent to project action areas. Rare plant surveys should be conducted and their results included in a recirculated DEIS so the significance of any impacts to rare plants due to project activities can be evaluated and commented on by the public.

## Specific Comments Regarding EBRPD Sobrante Ridge Treatment from EBCNPS member Gudrun Kleist

I live within easy walking distance of Sobrante Ridge and have been hiking there daily since March 1987. While there are plenty of non-natives such as annual grasses, yellow star thistle, poison hemlock and others, there are essentially no non-native trees nor shrubs (including broom) growing on Sobrante Ridge (yet).

It appears from reading 81420-2010-F-0849-3 that the park service intends to convert the oak/bay forest at the West side to oak woodland and “California” annual grasslands, which are essentially non-native weed farms. There is no detailed close-up map of the exact area, so it is difficult to determine just where this work is to be done.

I find the section on the Alameda manzanita (*Arctostaphylos pallida*) particularly troubling, especially the removal of Madrone (*Arbutus menziesii*) and the other Manzanitas growing in the area. There are only a handful of Madrones growing in a very small area, one of them a majestic old tree. To cut down a mature hundred(s) year old native tree to “save” a couple of Manzanitas is absurd. The different Manzanitas and the Madrones bloom in succession over many months starting in December through April providing food for the native hummingbirds and bumblebees. The berries from all are consumed by birds and small mammals. (Rodents are an important food source for the Alameda whip snake). While I agree that the California Bay trees (*Umbellularia californica*) should be removed, decimating or damaging a sensitive vegetation community while considering the preservation of only one species in it is counterproductive. The same is true for only taking the Alameda whip snake and red-legged frog into consideration instead of all of the native fauna that are interrelated.

Ironically, one of the major reasons for the decline of *A. pallida* is **fire suppression**. *A. pallida* seeds need fire to germinate. The occasional fire in a Northern Maritime Chaparral also keeps undesirable (native) plants such as *Umbellularia californica* at bay (pun intended).

On Sobrante Ridge, many years of herbicide spraying and running large herds of goats unsupervised by a plant knowledgeable person to control the “California” annual



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grasslands have resulted in a decline of the few native species and an invasion of even bigger weeds. Oaks have been gouged and their trunks buried in dirt by bulldozers “clearing” the fire roads. The chips of cut and pruned trees are blown into the woods, covering the understory and piling up against tree trunks.

All this leaves me with wondering how well the extremely valuable and rare park resources will be managed in regards to native flora and fauna.

-Gudrun Kleist

## **Specific Comments from EBCNPS Restoration Committee Chair, Janet Gawthrop Regarding EBRPD Huckleberry RP and Sibley RP Treatment**

Unlike much other public land in the East Bay Regional Park District (EBRP), both Huckleberry and Sibley are regional preserves, not just parks. Both received the preserve designation because of their unusual natural resources, botanical as to Huckleberry, and mostly geological, with some botanical in Sibley.

Huckleberry and Sibley preserves share a boundary, as well as much indigenous flora. Much of this flora is unusual in the East Bay, not just pallid manzanita. Western leatherwood occurs in many locations in Huckleberry, but the US Fish & Wildlife Service (USFWS) discusses preservation measures for western leatherwood only in Redwood Regional Park. Along with this oversight, both the FEMA EIS and USFWS Biological Opinion omit all reference of the many rare taxa, including the population of locally rare shrub (*Vaccinium ovatum*) for which Huckleberry Botanic Preserve was named. While EBRP's goal of removing invasive plants is laudable, the district would only detract from its stated goal of fire prevention by disturbing the native plant communities that have been growing there.

FEMA should not grant funding to remove or thin "shrubland" vegetation in either of these preserves until EBRP conducts biological surveys of the preserves, using current protocols in the Manual of California Vegetation, 2<sup>nd</sup> edition (MCV2). "Shrubland", without more, does not designate a fire risk or a plant community. The FEMA EIS presents inadequate description of the preserves' flora to allow any contractor bidding on the work to save the flora that originally inspired creation of Huckleberry Botanic Preserve.

Both Huckleberry and Sibley preserves now have healthy stands of rare maritime chaparral, in which federally listed pallid manzanita grows. Disturbance and thinning of maritime chaparral communities will almost certainly open the way for invasive plants to establish themselves where the present, native vegetation now largely excludes them. Rather than "shrubland islands" or thinning, eradication of the *Eucalyptus globulus* grove next to the parking lot, with hand felling of individual Monterey pines in the preserve, will eliminate what little fire risk now exists in Huckleberry Botanic Preserve.



*Dedicated to the preservation of California native flora*

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The maps and polygons included in the FEMA EIS lack sufficient detail even to distinguish the labyrinthine boundary of Huckleberry with various private property owners uphill of the park. It is possible to see PG&E towers in the EIS aerial photos, but impossible to find the low, yellow lane of dead exotic grasses seen easily at ground level. All the coastal scrub and maritime chaparral plants in surrounding parkland retain their moisture and remain green as ever into the summer. The exotic, annual grassland that grew in after PG&E "tree work" below their tower presents the most flammable vegetation in the area. The chapter's monthly restoration crew at Huckleberry has not found any perennial bunchgrasses in the PG&E clearance area, even though native, perennial bunchgrasses now grow only a few meters away in undisturbed areas.

EBCNPS is concerned that in the vegetation management goals<sup>9</sup> for the Huckleberry RTA's none of them mention the maritime chaparral as a management goal. The maritime chaparral is mentioned to exist there in the description of the RTA, but not as a vegetation management goal. Palid Manzanita is of course a plant worthy of protection, but it is important not to overlook its native habitat (maritime chaparral) when considering how to best preserve the species.

-Janet Gawthrop  
Restoration Committee Chair, EBCNPS

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EBCNPS appreciates the consideration of these comments and will look forward to following this project in the future. Please do not hesitate to contact us with questions at [conservation@ebcnps.org](mailto:conservation@ebcnps.org) or by phone at (510) 734 0335.

Sincerely,

Jean Robertson  
Chair, Conservation Committee  
East Bay Chapter,  
California Native Plant Society

<sup>9</sup> Biological Opinion for the Proposed Federal Emergency Management Agency (FEMA) Hazardous Fire Risk Reduction Project in the East Bay Hills of Alameda and Contra Costa Counties, California (HMGP 1731-16-34, PDM-PJ-09-CA-2005-003, PDM-PJ-09-CA-2005-11, and PDM-PJ-09-CA-2006-004). May 10, 2013. pp 29-30.





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## APPENDIX A: CEQA protected A-Ranked Plants known from the East Bay Hills - 2013

| East Bay CNPS Rarity Rank | California Rarity Rank | Scientific Name                                     | Common Name                                                    | Habitat                                                                                             |
|---------------------------|------------------------|-----------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| A1x                       | CEQA                   | <i>Acmispon denticulatus</i>                        | meadow trefoil                                                 | Riparian, Miscellaneous                                                                             |
| A1x                       | CEQA                   | <i>Acmispon junceus</i> var. <i>biolettii</i>       | rush lotus                                                     | Chaparral, Sand, Sandstone                                                                          |
| A2                        | CEQA                   | <i>Adiantum aleuticum</i>                           | five-finger fern                                               | Riparian                                                                                            |
| A1                        | CEQA                   | <i>Agoseris apargioides</i> var. <i>apargioides</i> | seaside agoseris                                               | Forest, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Sand, Sandstone               |
| A1                        | CEQA                   | <i>Agoseris apargioides</i> var. <i>unknown</i>     | seaside agoseris                                               | Miscellaneous                                                                                       |
| A2                        | CEQA                   | <i>Agrostis hallii</i>                              | Hall's bent grass                                              | Forest, Woodland<br>Open Dry Slope, Serpentine or Serpentine-derived soils,                         |
| A2                        | CEQA                   | <i>Allium amplexans</i>                             | narrow-leaved onion                                            | Woodland, Miscellaneous<br>Rock, Tallus, Scree, Serpentine or Serpentine-derived soils              |
| A1                        | CEQA                   | <i>Allium falcatifolium</i>                         | sickle-leaved onion                                            |                                                                                                     |
| A2                        | CEQA                   | <i>Alnus rubra</i>                                  | red alder                                                      | Riparian                                                                                            |
| A2                        | CEQA                   | <i>Amaranthus californicus</i>                      | Californian amaranth                                           | Miscellaneous Wetlands                                                                              |
| A2                        | CEQA                   | <i>Amaranthus powellii</i>                          | Powell's amaranth                                              | Miscellaneous                                                                                       |
| A1                        | CEQA                   | <i>Ammannia coccinea</i>                            | long-leaved ammannia                                           | Riparian, Miscellaneous Wetlands                                                                    |
|                           | 4.2<br>S3.2(CEQA)      |                                                     |                                                                |                                                                                                     |
| *A1x                      | G3                     | <i>Amsinckia douglasiana</i>                        | Douglas' fiddleneck                                            | Open Dry Slope, Rock, Tallus, Scree                                                                 |
| A2                        | CEQA                   | <i>Amsinckia eastwoodiae</i>                        | Eastwood's fiddleneck                                          | Grassland (Annual or Perennial), Miscellaneous                                                      |
|                           | 1B.2<br>S2(CEQA)       |                                                     |                                                                |                                                                                                     |
| *A2                       | G2?                    | <i>Amsinckia lunaris</i>                            | bent-flowered fiddleneck<br>desert fiddleneck, devil's lettuce | Grassland (Annual or Perennial), Woodland, Miscellaneous                                            |
| A2                        | CEQA                   | <i>Amsinckia tessellata</i> var. <i>tessellata</i>  | lettuce                                                        | Grassland (Annual or Perennial), Miscellaneous                                                      |
| A1                        | CEQA                   | <i>Anagallis minima</i>                             | chaffweed                                                      | Vernal Pool, Miscellaneous Wetlands                                                                 |
|                           | 4.2<br>S3.2?(CEQA)     |                                                     |                                                                |                                                                                                     |
| *A2                       | G5?T3T4                | <i>Androsace elongata</i> subsp. <i>acuta</i>       | California androsace                                           | Open Dry Slope, Grassland (Annual or Perennial)                                                     |
| A2                        | CEQA                   | <i>Anisocarpus madioides</i>                        | woodland tarweed,<br>woodland madia                            | Forest, Redwood Forest, Woodland                                                                    |
| A1x                       | CEQA                   | <i>Anthoxanthum occidentale</i>                     | California sweet grass,<br>vanilla grass                       | Forest, Redwood Forest                                                                              |
| A2                        | CEQA                   | <i>Apocynum cannabinum</i>                          | dogbane, Indian-hemp                                           | Freshwater Marsh, Riparian                                                                          |
| A1x                       | CEQA                   | <i>Arctostaphylos crustacea</i> subsp. <i>rosei</i> | Rose's manzanita                                               | Chaparral, Sand, Sandstone                                                                          |
|                           | 1B.1<br>S1(CEQA)       |                                                     |                                                                |                                                                                                     |
| *A1                       | G1<br>CE<br>FT         | <i>Arctostaphylos pallida</i>                       | pallid manzanita                                               | Chaparral, Sand, Sandstone                                                                          |
| A2                        | CEQA                   | <i>Asarum caudatum</i>                              | wild-ginger                                                    | Forest, Redwood Forest<br>Chaparral, Grassland (Annual or Perennial), Rock, Tallus, Scree, Woodland |
| A1                        | CEQA                   | <i>Asclepias cordifolia</i>                         | purple milkweed                                                |                                                                                                     |
| A2                        | CEQA                   | <i>Asclepias speciosa</i>                           | showy milkweed,<br>milkweed                                    | Miscellaneous                                                                                       |
|                           | 1B.2<br>S2(CEQA)       |                                                     |                                                                |                                                                                                     |
| *A1                       | G2T2                   | <i>Astragalus tener</i> var. <i>tener</i>           | alkali milkvetch                                               | Alkali Areas, Grassland (Annual or Perennial), Vernal Pool, Miscellaneous Wetlands                  |



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|     |                            |                                                             |                                                 |                                                                                                                                                 |
|-----|----------------------------|-------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|     | 1B.2<br>S2(CEQA)<br>G2     | <i>Atriplex joaquinana</i>                                  | San Joaquin spearscale,<br>San Joaquin saltbush | Alkali Areas, Grassland (Annual or Perennial),<br>Miscellaneous Wetlands                                                                        |
| *A2 | CEQA                       | <i>Atriplex lentiformis</i>                                 | big saltbush                                    | Alkali Areas, Scrub (Coastal or Interior)                                                                                                       |
|     | 1B.2<br>S2(CEQA)<br>G3G4T2 | <i>Balsamorhiza macrolepis</i>                              | big-scale balsamroot                            | Grassland (Annual or Perennial), Serpentine or<br>Serpentine-derived soils                                                                      |
| *A1 | CEQA                       | <i>Berberis nervosa</i>                                     | Oregon grape                                    | Forest                                                                                                                                          |
| A1  | CEQA                       | <i>Brodiaea terrestris</i> subsp. <i>terrestris</i>         | dwarf brodiaea                                  | Grassland (Annual or Perennial), Woodland,<br>Miscellaneous Wetlands                                                                            |
| A2  | CEQA                       | <i>Brodiaea terrestris</i> subsp. <i>terrestris</i>         | dwarf brodiaea                                  | Miscellaneous Wetlands                                                                                                                          |
| A1? | CEQA                       | <i>Calamagrostis koelerioides</i>                           | tufted pine grass                               | Open Dry Slope, Grassland (Annual or Perennial),<br>Miscellaneous                                                                               |
| A1x | CEQA                       | <i>Calamagrostis nutkaensis</i>                             | Pacific reed grass                              | Coastal Strand, Freshwater Marsh, Forest,<br>Redwood Forest                                                                                     |
|     | 4.2<br>S3.2?(CEQA)<br>G4   | <i>Calandrinia breweri</i>                                  | Brewer's calandrinia                            | Burns, Chaparral, Scrub (Coastal or Interior)                                                                                                   |
| *A2 | CEQA                       | <i>Calandrinia breweri</i>                                  | Brewer's calandrinia                            | Burns, Chaparral, Scrub (Coastal or Interior)                                                                                                   |
|     | 1B.1<br>S2(CEQA)<br>G2     | <i>California macrophylla</i>                               | round-leaved filaree                            | Grassland (Annual or Perennial), Scrub<br>(Coastal or Interior)                                                                                 |
| *A2 | CEQA                       | <i>California macrophylla</i>                               | round-leaved filaree                            | Grassland (Annual or Perennial), Scrub<br>(Coastal or Interior)                                                                                 |
|     | 1B.2<br>S2.1(CEQA)<br>G2   | <i>Calochortus pulchellus</i>                               | Mount Diablo fairy-<br>lantern                  | Chaparral, Serpentine or Serpentine-derived soils,<br>Woodland                                                                                  |
| *A2 | CEQA                       | <i>Calochortus pulchellus</i>                               | Mount Diablo fairy-<br>lantern                  | Chaparral, Serpentine or Serpentine-derived soils,<br>Woodland                                                                                  |
|     | 4.2<br>S3.2(CEQA)<br>G3    | <i>Calochortus umbellatus</i>                               | Oakland star-tulip                              | Chaparral, Scrub (Coastal or Interior), Woodland<br>Rock, Tallus, Scree, Scrub (Coastal or Interior),<br>Serpentine or Serpentine-derived soils |
| *A2 | CEQA                       | <i>Calochortus umbellatus</i>                               | Oakland star-tulip                              | Chaparral, Scrub (Coastal or Interior), Woodland<br>Rock, Tallus, Scree, Scrub (Coastal or Interior),<br>Serpentine or Serpentine-derived soils |
| A1  | CEQA                       | <i>Calycadenia multiglandulosa</i>                          | sticky calycadenia                              | Chaparral, Serpentine or Serpentine-derived soils,<br>Scrub (Coastal or Interior)                                                               |
| A2  | CEQA                       | <i>Calystegia malacophylla</i> subsp.<br><i>pedicellata</i> | woolly morning-glory                            | Scrub (Coastal or Interior)                                                                                                                     |
| A2  | CEQA                       | <i>Calystegia sepium</i> subsp. <i>limnophila</i>           | hedge bindweed                                  | Miscellaneous Wetlands                                                                                                                          |
| A2  | CEQA                       | <i>Camissoniopsis intermedia</i>                            | small primrose                                  | Burns, Scrub (Coastal or Interior)                                                                                                              |
| A2  | CEQA                       | <i>Camissoniopsis micrantha</i>                             | small primrose                                  | Coastal Strand, Dry Wash, Sand, Sandstone                                                                                                       |
| A1  | CEQA                       | <i>Carex aquatilis</i> var. <i>dives</i>                    | Sitka sedge                                     | Miscellaneous Wetlands                                                                                                                          |
| A1  | CEQA                       | <i>Carex brevicaulis</i>                                    | short-stemmed sedge                             | Rock, Tallus, Scree, Sand, Sandstone                                                                                                            |
| A2  | CEQA                       | <i>Carex densa</i>                                          | dense sedge                                     | Miscellaneous, Miscellaneous Wetlands                                                                                                           |
| A1  | CEQA                       | <i>Carex globosa</i>                                        | round-fruited sedge                             | Miscellaneous<br>Forest, Grassland (Annual or Perennial),<br>Miscellaneous                                                                      |
| A1x | CEQA                       | <i>Carex gracilior</i>                                      | slender sedge                                   | Wetlands, Miscellaneous                                                                                                                         |
| A1  | CEQA                       | <i>Carex harfordii</i>                                      | Harford's sedge,<br>Monterey sedge              | Miscellaneous Wetlands                                                                                                                          |
| A1  | CEQA                       | <i>Carex laeviculmis</i>                                    | smooth-stemmed sedge                            | Woodland                                                                                                                                        |
| A1  | CEQA                       | <i>Carex lenticularis</i> var. <i>lipocarpa</i>             | few-ribbed sedge                                | Miscellaneous Wetlands                                                                                                                          |
| A1  | CEQA                       | <i>Carex leptopoda</i>                                      | slender-footed sedge,<br>short-scaled sedge     | Miscellaneous Wetlands, Miscellaneous                                                                                                           |
| A2  | CEQA                       | <i>Carex multicostata</i>                                   | many-ribbed sedge                               | Miscellaneous                                                                                                                                   |
| A2  | CEQA                       | <i>Carex obnupta</i>                                        | slough sedge                                    | Miscellaneous Wetlands                                                                                                                          |
| A1  | CEQA                       | <i>Carex pellita</i>                                        | woolly sedge                                    | Miscellaneous Wetlands                                                                                                                          |
| A2  | CEQA                       | <i>Carex senta</i>                                          | western rough sedge,<br>rough sedge             | Riparian, Miscellaneous Wetlands                                                                                                                |
| A1  | CEQA                       | <i>Carex unilateralis</i>                                   | one-sided sedge                                 | Miscellaneous                                                                                                                                   |



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|     |                                  |                                            |                                                |                                                                                              |
|-----|----------------------------------|--------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------|
|     | 4.2<br>S3(CEQA)<br>G4T3T4        | Castilleja ambigua subsp. ambigua          | Johnny-nip<br>wavy-leaved indian<br>paintbrush | Coastal Bluff, Grassland (Annual or Perennial)                                               |
| A2  | CEQA                             | Castilleja applegatei subsp. martinii      | owl's-clover                                   | Chaparral, Scrub (Coastal or Interior)                                                       |
| A1  | CEQA                             | Castilleja exserta subsp. latifolia        | Franciscan indian<br>paintbrush                | Coastal Bluff, Sand, Sandstone                                                               |
| A1  | CEQA                             | Castilleja subinclusa subsp. franciscana   | blue blossom, California<br>lilac              | Chaparral, Scrub (Coastal or Interior)                                                       |
| A2  | CEQA                             | Ceanothus thyrsiflorus var. thyrsiflorus   |                                                | Miscellaneous                                                                                |
|     | 1B.2<br>S2(CEQA)<br>G4T2         | Centromadia parryi subsp. congdonii        | Congdon's tarplant                             | Alkali Areas, Grassland (Annual or Perennial),<br>Miscellaneous Wetlands                     |
| *A2 | CEQA                             | Cheilanthes gracillima                     | lace fern                                      | Rock, Tallus, Scree                                                                          |
| A1  | CEQA                             | Chenopodium rubrum var. unknown            | red pigweed, red<br>goosefoot                  | Alkali Areas                                                                                 |
|     | 1B.2<br>S1.1(CEQA)<br>G2T1<br>CR | Chloropyron molle subsp. molle             | soft salty bird's-beak,<br>soft bird's-beak    | Brackish Marsh, Salt Marsh                                                                   |
| *A2 | FE                               |                                            |                                                | Chaparral, Open Dry Slope, Grassland (Annual or<br>Perennial), Woodland, Miscellaneous       |
| A2  | CEQA                             | Chorizanthe membranacea                    | pink spineflower                               |                                                                                              |
| A1  | CEQA                             | Chorizanthe polygonoides var. polygonoides | knotweed spineflower                           | Gravel, Sand, Sandstone                                                                      |
| A2  | CEQA                             | Chrysopsis chrysophylla var. minor         | golden chinquapin                              | Chaparral, Forest, Sand, Sandstone                                                           |
|     | 1B.2<br>S2.2(CEQA)<br>G2         | Cirsium andrewsii                          | Franciscan thistle                             | Freshwater Marsh, Serpentine or Serpentine-derived<br>soils, Miscellaneous                   |
| *A1 | CEQA                             | Cirsium quercetorum                        | brownie thistle                                | Grassland (Annual or Perennial), Woodland                                                    |
| A2  | CEQA                             | Cirsium remotifolium var. odontolepis      | remote-leaved thistle                          | Forest, Grassland (Annual or Perennial), Serpentine or<br>Serpentine-derived soils, Woodland |
| A1  | CEQA                             | Clarkia biloba subsp. biloba               | lobed godetia                                  | Serpentine or Serpentine-derived soils, Woodland                                             |
|     | 4.3<br>S3.3(CEQA)<br>G5?T3       | Clarkia concinna subsp. automixa           | Santa Clara red ribbons                        | Woodland                                                                                     |
|     | 1B.1<br>S1.1(CEQA)<br>G1<br>CE   | Clarkia franciscana                        | Presidio clarkia                               | Serpentine or Serpentine-derived soils                                                       |
| *A1 | FE                               |                                            |                                                | Grassland (Annual or Perennial)                                                              |
| A2  | CEQA                             | Clarkia purpurea subsp. purpurea           | purple clarkia                                 |                                                                                              |
| A2  | CEQA                             | Clarkia purpurea subsp. viminea            | large godetia                                  | Miscellaneous<br>Rock, Tallus, Scree, Serpentine or Serpentine-<br>derived soils             |
| A2  | CEQA                             | Claytonia gypsophiloides                   | coast range montia                             |                                                                                              |
| A1  | CEQA                             | Clintonia andrewsiana                      | red clintonia                                  | Redwood Forest                                                                               |
| A1  | CEQA                             | Collinsia bartsiiifolia var. stricta       | white Chinese houses                           | Sand, Sandstone                                                                              |
| A2  | CEQA                             | Collinsia parviflora                       | blue-eyed Mary                                 | Miscellaneous                                                                                |
| A1  | CEQA                             | Collomia heterophylla                      | variable-leaf collomia                         | Rock, Tallus, Scree, Sand, Sandstone                                                         |
| A2  | CEQA                             | Corallorhiza maculata var. maculata        | spotted coralroot                              | Forest, Woodland                                                                             |
| A1  | CEQA                             | Corallorhiza striata                       | striped coralroot                              | Forest, Woodland                                                                             |
| A1  | CEQA                             | Cornus glabrata                            | brown dogwood                                  | Riparian                                                                                     |
| A1  | CEQA                             | Cryptantha clevelandii var. florosa        | Cleveland's cryptantha                         | Chaparral, Rock, Tallus, Scree, Sand, Sandstone,<br>Serpentine or Serpentine-derived soils   |



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|     |      |                                                           |                                                    |                                                                                                                             |
|-----|------|-----------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| A1  | CEQA | <i>Cryptantha intermedia</i> var. <i>intermedia</i>       | common cryptantha                                  | Forest, Rock, Tallus, Scree, Sand, Sandstone, Woodland                                                                      |
| A1  | CEQA | <i>Cryptantha micromeres</i>                              | minute-flowered cryptantha                         | Burns, Chaparral, Woodland                                                                                                  |
| A1  | CEQA | <i>Cryptantha microstachys</i>                            | Tejon cryptantha                                   | Chaparral, Woodland                                                                                                         |
| A2  | CEQA | <i>Cryptantha muricata</i> var. <i>unknown</i>            | prickly cryptantha                                 | Rock, Tallus, Scree, Sand, Sandstone                                                                                        |
| A2  | CEQA | <i>Cryptantha torreyana</i> var. <i>pumila</i>            | Torrey's cryptantha                                | Forest, Open Dry Slope                                                                                                      |
| A2  | CEQA | <i>Cuscuta californica</i> var. <i>californica</i>        | California dodder                                  | Chaparral, Grassland (Annual or Perennial), Miscellaneous                                                                   |
| A2  | CEQA | <i>Cyperus erythrorhizos</i>                              | red-rooted cyperus                                 | Riparian                                                                                                                    |
| A2  | CEQA | <i>Cyperus niger</i>                                      | black sedge                                        | Miscellaneous, Miscellaneous Wetlands                                                                                       |
| A1  | CEQA | <i>Cyperus odoratus</i>                                   | coarse cyperus                                     | Miscellaneous Wetlands                                                                                                      |
| A2  | CEQA | <i>Datisca glomerata</i>                                  | durango root                                       | Dry Wash, Riparian                                                                                                          |
| A2  | CEQA | <i>Deinandra corymbosa</i>                                | coast tarweed                                      | Coastal Bluff, Grassland (Annual or Perennial)                                                                              |
| A2  | CEQA | <i>Delphinium californicum</i> subsp. <i>californicum</i> | coast larkspur, California larkspur                | Chaparral                                                                                                                   |
| A2  | CEQA | <i>Dendromecon rigida</i>                                 | bush poppy                                         | Burns, Chaparral, Scrub (Coastal or Interior)                                                                               |
| A2  | CEQA | <i>Deschampsia cespitosa</i> subsp. <i>holciformis</i>    | tufted hairgrass                                   | Miscellaneous Wetlands                                                                                                      |
| A2  | CEQA | <i>Dicentra formosa</i>                                   | Pacific bleeding heart, bleeding heart             | Forest, Redwood Forest, Miscellaneous                                                                                       |
| A1? | CEQA | <i>Dichelostemma volubile</i>                             | twining brodiaea, snake lily                       | Scrub (Coastal or Interior), Woodland                                                                                       |
|     |      | 1B.2                                                      |                                                    |                                                                                                                             |
|     |      | S2S3(CEQA)                                                |                                                    |                                                                                                                             |
| *A2 | G2G3 | <i>Dirca occidentalis</i>                                 | western leatherwood                                | Forest, Riparian, Scrub (Coastal or Interior)                                                                               |
| A1  | CEQA | <i>Dudleya cymosa</i> subsp. <i>cymosa</i>                | spreading dudleya                                  | Rock, Tallus, Scree, Woodland                                                                                               |
| A1  | CEQA | <i>Dudleya farinosa</i>                                   | bluff lettuce, powdery dudleya                     | Rock, Tallus, Scree                                                                                                         |
| A2  | CEQA | <i>Echinodorus berteroi</i>                               | burhead                                            | Freshwater Marsh                                                                                                            |
| A1  | CEQA | <i>Eclipta prostrata</i>                                  | false daisy                                        | Miscellaneous Wetlands                                                                                                      |
| A2  | CEQA | <i>Ehrendorferia chrysantha</i>                           | golden ear-drops                                   | Burns, Open Dry Slope, Miscellaneous                                                                                        |
| A1  | CEQA | <i>Elatine brachysperma</i>                               | waterwort                                          | Freshwater Marsh, Miscellaneous Wetlands                                                                                    |
| A1  | CEQA | <i>Elatine californica</i>                                | waterwort                                          | Freshwater Marsh                                                                                                            |
| A2  | CEQA | <i>Elymus elymoides</i> var. <i>elymoides</i>             | squirreltail                                       | Grassland (Annual or Perennial)                                                                                             |
| A2  | CEQA | <i>Elymus stebbinsi</i>                                   | Stebbins' wheat grass, Parish's wheat-grass        | Chaparral, Open Dry Slope, Forest                                                                                           |
| A2  | CEQA | <i>Elymus xhanseni</i>                                    | Hansen squirreltail                                | Grassland (Annual or Perennial)                                                                                             |
| A2  | CEQA | <i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>   | whispering bells                                   | Burns, Chaparral, Rock, Tallus, Scree, Scrub (Coastal or Interior), Serpentine or Serpentine-derived soils, Sand, Sandstone |
| A1  | CEQA | <i>Eragrostis mexicana</i> subsp. <i>virescens</i>        | Orcutt's eragrostis                                | Riparian, Sand, Sandstone, Miscellaneous                                                                                    |
| A2  | CEQA | <i>Ericameria arborescens</i>                             | golden-fleece                                      | Chaparral, Forest, Woodland                                                                                                 |
| A2  | CEQA | <i>Erigeron petrophilus</i> var. <i>petrophilus</i>       | rock daisy                                         | Rock, Tallus, Scree, Serpentine or Serpentine-derived soils                                                                 |
| A2  | CEQA | <i>Eriogonum angulosum</i>                                | angle-stem wild buckwheat, angle-stemmed eriogonum | Sand, Sandstone, Miscellaneous                                                                                              |
| A2  | CEQA | <i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>      | leafy California buckwheat, California buckwheat   | Open Dry Slope                                                                                                              |
|     |      | 1B.2                                                      |                                                    |                                                                                                                             |
|     |      | S2(CEQA)                                                  |                                                    |                                                                                                                             |
| *A1 | G5T2 | <i>Eriogonum luteolum</i> var. <i>caninum</i>             | Tiburon buckwheat                                  | Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils                                                     |
| A2  | CEQA | <i>Eriogonum luteolum</i> var. <i>luteolum</i>            | golden-carpet wild buckwheat, golden carpet        | Gravel, Serpentine or Serpentine-derived soils, Sand, Sandstone                                                             |
| A2  | CEQA | <i>Eryngium armatum</i>                                   | coastal button-celery, coast coyote-thistle        | Vernal Pool, Miscellaneous Wetlands                                                                                         |



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| A2   | CEQA                           | <i>Eschscholzia caespitosa</i>                          | tufted poppy                                        | Chaparral                                                                                                   |
| A1   | CEQA                           | <i>Euonymus occidentalis</i> var. <i>occidentalis</i>   | burning bush                                        | Riparian                                                                                                    |
| A2   | CEQA                           | <i>Festuca elmeri</i>                                   | Elmer's fescue                                      | Riparian                                                                                                    |
| A2   | CEQA                           | <i>Fraxinus dipetala</i>                                | California ash, flowering ash                       | Chaparral, Woodland, Miscellaneous                                                                          |
|      | 4.2<br>S3.2(CEQA)<br>G3        |                                                         |                                                     |                                                                                                             |
| *A2  |                                | <i>Fritillaria agrestis</i>                             | stinkbells                                          | Alkali Areas, Grassland (Annual or Perennial)                                                               |
|      | 1B.2<br>S2.2(CEQA)<br>G2       |                                                         |                                                     |                                                                                                             |
| *A1  |                                | <i>Fritillaria liliacea</i>                             | fragrant fritillary                                 | Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Vernal Pool                        |
|      | 4.2<br>S3.2(CEQA)<br>G5T3      |                                                         |                                                     |                                                                                                             |
| *A2  |                                | <i>Galium andrewsii</i> subsp. <i>gatense</i>           | phlox-leaf serpentine bedstraw, serpentine bedstraw | Chaparral, Serpentine or Serpentine-derived soils, Woodland                                                 |
| A1   | CEQA                           | <i>Galium trifidum</i> subsp. <i>columbianum</i>        | trifid bedstraw                                     | Miscellaneous Wetlands                                                                                      |
| A1   | CEQA                           | <i>Gaultheria shallon</i>                               | salal                                               | Forest, Redwood Forest                                                                                      |
| A2   | CEQA                           | <i>Gilia achilleifolia</i> subsp. <i>unknown</i>        | California gilia                                    | Miscellaneous                                                                                               |
| A2   | CEQA                           | <i>Gilia capitata</i> subsp. <i>unknown</i>             | blue field gilia                                    | Rock, Tallus, Scree, Sand, Sandstone                                                                        |
| A2   | CEQA                           | <i>Githopsis diffusa</i> subsp. <i>robusta</i>          | southern bluecup                                    | Burns, Miscellaneous<br>Alkali Areas, Salt Marsh, Miscellaneous Wetlands                                    |
| A1   | CEQA                           | <i>Glaux maritima</i>                                   | sea-milkwort                                        |                                                                                                             |
| A1   | CEQA                           | <i>Glyceria leptostachya</i>                            | narrow manna grass, Davy's mannagrass               | Freshwater Marsh, Riparian                                                                                  |
| A2   | CEQA                           | <i>Glyceria xoccidentalis</i>                           | western manna grass                                 | Miscellaneous Wetlands                                                                                      |
| A2   | CEQA                           | <i>Helenium bigelovii</i>                               | Bigelow's sneezeweed                                | Brackish Marsh, Freshwater Marsh                                                                            |
| A1   | CEQA                           | <i>Helianthella californica</i> var. <i>californica</i> | California helianthella                             | Grassland (Annual or Perennial), Woodland                                                                   |
|      | 1B.2<br>S2(CEQA)<br>G2         |                                                         |                                                     |                                                                                                             |
| *A2  |                                | <i>Helianthella castanea</i>                            | Diablo helianthella                                 | Chaparral, Grassland (Annual or Perennial), Woodland                                                        |
| A2   | CEQA                           | <i>Hesperovax acaulis</i> var. <i>ambusticola</i>       | fire evax                                           | Burns, Open Dry Slope, Miscellaneous                                                                        |
|      | 4.2<br>S3.2(CEQA)<br>G3        |                                                         |                                                     |                                                                                                             |
| *A2  |                                | <i>Hesperovax caulescens</i>                            | hogwallow starfish                                  | Vernal Pool<br>Grassland (Annual or Perennial), Rock, Tallus, Scree, Serpentine or Serpentine-derived soils |
| A2   | CEQA                           | <i>Hesperolinon californicum</i>                        | California dwarf flax                               | Dry Wash, Grassland (Annual or Perennial), Sand, Sandstone                                                  |
| A1x  | CEQA                           | <i>Hesperomecon linearis</i>                            | narrow-leaved meconella                             |                                                                                                             |
| A2   | CEQA                           | <i>Heterocodon rariiflorum</i>                          | heterocodon                                         | Miscellaneous Wetlands                                                                                      |
| A1   | CEQA                           | <i>Heterotheca oregona</i> var. <i>scaberrima</i>       | Oregon goldenaster                                  | Dry Wash                                                                                                    |
| A1x  | CEQA                           | <i>Hoita orbicularis</i>                                | round-leaved psoralea                               | Riparian, Miscellaneous                                                                                     |
|      | 1B.1<br>S2(CEQA)<br>G2         |                                                         |                                                     |                                                                                                             |
| *A1x |                                | <i>Hoita strobilina</i>                                 | Loma Prieta hoita                                   | Chaparral, Woodland                                                                                         |
|      | 1B.1<br>S1.1(CEQA)<br>G1<br>CE |                                                         |                                                     |                                                                                                             |
| *A1  | FT                             | <i>Holocarpha macradenia</i>                            | Santa Cruz tarplant                                 | Grassland (Annual or Perennial)                                                                             |
| A1   | CEQA                           | <i>Holozonia filipes</i>                                | whitecrown, holozonia                               | Dry Wash, Riparian<br>Grassland (Annual or Perennial), Scrub (Coastal or Interior)                          |
| A1   | CEQA                           | <i>Horkelia californica</i> var. <i>californica</i>     | California horkelia                                 |                                                                                                             |





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| A2    | CEQA               | Horkelia californica var. elata           | tall horkelia                                                                                            | Riparian, Miscellaneous Wetlands                                                                                                                       |
| A1?   | CEQA               | Hosackia oblongifolia var. oblongifolia   | narrow-leaved lotus                                                                                      | Freshwater Marsh                                                                                                                                       |
| A1    | CEQA               | Hosackia stipularis var. stipularis       | stipulate lotus                                                                                          | Chaparral                                                                                                                                              |
| A1    | CEQA               | Hypericum scouleri                        | Scouler's st. john's wort, Scouler's St. John's wort                                                     | Freshwater Marsh, Riparian                                                                                                                             |
| A2    | CEQA               | Iris douglasiana                          | Douglas iris                                                                                             | Miscellaneous                                                                                                                                          |
|       | 4.2<br>S3.2(CEQA)  |                                           |                                                                                                          |                                                                                                                                                        |
| *A1   | G3                 | Iris longipetala                          | coast iris                                                                                               | Miscellaneous                                                                                                                                          |
|       | 1B.1<br>S1.1(CEQA) |                                           |                                                                                                          |                                                                                                                                                        |
| *A1x? | G1                 | Isocoma arguta                            | Carquinez goldenbush                                                                                     | Brackish Marsh                                                                                                                                         |
| A2    | CEQA               | Isoetes howellii                          | Howell's quillwort                                                                                       | Miscellaneous Wetlands                                                                                                                                 |
|       | 1B.1<br>S1.1(CEQA) |                                           |                                                                                                          |                                                                                                                                                        |
| *A2   | G1                 | Juglans hindsii                           | northern California black walnut, Northern California black                                              | Riparian                                                                                                                                               |
| A2    | CEQA               | Juncus articulatus subsp. articulatus     | jointed rush                                                                                             | Miscellaneous                                                                                                                                          |
| A1    | CEQA               | Juncus oxymeris                           | pointed rush                                                                                             | Scrub (Coastal or Interior), Miscellaneous                                                                                                             |
| A2    | CEQA               | Juncus phaeocephalus var. unknown         | brown-headed rush                                                                                        | Miscellaneous Wetlands                                                                                                                                 |
| A1    | CEQA               | Kopsiopsis strobilacea                    | California ground-cone                                                                                   | Chaparral, Sand, Sandstone, Woodland                                                                                                                   |
|       | 1B.2<br>S2.2(CEQA) |                                           |                                                                                                          |                                                                                                                                                        |
| *A2   | G5T2               | Lathyrus jepsonii var. jepsonii           | delta tule pea, Delta tule pea                                                                           | Brackish Marsh, Freshwater Marsh                                                                                                                       |
| A2    | CEQA               | Layia chrysanthemoides                    | smooth layia                                                                                             | Grassland (Annual or Perennial)                                                                                                                        |
| A2    | CEQA               | Layia gaillardiioides                     | woodland layia                                                                                           | Scrub (Coastal or Interior), Woodland                                                                                                                  |
| A1x   | CEQA               | Layia glandulosa                          | white layia                                                                                              | Sand, Sandstone                                                                                                                                        |
| A2    | CEQA               | Layia hieracioides                        | tall layia                                                                                               | Miscellaneous                                                                                                                                          |
| A2    | CEQA               | Lepidium dictyotum                        | alkali pepper-grass                                                                                      | Alkali Areas                                                                                                                                           |
| A1x   | CEQA               | Lepidium oblongum                         | wayside pepper-grass                                                                                     | Miscellaneous                                                                                                                                          |
|       | 4.2<br>S3.2(CEQA)  |                                           |                                                                                                          |                                                                                                                                                        |
| *A1   | G3                 | Leptosiphon acicularis                    | bristly leptosiphon, bristly linanthus                                                                   | Chaparral, Grassland (Annual or Perennial), Woodland                                                                                                   |
|       | 4.2<br>S3.2(CEQA)  |                                           |                                                                                                          |                                                                                                                                                        |
| *A1   | G3                 | Leptosiphon grandiflorus                  | large-flowered leptosiphon, large-flowered linanthus, flax-flowered linanthus, flax-flowered leptosiphon | Grassland (Annual or Perennial), Gravel, Scrub (Coastal or Interior), Sand, Sandstone, Serpentine or Serpentine-derived soils, Woodland, Miscellaneous |
| A1    | CEQA               | Leptosiphon liniflorus                    | leptosiphon                                                                                              | Miscellaneous                                                                                                                                          |
| A2    | CEQA               | Leptosiphon pygmaeus subsp. continentalis | pygmy linanthus, pygmy leptosiphon                                                                       | Miscellaneous<br>Chaparral, Grassland (Annual or Perennial), Serpentine or Serpentine-derived soils, Woodland                                          |
| A1    | CEQA               | Leptosyne stillmanii                      | Stillman's coreopsis                                                                                     | Coastal Bluff, Grassland (Annual or Perennial), Scrub (Coastal or Interior), Woodland                                                                  |
| A1    | CEQA               | Ligusticum apiifolium                     | Pacific lovage                                                                                           | Freshwater Marsh, Riparian                                                                                                                             |
| A2    | CEQA               | Lilium pardalinum subsp. pardalinum       | leopard lily                                                                                             | Freshwater Marsh, Riparian                                                                                                                             |
| A1    | CEQA               | Limnanthes douglasii subsp. douglasii     | meadowfoam                                                                                               | Vernal Pool, Miscellaneous Wetlands                                                                                                                    |
| A2    | CEQA               | Limosella acaulis                         | southern mudwort                                                                                         | Miscellaneous Wetlands                                                                                                                                 |
| A2    | CEQA               | Lithophragma bolanderi                    | Bolander starflower                                                                                      | Miscellaneous                                                                                                                                          |
| A1?   | CEQA               | Ludwigia hexapetala                       | uruguayan primrose-willow, ludwigia                                                                      | Miscellaneous Wetlands                                                                                                                                 |
| A1    | CEQA               | Lupinus affinis                           | lupine                                                                                                   | Miscellaneous                                                                                                                                          |



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| A2  | CEQA  | Lupinus arboreus                            | yellow bush lupine                                                             | Coastal Bluff, Coastal Strand, Sand, Sandstone                                                                                                                                                                                                                                             |
| A1  | CEQA  | Lupinus luteolus                            | butter lupine                                                                  | Miscellaneous<br>Coastal Strand, Grassland (Annual or Perennial),<br>Sand, Sandstone                                                                                                                                                                                                       |
| A1  | CEQA  | Lupinus variicolor                          | bluff lupine                                                                   | Sand, Sandstone                                                                                                                                                                                                                                                                            |
| A2  | CEQA  | Malacothrix floccifera                      | woolly malacothrix                                                             | Burns, Chaparral, Woodland, Miscellaneous                                                                                                                                                                                                                                                  |
| A1  | CEQA  | Meconella californica                       | California meconella                                                           | Rock, Tallus, Scree                                                                                                                                                                                                                                                                        |
|     |       | 1B.1<br>S1.1(CEQA)                          |                                                                                |                                                                                                                                                                                                                                                                                            |
| *A2 | G2G3  | Meconella oregana                           | Oregon meconella                                                               | Grassland (Annual or Perennial), Miscellaneous                                                                                                                                                                                                                                             |
| A1? | CEQA  | Melica bulbosa                              | onion grass                                                                    | Forest, Rock, Tallus, Scree<br>Rock, Tallus, Scree, Scrub (Coastal or Interior),<br>Woodland                                                                                                                                                                                               |
| A2  | CEQA  | Mentzelia lindleyi                          | Lindley's blazing star                                                         | Woodland                                                                                                                                                                                                                                                                                   |
|     |       | 3.2<br>S3.2?(CEQA)                          | Mount Diablo<br>cottonseed, Mt. Diablo<br>cottonweed                           | Open Dry Slope, Grassland (Annual or Perennial),<br>Rock, Tallus, Scree                                                                                                                                                                                                                    |
| *A1 | G3    | Micropus amphibolus                         | slender cottonweed                                                             | Open Dry Slope, Miscellaneous                                                                                                                                                                                                                                                              |
| A1x | CEQA  | Micropus californicus var. subvestitus      | coast microseris                                                               | Coastal Bluff, Coastal Strand, Sand, Sandstone                                                                                                                                                                                                                                             |
| A1x | CEQA  | Microseris bigelovii                        | San Joaquin microseris                                                         | Grassland (Annual or Perennial), Vernal Pool                                                                                                                                                                                                                                               |
| A2  | CEQA  | Microseris campestris                       | elegant microseris                                                             | Grassland (Annual or Perennial), Vernal Pool                                                                                                                                                                                                                                               |
| A2  | CEQA  | Microseris elegans                          |                                                                                |                                                                                                                                                                                                                                                                                            |
|     |       | 4.2<br>S3.2(CEQA)                           |                                                                                |                                                                                                                                                                                                                                                                                            |
| *A2 | G3    | Microseris sylvatica                        | sylvan microseris                                                              | Grassland (Annual or Perennial), Woodland<br>Chaparral, Gravel, Rock, Tallus, Scree,<br>Serpentine or Serpentine-derived soils, Woodland<br>Chaparral, Open Dry Slope, Grassland (Annual or<br>Perennial), Rock, Tallus, Scree, Sand, Sandstone,<br>Serpentine or Serpentine-derived soils |
| A2  | CEQA  | Mimulus douglasii                           | Douglas monkeyflower                                                           | Chaparral, Forest<br>Forest, Rock, Tallus, Scree, Serpentine or<br>Serpentine-derived soils, Woodland                                                                                                                                                                                      |
| A2  | CEQA  | Minuartia californica                       | California sandwort<br>annual sandwort, least<br>sandwort                      |                                                                                                                                                                                                                                                                                            |
| A2  | CEQA  | Minuartia pusilla                           | large-leaved sandwort,<br>big-leaf sandwort                                    |                                                                                                                                                                                                                                                                                            |
| A2  | CEQA  | Moehringia macrophylla                      |                                                                                |                                                                                                                                                                                                                                                                                            |
|     |       | 3<br>S3?(CEQA)                              | San Antonio hills<br>monardella<br>fenestra monardella,<br>Fenestra monardella | Chaparral, Rock, Tallus, Scree, Woodland<br>Chaparral, Grassland (Annual or Perennial),<br>Serpentine or Serpentine-derived soils, Woodland<br>Chaparral, Forest, Rock, Tallus, Scree, Serpentine<br>or Serpentine-derived soils, Woodland                                                 |
| *A1 | G4T3Q | Monardella antonina subsp. antonina         | Shelton's monardella                                                           |                                                                                                                                                                                                                                                                                            |
| A2  | CEQA  | Monardella douglasii                        |                                                                                |                                                                                                                                                                                                                                                                                            |
| A1  | CEQA  | Monardella sheltonii                        |                                                                                |                                                                                                                                                                                                                                                                                            |
|     |       | 1B.2<br>S2.2(CEQA)                          |                                                                                |                                                                                                                                                                                                                                                                                            |
| *A2 | G5T2  | Monardella villosa subsp. globosa           | robust monardella                                                              | Chaparral, Woodland                                                                                                                                                                                                                                                                        |
|     |       | 1B.2<br>S2S3(CEQA)                          | woodland<br>woollythreads,<br>woodland monolopia                               | Chaparral, Grassland (Annual or Perennial),<br>Serpentine or Serpentine-derived soils, Woodland<br>Grassland (Annual or Perennial), Scrub (Coastal<br>or Interior), Woodland                                                                                                               |
| *A1 | G2G3  | Monolopia gracilens                         | linear-leaved montia                                                           | Forest, Redwood Forest, Scrub (Coastal or Interior)                                                                                                                                                                                                                                        |
| A1x | CEQA  | Montia linearis                             | common mouse-tail<br>white-flowered<br>navarretia                              | Freshwater Marsh, Vernal Pool                                                                                                                                                                                                                                                              |
| A2  | CEQA  | Morella californica                         | sticky navarretia                                                              | Vernal Pool<br>Freshwater Marsh, Grassland (Annual or Perennial),<br>Sand, Sandstone, Vernal Pool                                                                                                                                                                                          |
| A2  | CEQA  | Myosurus minimus subsp. minimus             | California broom-rape                                                          | Forest, Woodland                                                                                                                                                                                                                                                                           |
| A1  | CEQA  | Navarretia leucocephala subsp. leucocephala | redwood sorrel                                                                 | Redwood Forest<br>Chaparral, Grassland (Annual or Perennial), Scrub<br>(Coastal or Interior)                                                                                                                                                                                               |
| A1  | CEQA  | Navarretia viscidula                        | hairy wood-sorrel                                                              |                                                                                                                                                                                                                                                                                            |
| A2  | CEQA  | Orobanche vallicola                         |                                                                                |                                                                                                                                                                                                                                                                                            |
| A1  | CEQA  | Oxalis oregana                              |                                                                                |                                                                                                                                                                                                                                                                                            |
| A1  | CEQA  | Oxalis pilosa                               |                                                                                |                                                                                                                                                                                                                                                                                            |



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| A2   | CEQA                            | <i>Papaver californicum</i>                              | fire poppy                                                                                                                             | Burns, Woodland                                                                                        |
| A1   | CEQA                            | <i>Pediomelum californicum</i>                           | indian breadroot                                                                                                                       | Chaparral, Woodland                                                                                    |
| A2   | CEQA                            | <i>Penstemon heterophyllus</i> var. <i>purdyi</i>        | foothill penstemon                                                                                                                     | Chaparral, Forest, Grassland (Annual or Perennial)                                                     |
| A2   | CEQA                            | <i>Pentachaeta alsinoides</i>                            | tiny pentachaeta                                                                                                                       | Grassland (Annual or Perennial)                                                                        |
| A1   | CEQA                            | <i>Pentachaeta exilis</i> subsp. <i>exilis</i>           | meager pentachaeta                                                                                                                     | Grassland (Annual or Perennial)<br>Open Dry Slope, Rock, Tallus, Scree, Woodland,<br>Miscellaneous     |
| A2   | CEQA                            | <i>Perideridia oregana</i>                               | yampah<br>western sweet coltsfoot,                                                                                                     |                                                                                                        |
| A1   | CEQA                            | <i>Petasites frigidus</i> var. <i>palmaris</i>           | coltsfoot                                                                                                                              | Riparian, Redwood Forest                                                                               |
| A1   | CEQA                            | <i>Petunia parviflora</i>                                | wild petunia                                                                                                                           | Dry Wash<br>Chaparral, Grassland (Annual or Perennial),<br>Woodland                                    |
| A2   | CEQA                            | <i>Phacelia divaricata</i>                               | divaricate phacelia                                                                                                                    | Woodland                                                                                               |
| A1   | CEQA                            | <i>Phacelia douglasii</i>                                | Douglas' phacelia                                                                                                                      | Sand, Sandstone                                                                                        |
| A1x  | CEQA                            | <i>Phacelia egena</i>                                    | phacelia                                                                                                                               | Chaparral, Riparian, Woodland                                                                          |
| A2   | CEQA                            | <i>Phacelia malvifolia</i>                               | stinging phacelia                                                                                                                      | Gravel, Sand, Sandstone<br>Open Dry Slope, Dry Wash, Grassland (Annual<br>or Perennial), Miscellaneous |
| A2   | CEQA                            | <i>Phacelia ramosissima</i>                              | branching phacelia                                                                                                                     |                                                                                                        |
| A1x  | CEQA                            | <i>Phalaris angusta</i>                                  | narrow canary grass                                                                                                                    | Miscellaneous Wetlands                                                                                 |
| A2   | CEQA                            | <i>Phalaris arundinacea</i>                              | reed canary grass                                                                                                                      | Riparian, Miscellaneous Wetlands                                                                       |
| A1x  | CEQA                            | <i>Phalaris californica</i>                              | California canary grass                                                                                                                | Grassland (Annual or Perennial), Woodland                                                              |
| A1   | CEQA                            | <i>Phalaris lemmonii</i>                                 | Lemmon's canary-grass                                                                                                                  | Miscellaneous                                                                                          |
| A2   | CEQA                            | <i>Pinus attenuata</i>                                   | knobcone pine                                                                                                                          | Burns, Chaparral, Forest, Sand, Sandstone                                                              |
| A2   | CEQA                            | <i>Pinus coulteri</i>                                    | Coulter pine<br>chaparral orchid, wood<br>rein-orchid, elongate<br>piperia                                                             | Chaparral, Forest                                                                                      |
| A2   | CEQA                            | <i>Piperia elongata</i>                                  |                                                                                                                                        | Forest, Scrub (Coastal or Interior)                                                                    |
|      | 4.2<br>S3.2(CEQA)               |                                                          |                                                                                                                                        |                                                                                                        |
| *A2  | G3                              | <i>Piperia michaelii</i>                                 | Michael's rein-orchid<br>Alaska piperia, slender-<br>spire orchid                                                                      | Forest, Scrub (Coastal or Interior), Woodland                                                          |
| A1   | CEQA                            | <i>Piperia unalascensis</i>                              |                                                                                                                                        | Forest, Scrub (Coastal or Interior), Woodland                                                          |
|      | 1B.2<br>S2.2(CEQA)<br>G3T2Q     |                                                          |                                                                                                                                        |                                                                                                        |
| *A1x |                                 | <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> | Choris' popcornflower                                                                                                                  | Chaparral, Grassland (Annual or Perennial),<br>Scrub (Coastal or Interior)                             |
|      | 1B.1<br>S1.1(CEQA)<br>G1Q<br>CE |                                                          |                                                                                                                                        |                                                                                                        |
| *A1  |                                 | <i>Plagiobothrys diffusus</i>                            | San Francisco<br>popcornflower<br>Pacific popcornflower,<br>slender popcornflower<br>wavy-stemmed<br>popcornflower, coast<br>allocarya | Grassland (Annual or Perennial),<br>Miscellaneous Wetlands                                             |
| A2   | CEQA                            | <i>Plagiobothrys tenellus</i>                            |                                                                                                                                        | Miscellaneous                                                                                          |
| A1   | CEQA                            | <i>Plagiobothrys undulatus</i>                           |                                                                                                                                        | Vernal Pool, Miscellaneous Wetlands                                                                    |
| A1   | CEQA                            | <i>Plantago maritima</i>                                 | Pacific seaside plantain<br>white-flowered bog-<br>orchid                                                                              | Salt Marsh                                                                                             |
| A1x  | CEQA                            | <i>Platanthera dilatata</i> var. <i>leucostachys</i>     |                                                                                                                                        | Freshwater Marsh, Riparian                                                                             |
| A2   | CEQA                            | <i>Plectritis congesta</i> subsp. <i>congesta</i>        | sea blush                                                                                                                              | Coastal Bluff, Woodland                                                                                |
| A2   | CEQA                            | <i>Poa howellii</i>                                      | Howell's bluegrass<br>Douglas' beardstyle,<br>Douglas pogogyne                                                                         | Chaparral, Rock, Tallus, Scree, Woodland                                                               |
| A1x  | CEQA                            | <i>Pogogyne douglasii</i>                                |                                                                                                                                        | Vernal Pool                                                                                            |
|      | 2.2<br>S1(CEQA)<br>G4           |                                                          |                                                                                                                                        |                                                                                                        |
| *A1  |                                 | <i>Polemonium carneum</i>                                | Oregon polemonium,<br>great polemonium                                                                                                 | Miscellaneous                                                                                          |
| A1   | CEQA                            | <i>Polygala californica</i>                              | California milkwort                                                                                                                    | Chaparral, Forest, Redwood Forest                                                                      |
| A1   | CEQA                            | <i>Polypodium scolieri</i>                               | leather-leaf fern                                                                                                                      | Coastal Bluff, Miscellaneous                                                                           |





# California Native Plant Society

|            |      |                                             |                                                                                                |                                                                                             |
|------------|------|---------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| A1         | CEQA | Polystichum californicum                    | California sword fern                                                                          | Miscellaneous                                                                               |
| A1         | CEQA | Polystichum imbricans subsp. imbricans      | rock sword fern                                                                                | Miscellaneous                                                                               |
| A1         | CEQA | Potentilla anserina subsp. pacifica         | Pacific silverweed                                                                             | Miscellaneous Wetlands                                                                      |
| A1?        | CEQA | Prosartes smithii                           | large-flowered fairy bell                                                                      | Forest, Woodland<br>Forest, Riparian, Woodland, Miscellaneous Wetlands                      |
| A1         | CEQA | Prunella vulgaris var. lanceolata           | selfheal                                                                                       | Open Dry Slope, Sand, Sandstone                                                             |
| A2         | CEQA | Pseudognaphalium biolettii                  | Bioletti's cudweed                                                                             | Chaparral, Open Dry Slope                                                                   |
| A2         | CEQA | Pseudognaphalium microcephalum              | white everlasting                                                                              |                                                                                             |
| A1         | CEQA | Psilocarphus chilensis                      | round woolly marbles,<br>round woolly-marbles<br>maul oak, canyon live oak, shrubby canyon oak | Vernal Pool, Miscellaneous Wetlands                                                         |
| A2         | CEQA | Quercus chrysolepis                         | leather oak                                                                                    | Chaparral, Scrub (Coastal or Interior)<br>Chaparral, Serpentine or Serpentine-derived soils |
| A2         | CEQA | Quercus durata var. durata                  | leather oak                                                                                    |                                                                                             |
| A1         | CEQA | Quercus garryana x dumosa                   | Oregon oak x scrub oak<br>Oregon oak x leather oak                                             | Scrub (Coastal or Interior), Woodland                                                       |
| A1         | CEQA | Quercus garryana x durata                   | Oregon oak x scrub oak<br>Oregon oak x leather oak                                             | Chaparral, Woodland                                                                         |
| A2         | CEQA | Quercus palmeri                             | Palmer's oak                                                                                   | Rock, Tallus, Scree                                                                         |
| A2         | CEQA | Quercus parvula var. shrevei                | island scrub oak                                                                               | Chaparral, Woodland                                                                         |
| A1         | CEQA | Quercus xjolonensis                         | blue oak x valley oak                                                                          | Forest, Woodland                                                                            |
| 4.2        |      |                                             |                                                                                                |                                                                                             |
| S3.2(CEQA) |      |                                             |                                                                                                |                                                                                             |
| *A2        | G4   | Ranunculus lobbii                           | Lobb's aquatic buttercup                                                                       | Vernal Pool, Miscellaneous Wetlands                                                         |
| A2         | CEQA | Ranunculus occidentalis var. occidentalis   | western buttercup                                                                              | Grassland (Annual or Perennial),<br>Woodland                                                |
| A1         | CEQA | Ranunculus orthorhynchus var. bloomeri      | Bloomer's buttercup                                                                            | Miscellaneous Wetlands                                                                      |
| A1x        | CEQA | Ranunculus orthorhynchus var. orthorhynchus | straight-beaked<br>buttercup                                                                   | Forest, Miscellaneous Wetlands,<br>Miscellaneous                                            |
| A2         | CEQA | Ribes amarum                                | bitter gooseberry                                                                              | Chaparral                                                                                   |
| A1         | CEQA | Ribes aureum var. gracillimum               | golden currant                                                                                 | Riparian, Miscellaneous                                                                     |
| A2         | CEQA | Ribes quercetorum                           | oakwoods gooseberry,<br>oak gooseberry<br>fuchsia-flowered<br>gooseberry                       | Chaparral, Woodland                                                                         |
| A1         | CEQA | Ribes speciosum                             | gooseberry                                                                                     | Chaparral, Scrub (Coastal or Interior)                                                      |
| A2         | CEQA | Rorippa curvisiliqua                        | yellow cress                                                                                   | Freshwater Marsh                                                                            |
| A1         | CEQA | Rorippa palustris subsp. palustris          | marsh yellow-cress                                                                             | Miscellaneous Wetlands                                                                      |
| A1         | CEQA | Rosa nutkana subsp. nutkana                 | Nootka rose                                                                                    | Miscellaneous                                                                               |
| A1         | CEQA | Rubus spectabilis                           | salmonberry                                                                                    | Riparian                                                                                    |
| A2         | CEQA | Rumex californicus                          | willow dock                                                                                    | Miscellaneous Wetlands<br>Coastal Bluff, Coastal Strand,<br>Miscellaneous Wetlands          |
| A2         | CEQA | Rumex crassus                               | willow dock                                                                                    |                                                                                             |
| A2         | CEQA | Rumex fueginus                              | golden dock                                                                                    | Brackish Marsh, Salt Marsh                                                                  |
| A2         | CEQA | Rumex transitorius                          | willow dock                                                                                    | Miscellaneous Wetlands                                                                      |
| A1         | CEQA | Sagittaria latifolia                        | arrowhead                                                                                      | Freshwater Marsh                                                                            |
| A2         | CEQA | Salix scouleriana                           | Scouler's willow                                                                               | Miscellaneous Wetlands                                                                      |
| A1         | CEQA | Sambucus racemosa var. racemosa             | red elderberry                                                                                 | Riparian                                                                                    |
| A1x        | CEQA | Sanicula arctopoides                        | footsteps of spring,<br>yellow mats                                                            | Coastal Bluff<br>Chaparral, Scrub (Coastal or Interior),<br>Woodland                        |
| A2         | CEQA | Sanicula laciniata                          | coast sanicle                                                                                  |                                                                                             |
| A1x        | CEQA | Scoliopus bigelovii                         | fetid adder's tongue,<br>slink pod                                                             | Redwood Forest<br>Scrub (Coastal or Interior), Woodland,<br>Miscellaneous                   |
| A2         | CEQA | Scutellaria californica                     | California skullcap                                                                            | Miscellaneous                                                                               |
| A2         | CEQA | Selaginella bigelovii                       | spike-moss                                                                                     | Miscellaneous                                                                               |
| A1         | CEQA | Senecio hydrophilus                         | water ragwort, alkali-marsh ragwort, alkali-                                                   | Miscellaneous Wetlands                                                                      |



Dedicated to the preservation of California native flora

# California Native Plant Society

|     |      |                                               |                                              |                                                                                                          |
|-----|------|-----------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------|
|     |      |                                               | marsh butterweed                             |                                                                                                          |
| A2  | CEQA | Sesuvium verrucosum                           | western sea-purslane,<br>sea-purslane        | Alkali Areas                                                                                             |
| A2  | CEQA | Setaria parviflora                            | knotroot bristle grass,<br>perennial foxtail | Chaparral, Grassland (Annual or Perennial)                                                               |
| A2  | CEQA | Sidalcea diploscypha                          | fringed checkerbloom,<br>fringed sidalcea    | Grassland (Annual or Perennial), Woodland                                                                |
| A1  | CEQA | Sisyrinchium californicum                     | golden-eyed-grass                            | Freshwater Marsh<br>Forest, Scrub (Coastal or Interior),<br>Woodland                                     |
| A1? | CEQA | Solanum xanti                                 | purple nightshade                            | Woodland                                                                                                 |
| A2  | CEQA | Spergularia macrotheca var.<br>macrotheca     | large-flowered sand<br>spurry                | Alkali Areas, Coastal Bluff, Rock, Tallus,<br>Scree, Miscellaneous Wetlands                              |
| A1  | CEQA | Spiranthes porrifolia                         | western ladies' tresses                      | Miscellaneous Wetlands                                                                                   |
| A1  | CEQA | Spiranthes romanzoffiana                      | hooded ladies' tresses                       | Coastal Bluff, Freshwater Marsh                                                                          |
| A2  | CEQA | Stachys ajugoides                             | bugle hedge nettle                           | Miscellaneous Wetlands                                                                                   |
| A1? | CEQA | Stachys bullata                               | California hedge nettle                      | Open Dry Slope, Miscellaneous                                                                            |
| A2  | CEQA | Stephanomeria elata                           | stephanomeria                                | Open Dry Slope                                                                                           |
|     |      | 1B.2<br>S2.2(CEQA)<br>G2T2                    |                                              | Chaparral, Open Dry Slope, Grassland<br>(Annual or Perennial), Serpentine or<br>Serpentine-derived soils |
| *A2 |      | Streptanthus albidus subsp.<br>peramoenus     | most beautiful jewel-<br>flower              |                                                                                                          |
|     |      | 2.2<br>S1S2(CEQA)<br>G5                       |                                              |                                                                                                          |
| *A1 |      | Stuckenia filiformis subsp. alpina            | slender-leaved<br>potamogeton                | Freshwater Marsh, Riparian, Miscellaneous<br>Wetlands                                                    |
| A2  | CEQA | Stylocline gnaphaloides                       | everlasting neststraw,<br>nest-straw         | Sand, Sandstone, Miscellaneous<br>Miscellaneous, Riparian, Miscellaneous<br>Wetlands                     |
| A2  | CEQA | Symphotrichum lanceolatum var.<br>hesperium   | marsh aster                                  | Open Dry Slope, Grassland (Annual or<br>Perennial), Scrub (Coastal or Interior),<br>Woodland             |
| A2  | CEQA | Tetrapteron graciliflorum                     | hill sun cup                                 | Chaparral, Grassland (Annual or Perennial),<br>Woodland                                                  |
| A1x | CEQA | Thermopsis californica var.<br>californica    | santa ynez false-lupine,<br>false-lupine     | Woodland                                                                                                 |
| A2  | CEQA | Thysanocarpus radians                         | ribbed fringe pod                            | Miscellaneous                                                                                            |
| A1  | CEQA | Tolmiea diplomenziesii                        | pig-a-back plant                             | Riparian                                                                                                 |
| A1  | CEQA | Trianthena portulacastrum                     | horse purslane                               | Miscellaneous Wetlands                                                                                   |
| A2  | CEQA | Trifolium barbigerum                          | bearded clover                               | Miscellaneous                                                                                            |
| A2  | CEQA | Trifolium lilacinum                           | Gray's clover                                | Miscellaneous                                                                                            |
| A1  | CEQA | Trifolium macraei                             | Macrae's clover, double-<br>headed clover    | Sand, Sandstone, Miscellaneous                                                                           |
| A2  | CEQA | Trifolium olivaceum                           | olive clover                                 | Miscellaneous                                                                                            |
| A2  | CEQA | Trifolium wormskioldii                        | cow clover                                   | Miscellaneous Wetlands                                                                                   |
| A2  | CEQA | Triglochin striata                            | three-ribbed arrow-grass                     | Salt Marsh                                                                                               |
| A2  | CEQA | Trillium ovatum subsp. ovatum                 | white trillium                               | Forest, Redwood Forest                                                                                   |
| A2  | CEQA | Triodanis biflora                             | Venus' looking-glass                         | Burns, Miscellaneous                                                                                     |
| A2  | CEQA | Triphysaria versicolor subsp.<br>faucibarbata | smooth owl's-clover                          | Grassland (Annual or Perennial)                                                                          |
| A2  | CEQA | Trisetum canescens                            | tall trisetum                                | Forest, Miscellaneous                                                                                    |
| A1x | CEQA | Vancouveria planipetala                       | redwood ivy, inside-out<br>flower            | Forest                                                                                                   |
|     |      | 2.3<br>S2.3(CEQA)<br>G5                       |                                              |                                                                                                          |
| *A2 |      | Viburnum ellipticum                           | oval-leaved viburnum                         | Chaparral<br>Grassland (Annual or Perennial), Scrub<br>(Coastal or Interior)                             |
| A2  | CEQA | Vicia hassei                                  | slender vetch                                | Forest                                                                                                   |
| A1  | CEQA | Viola adunca subsp. adunca                    | western blue violet                          | Forest                                                                                                   |
| A2  | CEQA | Viola glabella                                | stream violet, smooth<br>yellow violet       | Forest, Riparian                                                                                         |



# California Native Plant Society

A1 CEQA Viola sempervirens evergreen violet, redwood violet Redwood Forest

**NOTE:** Some of these plant species are only known from the area historically and have not been reported for quite some time. It should not necessarily be assumed, however, that they no longer exist here as they may be on private land or hard-to-reach areas where surveys have not been done for a long time, if ever. In recent years, several plant species have been rediscovered in the East Bay that had not been reported in the area since the late 1800's or early 1900's.

Dates indicated for historical species in the species name column refer to the last known record in the Alameda-Contra Costa Counties area, not necessarily the area described in the title.

## Explanation of Ranks

**\*A1 or \*A2:** Species in Alameda and Contra Costa counties listed as rare, threatened or endangered statewide by federal or state agencies or by the state level of CNPS.

**A1x:** Species previously known from Alameda or Contra Costa Counties, but now presumed extirpated here.

**A1:** Species currently known from 2 or less regions in Alameda and Contra Costa Counties.

**A2:** Species currently known from 3 to 5 regions in the two counties, or, if more, meeting other important criteria such as small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc.

**A1?:** Species with taxonomic or distribution problems that make it unclear if they actually occur here.



Appendix B

EBCNPS Comment Letter RE: Notice of Intent for the Environmental  
Impact Statement on **FEMA-2010-0037, Hazardous Fire Risk Reduction,  
East Bay Hills, CA. October 2010**



## California Native Plant Society

East Bay Chapter  
Conservation Committee

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October 1, 2010

Office of Chief Counsel, Federal Emergency  
Management Agency, 500 C Street, SW.,  
Room 835, Washington, DC 20472-3100

**RE: Docket ID: FEMA-2010-0037, Hazardous Fire Risk Reduction, East Bay Hills, CA**

Dear Sir/Madam:

The East Bay Chapter of the California Native Plant Society (EBCNPS) appreciates the opportunity to comment on the Notice of Intent for the Environmental Impact Statement on **FEMA-2010-0037, Hazardous Fire Risk Reduction, East Bay Hills, CA**. The California Native Plant Society (CNPS) is a non-profit organization of more than 10,000 laypersons, professional and academic botanists organized into 33 chapters throughout California. The mission of the CNPS is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

The East Bay Chapter of CNPS (EBCNPS) has been involved with protecting and conserving native plant resources in the East Bay Hills for some 47 years now. These East Bay Hills are rich with native vegetation and rare and unusual plants that often are found nowhere else in the two-county East Bay area. The East Bay Hills are home to a large number of endangered, threatened, and locally rare plants which could be affected by fuels management projects. EBCNPS wants to ensure that the EIS will address potential impacts to these plants. Appendix A provides a list of CEQA protected A-ranked plants, or plants that are locally rare, including federally listed and state listed plants.

**We recognize that there is a frightening wildfire potential each fall for some residents living in the East Bay Hills. This potential exists because of the combination of extreme weather events (Diablo winds), the pattern of residential development in the hills, the proximity of flammable homes to fire-prone vegetation, and the lack of adequate preparation to the urban infrastructure, including defensible space [excerpted from our paper, "Managing the East Bay Hills WUI to Preserve Native Habitat and Reduce the Risk of Catastrophic Fire", Appendix B].**

This paper, co-authored with Sierra Club and Golden Gate Audubon, was submitted to the East Bay Park District during their Fuels Management EIR process. We believe that it is applicable to this project and helps provide insight and information from three environmentally motivated organizations. In addition to providing this paper and other letters to responsible parties, EBCNPS continues to be in contact with landowners and land managers in the East Bay Hills, including the City of Oakland and EBRPD, helping ensure that the fuels management plans for these hills will not negatively impact native vegetation. In fact, in many cases we're working

together to produce a win-win situation wherein both fuel reduction goals are met while native plant habitat is maintained and even improved in some situations.

EBCNPS supports many of the concepts presented in the Sierra Club (SC) letter (Norman LaForce, September 12<sup>th</sup>, 2010) submitted during this project scoping process. EBCNPS has been working assiduously with a number of local conservation groups, including the Sierra Club, Golden Gate Audubon Society, Friends of Sausal Creek, and the Claremont Canyon Conservancy, to help identify resources and educate the public and decision-makers about the ecological value of these resources. We firmly agree with the second (2) point in the SC letter that the EIS needs to be grounded in “verifiable wildfire science, reliable resource protection/management science, and expert opinions”.

The role of FEMA, as a potential funder of these wildfire reduction plans, should be to review the documents submitted not only for the quality of the project presented, but also for the foundation upon which the proposals were written. We hope that FEMA would uphold grantees to an extremely high standard and require the projects to explicitly state their assumptions and the background information they have used to inform the proposed project. Although we understand that all of the projects highlighted in the scoping session (e.g., City of Oakland, University of California, EBRPD) have already submitted proposals, we believe that it is not too late to assess the quality of these projects for the following parameters:

1. What type of fuel model is used to create the recommendations for fuels treatment? Is the model generalized from another area or is it based on vegetation found in the East Bay Hills and on an understanding of local weather phenomena?
2. Was the project proposal written with a demonstrated knowledge of the *site-specific* natural resources and land conditions for each project? Did the project proposal team include an ecologist, biologist, and botanist in order to help ensure that the project will not create additional impacts to the environment? Was vegetation mapped at the appropriate scale for each project? Since many projects will occur on a small scale, it should be required that vegetation is mapped to the standards of the *Manual of California Vegetation – 2<sup>nd</sup> Edition*, so that resources and impacts to resources can be assessed at the proper scale.
3. Do the proposals mention that they are working in “living landscapes”? Do these proposals take into account the fact that the living environment will “respond” to the changes proposed in each fuels management plan? The response of a living landscape to perturbation isn’t always easy to predict, therefore, does the proposed project include a number of possible scenarios that will occur 1, 5, and 10 years after the initial fuels treatment? Does the project proponent have access to stable funding that will be able to deal with costs of additional contingencies (i.e., erosion, invasive species spread, etc.) that might arise after the FEMA funds are spent? How are these additional funds to be spent if everything proceeds as planned?

4. Does the project proponent offer a clear and complete maintenance and monitoring plan that will be initiated once the initial treatment is concluded?
5. Each project should have an approved Environmental Impact Report, or similar duly prepared legal document, that has been properly noticed to the public and approved by the proper agencies. The completion of the environmental review process, by the applicant, should be a requirement before any project commences.
6. What is the track record of the applicant to finish projects as proposed? Since all of the applicants have some history with fuels management work, how will past performance be assessed for each applicant?
7. Does the applicant have an informed program for contending with weed and invasive species that may colonize the site after fuels treatment?
8. Does the applicant have a technical advisory committee that would be helpful when potential problems arise with fuels treatments or follow up monitoring?

### **General Considerations**

FEMA's EIS is required to consider all potential impacts that may occur from the act of FEMA funding fuels reduction projects in the East Bay Hills. Given the history of fire in the East Bay Hills, fear is a strong motivator for action that will help minimize the risk of catastrophic fire. Although we agree that FEMA should act as quickly as possible, it does serve public safety or our ecological heritage to act too quickly without considering the long-term consequences of this scale of environmental manipulation. There are many associated impacts that could be exaggerated with a poor fuels management plan, including but not limited to, flooding, erosion, deterioration of water quality, deterioration of habitat for native flora and fauna, increased land slides, and most importantly, increased risk of fire. We hope that FEMA clearly understands its responsibilities if a fuels project has unintended consequences. We would like the document to clearly outline FEMA's actions after a project is approved, from contracts to reporting to follow-up and enforcement.

FEMA's EIS should include information on cumulative impacts to habitat. Since this project will fund several million dollars of fuels work in the East Bay Hills, we believe that the funder of this work should be required to take a landscape scale perspective of the greater proposed project area. In this case, it seems likely that almost all of the impacts will fall upon a relatively small area – the Berkeley and Oakland “Hills” areas where the urban areas are carved into steep hills and lie adjacent to wildlands (parks, preserves, watershed lands). EBCNPS asks that the EIS clearly state the acreage of each habitat type that will be affected and what habitat types will replace these. We request that vegetation mapping be done at a fine scale and that vegetation be reported as a vegetation type in accordance with the *Manual of California Vegetation - 2nd Edition*.

FEMA's EIS should include an impact analysis on the increase of the spread of invasive plants from the proposed action. In addition, to help minimize the potential of increasing weed invasion, we hope the EIS will clearly outline Best Management Practices as mitigation for all grantees and contracts and enforce penalties if those BMPs are not implemented as agreed. At least two mechanisms, with regard to invasive species spread, will be at play when a fuels reduction project is undertaken. First, the actual act of bringing in machinery for fuels treatment purposes poses a risk to the site. The equipment may be contaminated with seeds or vegetative plant parts from another site and deposit weeds that were previously not known from the immediate site. Second, the process of soil disturbance is one of the major factors in increasing weed populations, as well as introducing new colonizers. Barren soil or soil that has been disturbed by machinery or mechanical tools is more likely to be colonized by invasive species than soil which remains intact. Most of our invasive plants thrive in disturbed soils, and fuels management work therefore provides a vector by which weeds can spread. In some cases, the implications of increased weed biomass can be significant. Many weeds are extremely competitive and produce large amounts of biomass that crowd out native plants. As a result, often the weeds can be as great or greater a fire hazard than the native vegetation that was managed for fuel load. EBCNPS believes that this scenario needs to be addressed in the EIS and FEMA should be clear about monitoring requirements over the course of 2-5 years to ensure that this will not be the outcome of the proposed projects. We believe FEMA should require annual project reports for 3 to 5 years and require that the grantee make these reports easily available to the public.

FEMA's EIS should require monitoring for all projects that it approves and funds. As stated in the above points, monitoring will help ensure that projects are compliant with FEMA standards, and even more importantly, that environmental conditions have not been degraded for resources, people, or wildlife at the cost of fuels management. Although FEMA has clearly stated that its funding cannot go towards monitoring and follow-up activities, it should require that an agency has matching funding at a rate of 1:3 or 1:4 for monitoring and follow-up activities that are needed for a successful project. Projects that lack monitoring and follow-up often produce less desirable results and can negatively impact the project site. FEMA's EIS should clearly state that the funding for any approved project has the appropriate matching funds (at a reasonable ratio) so that monitoring and follow-up tasks can make FEMA-funded projects successful and accountable to the community in which they take place.

Thank you for your consideration of the above comments. Please do not hesitate to contact me with questions at (510) 734-0335.

Sincerely,

Lech Naumovich  
Conservation Analyst  
California Native Plant Society  
East Bay Chapter  
[conservation@ebcnps.org](mailto:conservation@ebcnps.org)



APPENDIX A: CEQA protected A-Ranked Plants known from the East Bay Hills

**East Bay  
Rarity**

| <b>Rank</b> | <b>Species Name</b>                                              | <b>Common Name</b>       | <b>Habitat</b>                                           |
|-------------|------------------------------------------------------------------|--------------------------|----------------------------------------------------------|
| A1          | Acer negundo var. unknown (var. californicum is the most common) | box-elder                | Riparian                                                 |
| A2          | Adiantum aleuticum (A. jordanii is more common)                  | five-finger fern         | Riparian                                                 |
| A1          | Agoseris apargioides var. apargioides                            | seaside agoseris         | Forest; Grassland; Scrub; Sand or Sandstone              |
| A2          | Allium falcifolium                                               | sickle-leaved onion      | Rock, Tallus or Scree; Serpentine                        |
| A2          | Alnus rubra (A. rhombifolia is more common)                      | red alder                | Riparian                                                 |
| A1          | Ammannia coccinea                                                | long-leaved ammannia     | Riparian areas; Misc. Wetlands                           |
| A1x         | Amsinckia douglasiana (historical-1938)                          | Douglas' fiddleneck      | Dry Open Slopes; Rock, Tallus or Scree                   |
| *A2         | AMSINCKIA LUNARIS                                                | bent-flowered fiddleneck | Grassland; Woodland; Misc. habitats                      |
| A1          | Anisocarpus madioides (Madia madioides in Jepson Manual)         | woodland madia           | Forest; Redwood Forest; Woodland                         |
| A2          | Apiastrum angustifolium                                          | wild celery              | Chaparral; Scrub                                         |
| A2          | Arctostaphylos glandulosa ssp. glandulosa                        | Eastwood manzanita       | Chaparral                                                |
| *A1         | ARCTOSTAPHYLOS PALLIDA                                           | pallid manzanita         | Chaparral; Sand or Sandstone                             |
| A2          | Asclepias speciosa (A. californica is more common)               | milkweed                 | Misc. habitats                                           |
| A2          | Aster lanceolatus ssp. hesperius                                 | marsh aster              | Riparian areas; Misc. Wetlands; Misc. habitats           |
| *A1         | ASTRAGALUS TENER VAR. TENER                                      | alkali milk-vetch        | Alkali areas; Grassland; Vernal Pools; Misc. Wetlands    |
| A1x         | Atriplex patula ssp. obtusa (historical-1897)                    | spear saltbush           | Alkali areas                                             |
| *A1         | BALSAMORHIZA MACROLEPIS VAR. MACROLEPIS                          | big-scale balsamroot     | Grassland; Serpentine                                    |
| A1x         | Calamagrostis nutkaensis (historical-18??)                       | Pacific reed grass       | Coastal Strand; Freshwater Marsh; Forest; Redwood Forest |
| *A2         | CALOCHORTUS UMBELLATUS                                           | Oakland star-tulip       | Chaparral; Scrub; Woodland                               |
| A1          | Calycadenia multiglandulosa                                      | sticky calycadenia       | Rock, Tallus or Scree; Scrub                             |
| A2          | Camissonia graciliflora                                          | hill sun cup             | Dry Open Slopes; Grassland; Scrub; Woodland              |
| A1          | Carex brevicaulis                                                | short-stemmed sedge      | Rock, Tallus or Scree; Sand or Sandstone areas           |
| A2          | Carex densa                                                      | dense sedge              | Misc. Wetlands; Misc. habitats                           |
| A1          | Carex deweyana ssp. leptopoda                                    | short-scaled sedge       | Misc. Wetlands; Misc. Habitats                           |
| A1          | Carex dudleyi                                                    | Dudley's sedge           | Misc. Wetlands                                           |
| A1          | Carex globosa                                                    | round-fruited sedge      | Misc. habitats                                           |

## EBCNPS Conservation Committee

|     |                                                                                                 |                                |                                                   |
|-----|-------------------------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------|
| A1x | <i>Carex gracilior</i> (historical-1939)                                                        | slender sedge                  | Forest; Grassland; Misc. Wetlands; Misc. habitats |
| A2  | <i>Carex multicosata</i>                                                                        | many-ribbed sedge              | Misc. habitats                                    |
| A1  | <i>Carex obnupta</i>                                                                            | slough sedge                   | Misc. Wetlands                                    |
| A1  | <i>Castilleja ambigua</i> ssp. <i>ambigua</i>                                                   | Johnny-nip                     | Coastal Bluff; Grassland                          |
| A2  | <i>Castilleja subinclusa</i> ssp. <i>franciscana</i>                                            | Franciscan Indian paintbrush   | Chaparral; Scrub                                  |
| A2  | <i>Ceanothus thyrsiflorus</i> var. <i>thyrsiflorus</i>                                          | blue blossom; California-lilac | Misc. habitats                                    |
| A1  | <i>Chorizanthe polygonoides</i> var. <i>polygonoides</i>                                        | knotweed spineflower           | Gravel; Sand or Sandstone                         |
| A2  | <i>Chrysolepis chrysophylla</i> var. <i>minor</i>                                               | golden chinquapin              | Chaparral; Forest; Sand or Sandstone              |
| A2  | <i>Cirsium quercetorum</i>                                                                      | brownie thistle                | Grassland; Woodland                               |
| *A1 | CLARKIA FRANCISCANA                                                                             | Presidio clarkia               | Serpentine                                        |
| A2  | <i>Clarkia purpurea</i> ssp. <i>viminea</i> (ssp. <i>quadrivulnera</i> is more common)          | large godetia                  | Misc. habitats                                    |
| A1  | <i>Clintonia andrewsiana</i>                                                                    | red clintonia                  | Redwood Forest                                    |
| A2  | <i>Collomia heterophylla</i>                                                                    | varied-leaved collomia         | Rock, Tallus or Scree; Sand or Sandstone areas    |
| A2  | <i>Corallorhiza maculata</i> fma. <i>maculata</i> (forma <i>immaculata</i> is more common)      | spotted coralroot              | Forest; Woodland                                  |
| A1  | <i>Corallorhiza striata</i> ( <i>C. maculata</i> is more common)                                | striped coralroot              | Forest; Woodland                                  |
| A1  | <i>Coreopsis stillmanii</i>                                                                     | Stillman's coreopsis           | Chaparral; Grassland; Serpentine; Woodland        |
| A1  | <i>Cryptantha micromeres</i>                                                                    | minute-flowered cryptantha     | Chaparral; Woodland                               |
| A2  | <i>Cryptantha muricata</i>                                                                      | prickly cryptantha             | Rock, Tallus or Scree; Sand or Sandstone areas    |
| A2  | <i>Cryptantha torreyana</i>                                                                     | Torrey's cryptantha            | Dry Open Slopes; Forest                           |
| A2  | <i>Cyperus erythrorhizos</i>                                                                    | red-rooted cyperus             | Riparian                                          |
| A2  | <i>Deinandra corymbosa</i> ssp. <i>corymbosa</i> ( <i>Hemizonia corymbosa</i> in Jepson Manual) | coast tarweed                  | Coastal Bluff; Grassland                          |
| A2  | <i>Dendromecon rigida</i>                                                                       | bush poppy                     | Burns; Chaparral; Scrub                           |
| A2  | <i>Deschampsia cespitosa</i> ssp. <i>holciformis</i>                                            | tufted hairgrass               | Misc. Wetlands                                    |
| A2  | <i>Dicentra formosa</i>                                                                         | bleeding heart                 | Forest; Redwood Forest; Misc. habitats            |
| A1? | <i>Dichelostemma volubile</i> (?)                                                               | twining brodiaea               | Scrub; Woodland                                   |
| *A2 | DIRCA OCCIDENTALIS                                                                              | western leatherwood            | Forest; Riparian; Scrub                           |
| A1? | <i>Disporum smithii</i> (?) ( <i>D. hookeri</i> is more common)                                 | large-flowered fairy bell      | Forest; Woodland                                  |
| A2  | <i>Echinodorus berteroi</i>                                                                     | burhead                        | Freshwater Marsh                                  |
| A2  | <i>Elymus glaucus</i> ssp. <i>jepsonii</i> (ssp. <i>glaucus</i> is more common)                 | blue wildrye                   | Grassland                                         |
| A2  | <i>Elymus X hansenii</i>                                                                        | Hansen squirreltail            | Grassland                                         |
| A1  | <i>Eragrostis mexicana</i> ssp.                                                                 | Orcutt's eragrostis            | Riparian areas; Sand or Sandstone                 |

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|------|------------------------------------------------------------------------|---------------------------|----------------------------------------------|
|      | <i>virescens</i>                                                       |                           | areas; Misc. habitats                        |
| A2   | <i>Ericameria arborescens</i>                                          | golden-fleece             | Chaparral; Forest; Woodland                  |
| A2   | <i>Erigeron petrophilus</i> var. <i>petrophilus</i>                    | rock daisy                | Rock, Tallus or Scree; Serpentine            |
| *A1  | ERIOGONUM LUTEOLUM<br>VAR. CANINUM                                     | Tiburon buckwheat         | Grassland; Serpentine                        |
| A2   | <i>Eriogonum luteolum</i> var. <i>luteolum</i>                         | golden carpet             | Gravel; Sand or Sandstone; Serpentine        |
| *A2  | ERODIUM<br>MACROPHYLLUM                                                | round-leaved filaree      | Grassland; Scrub                             |
| A2   | <i>Festuca elmeri</i>                                                  | Elmer's fescue            | Riparian                                     |
| *A1  | FRITILLARIA LILIACEA                                                   | fragrant fritillary       | Grassland; Serpentine; Vernal Pools          |
| *A2  | GALIUM ANDREWSII<br>SSP. GATENSE                                       | serpentine bedstraw       | Chaparral; Serpentine; Woodland              |
| A1   | <i>Gaultheria shallon</i>                                              | salal                     | Forest; Redwood Forest                       |
| A2   | <i>Githopsis diffusa</i> ssp. <i>robusta</i>                           | southern bluecup          | Burns; Misc. habitats                        |
| A2   | <i>Gnaphalium bicolor</i>                                              | Bioletti's cudweed        | Dry Open Slopes; Sand or Sandstone           |
| A2   | <i>Gnaphalium canescens</i> ssp. <i>microcephalum</i>                  | white everlasting         | Chaparral; Dry Open Slopes                   |
| *A2  | HELIANTHELLA<br>CASTANEA                                               | Diablo helianthella       | Chaparral; Grassland; Woodland               |
| A2   | <i>Hesperolinon californicum</i>                                       | California dwarf flax     | Grassland; Rock, Tallus or Scree; Serpentine |
| A1x  | <i>Hierochloe occidentalis</i><br>(historical-198? but not seen since) | vanilla grass             | Forest; Redwood Forest                       |
| A2   | <i>Hoita macrostachya</i>                                              | California hemp           | Freshwater Marsh; Riparian                   |
| A1x  | <i>Hoita orbicularis</i> (historical-1936)                             | round-leaved psoralea     | Riparian areas; Misc. habitats               |
| *A1x | HOITA STROBILINA<br>(HISTORICAL-1865)                                  | Loma Prieta hoita         | Chaparral; Woodland                          |
| A2   | <i>Hordeum jubatum</i>                                                 | foxtail barley            | Misc. habitats                               |
| A1   | <i>Horkelia californica</i> ssp. <i>californica</i>                    | California horkelia       | Grassland; Scrub                             |
| *A1x | HORKELIA CUNEATA<br>SSP. SERICEA<br>(HISTORICAL-1894)                  | Kellogg's horkelia        | Grassland; Scrub; Sand or Sandstone          |
| A1   | <i>Hypericum formosum</i> var. <i>scouleri</i>                         | Scouler's St. John's wort | Freshwater Marsh; Riparian                   |
| A2   | <i>Iris douglasiana</i>                                                | Douglas iris              | Misc. habitats                               |
| A1   | <i>Iris longipetala</i>                                                | field iris                | Misc. habitats                               |
| *A2  | LATHYRUS JEPSONII<br>VAR. JEPSONII                                     | Delta tule pea            | Brackish Marsh; Freshwater Marsh             |
| A2   | <i>Layia gaillardoides</i>                                             | woodland layia            | Scrub; Woodland                              |
| A1x  | <i>Layia glandulosa</i> (historical-1983 but not seen since)           | white layia               | Sand or Sandstone                            |
| A2   | <i>Layia hieracioides</i>                                              | tall layia                | Misc. habitats                               |
| A1x  | <i>Lepidium oblongum</i> var. <i>oblongum</i> (historical-1937)        | wayside pepper-grass      | Misc. habitats                               |
| A1   | <i>Ligusticum apiifolium</i>                                           | Pacific lovage            | Coastal Bluff; Grassland; Scrub; Woodland    |
| A2   | <i>Lilium pardalinum</i> ssp.                                          | leopard lily              | Freshwater Marsh; Riparian                   |

|     |                                                                                             |                         |                                                                  |
|-----|---------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------|
|     | pardalinum                                                                                  |                         |                                                                  |
| *A1 | LINANTHUS ACICULARIS                                                                        | bristly linanthus       | Chaparral; Grassland; Woodland                                   |
| A1  | Linanthus liniflorus                                                                        | flax-flowered linanthus | Scrub; Serpentine; Woodland; Misc. habitats                      |
| A2  | Lithophragma bolanderi                                                                      | Bolander starflower     | Misc. habitats                                                   |
| A2  | Lomatium caruifolium var. caruifolium                                                       | caraway-leaved lomatium | Grassland; Vernal Pool; Misc. habitats                           |
| A1  | Lotus stipularis var. stipularis                                                            | stipulate lotus         | Chaparral                                                        |
| A1  | Lupinus affinis                                                                             | lupine                  | Misc. habitats                                                   |
| A1  | Lupinus bicolor var. tridentatus (var. umbellatus is more common)                           | miniature lupine        | Misc. habitats                                                   |
| A1  | Lupinus variicolor                                                                          | bluff lupine            | Coastal Strand; Grassland; Sand or Sandstone                     |
| A2  | Madia elegans ssp. vernalis (ssp. densifolia is more common)                                | common madia            | Grassland                                                        |
| A1x | Meconella linearis (historical-1983 but not seen since)                                     | narrow-leaved meconella | Dry Washes; Grassland; Sand or Sandstone                         |
| *A2 | MECONELLA OREGANA                                                                           | Oregon meconella        | Grassland; Misc. habitats                                        |
| A1? | Melica bulbosa var. bulbosa(?)                                                              | oniongrass              | Forest; Rock, Tallus or Scree                                    |
| *A1 | MICROPUS AMPHIBOLUS                                                                         | Mt. Diablo cottonweed   | Dry Open Slopes; Grassland; Rock, Tallus or Scree                |
| A1x | Micropus californicus var. subvestitus (historical-1930) (var. californicus is more common) | slender cottonweed      | Dry Open Slopes; Misc. habitats                                  |
| A1x | Microseris bigelovii (historical-1891)                                                      | coast microseris        | Coastal Bluff; Coastal Strand; Sand or Sandstone                 |
| A2  | Mimulus douglasii                                                                           | Douglas monkeyflower    | Chaparral; Gravel; Rock, Tallus or Scree; Serpentine; Woodland   |
| A2  | Monardella douglasii ssp. douglasii                                                         | Fenestra monardella     | Chaparral; Grassland; Serpentine; Woodland                       |
| A1  | Monardella sheltonii                                                                        | Shelton's monardella    | Chaparral; Forest; Rock, Tallus or Scree; Serpentine; Woodland   |
| *A2 | MONARDELLA VILLOSA SSP. GLOBOSA (ssp. villosa is more common)                               | robust monardella       | Chaparral; Woodland                                              |
| A1  | Monolopia gracilens                                                                         | woodland monolopia      | Chaparral; Grassland; Serpentine; Woodland                       |
| A2  | Myrica californica                                                                          | wax myrtle              | Forest; Redwood Forest; Scrub                                    |
| A2  | Oxalis albicans ssp. pilosa                                                                 | hairy wood-sorrel       | Chaparral; Grassland; Scrub                                      |
| A1  | Oxalis oregana                                                                              | redwood sorrel          | Redwood Forest                                                   |
| A1  | Perideridia oregana                                                                         | yampah                  | Dry Open Slopes; Rock, Tallus or Scree; Woodland; Misc. habitats |
| A2  | Petunia parviflora                                                                          | wild petunia            | Dry Washes                                                       |
| A2  | Phacelia divaricata                                                                         | divaricate phacelia     | Chaparral; Grassland; Woodland                                   |
| A2  | Phacelia tanacetifolia                                                                      | tansy phacelia          | Gravel; Sand or Sandstone                                        |
| A1x | Phalaris angusta (historical-1912)                                                          | Narrow canary grass     | Misc. Wetlands                                                   |

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|------|-------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------|
| A2   | <i>Phalaris arundinacea</i>                                                                     | reed canary grass               | Riparian areas; Misc. Wetlands                                       |
| A1x  | <i>Phalaris californica</i><br>(historical-1943)                                                | California canary grass         | Grassland; Woodland                                                  |
| A1   | <i>Phalaris lemmonii</i>                                                                        | Lemmon's canary-grass           | Misc. habitats                                                       |
| A2   | <i>Pinus attenuata</i>                                                                          | knobcone pine                   | Chaparral; Forest; Sand or Sandstone                                 |
| A2   | <i>Piperia elongata</i>                                                                         | elongate piperia                | Forest; Scrub                                                        |
| A1   | <i>Piperia unalascensis</i>                                                                     | Alaska piperia                  | Forest; Scrub; Woodland                                              |
| *A1x | PLAGIOBOTHRYS<br>CHORISIANUS VAR.<br>CHORISIANUS (historical-<br>1890)                          | Choris's popcorn flower         | Chaparral; Grassland; Scrub                                          |
| *A1  | PLAGIOBOTHRYS<br>DIFFUSUS                                                                       | San Francisco popcorn flower    | Grassland; Misc. Wetlands                                            |
| A2   | <i>Plagiobothrys tenellus</i>                                                                   | slender popcornflower           | Misc. habitats                                                       |
| A1   | <i>Polypodium scolieri</i>                                                                      | leather-leaf fern               | Coastal Bluff; Misc. habitats                                        |
| A1   | <i>Polystichum californicum</i>                                                                 | California sword fern           | Misc. habitats                                                       |
| A1   | <i>Polystichum imbricans</i> var.<br><i>imbricans</i>                                           | rock sword fern                 | Misc. habitats                                                       |
| *A1  | POTAMOGETON<br>FILIFORMIS                                                                       | slender-leaved potamogeton      | Freshwater Marsh; Riparian; Misc.<br>Wetlands                        |
| A1   | <i>Prunella vulgaris</i> var.<br><i>lanceolata</i> (var. <i>vulgaris</i> is<br>more common)     | selfheal                        | Forest; Riparian; Woodland; Misc.<br>Wetlands                        |
| A1   | <i>Psilocarphus tenellus</i> var.<br><i>globiferus</i> (var. <i>tenellus</i> is<br>more common) | round woolly-marbles            | Vernal Pools; Misc. Wetlands                                         |
| A1   | <i>Quercus parvula</i> var. <i>shrevii</i>                                                      | island scrub oak                | Chaparral; Woodland                                                  |
| A1   | <i>Ranunculus orthorhynchus</i><br>var. <i>bloomeri</i>                                         | Bloomer's buttercup             | Misc. Wetlands                                                       |
| A1   | <i>Ribes amarum</i>                                                                             | bitter gooseberry               | Chaparral                                                            |
| A1   | <i>Ribes speciosum</i>                                                                          | fuchsia-flowered gooseberry     | Chaparral; Scrub                                                     |
| A2   | <i>Rorippa palustris</i> var.<br><i>occidentalis</i>                                            | marsh yellow-cress              | Misc. Wetlands                                                       |
| A1   | <i>Rosa nutkana</i> var. <i>nutkana</i>                                                         | Nootka rose                     | Misc. habitats                                                       |
| A2   | <i>Rumex maritimus</i>                                                                          | golden dock                     | Brackish Marsh; Salt Marsh                                           |
| A2   | <i>Rumex salicifolius</i> var.<br><i>denticulatus</i>                                           | willow dock                     | Misc. Wetlands                                                       |
| A1   | <i>Sagittaria latifolia</i>                                                                     | arrowhead                       | Freshwater Marsh                                                     |
| A2   | <i>Salix scouleriana</i>                                                                        | Scouler's willow                | Misc. Wetlands                                                       |
| A1   | <i>Sambucus racemosa</i> var.<br><i>racemosa</i>                                                | red elderberry                  | Riparian                                                             |
| A1x  | <i>Sanicula arctopoides</i><br>(historical-19??)                                                | footsteps-of-spring             | Coastal Bluff                                                        |
| A2   | <i>Sanicula laciniata</i>                                                                       | coast sanicle                   | Chaparral; Scrub; Woodland                                           |
| A1x  | <i>Scoliopus bigelovii</i><br>(historical-18??)                                                 | fetid adder's tongue; slink pod | Redwood Forest                                                       |
| A2   | <i>Scutellaria californica</i>                                                                  | California skullcap             | Scrub; Woodland; Misc. habitats                                      |
| A2   | <i>Spergularia macrotheca</i> var.<br><i>macrotheca</i>                                         | large-flowered sand spurry      | Alkali areas; Coastal Bluff; Rock,<br>Talus or Scree; Misc. Wetlands |
| A1   | <i>Spiranthes porrifolia</i>                                                                    | western ladies' tresses         | Misc. Wetlands                                                       |
| A1   | <i>Spiranthes romanzoffiana</i>                                                                 | hooded ladies' tresses          | Coastal Bluff, Freshwater Marsh                                      |
| A1?  | <i>Stachys bullata</i> (?) (S.                                                                  | California hedge nettle         | Dry Open Slopes; Misc. habitats                                      |

|     |                                                              |                             |                                                      |
|-----|--------------------------------------------------------------|-----------------------------|------------------------------------------------------|
|     | ajugoides var. rigida is more common)                        |                             |                                                      |
| A2  | Stephanomeria elata                                          | stephanomeria               | Dry Open Slopes                                      |
| *A2 | STREPTANTHUS<br>ALBIDUS SSP.<br>PERAMOENUS                   | most beautiful jewel-flower | Chaparral; Dry Open Slopes;<br>Grassland; Serpentine |
| A1x | Thermopsis macrophylla var.<br>macrophylla (historical-1929) | false-lupine                | Chaparral; Grassland; Woodland                       |
| A2  | Thysanocarpus radians                                        | ribbed fringe pod           | Misc. habitats                                       |
| A1  | Tolmiea menziesii                                            | pig-a-back plant            | Riparian                                             |
| A2  | Trifolium macraei                                            | double-headed clover        | Sand or Sandstone; Misc. habitats                    |
| A2  | Trifolium wormskioldii                                       | cow clover                  | Misc. Wetlands                                       |
| A2  | Trillium ovatum ssp. ovatum                                  | white trillium              | Forest; Redwood Forest                               |
| A2  | Triodanis biflora                                            | Venus' looking-glass        | Misc. habitats                                       |
| A2  | Triphysaria versicolor ssp.<br>faucibarbata                  | smooth owl's-clover         | Grassland                                            |
| A2  | Trisetum canescens                                           | tall trisetum               | Forest; Misc. habitats                               |
| A2  | Tropidocarpum gracile                                        | slender tropidocarpum       | Alkali areas; Grassland                              |
| A1x | Vancouveria planipetala<br>(historical-1898)                 | inside-out flower           | Forest                                               |
| A2  | Vicia hassei                                                 | slender vetch               | Grassland; Scrub                                     |
| A1  | Viola adunca                                                 | western blue violet         | Forest                                               |
| A2  | Viola glabella                                               | stream violet               | Forest; Riparian                                     |
| A1  | Viola sempervirens                                           | evergreen violet            | Redwood Forest                                       |

**NOTE:** Some of these plant species are only known from the area historically and have not been reported for quite some time. It should not necessarily be assumed, however, that they no longer exist here as they may be on private land or hard-to-reach areas where surveys have not been done for a long time, if ever. In recent years, several plant species have been rediscovered in the East Bay that had not been reported in the area since the late 1800's or early 1900's.

Dates indicated for historical species in the species name column refer to the last known record in the Alameda-Contra Costa Counties area, not necessarily the area described in the title.

### **Explanation of Ranks**

**\*A1 or \*A2:** Species in Alameda and Contra Costa counties listed as rare, threatened or endangered statewide by federal or state agencies or by the state level of CNPS.

**A1x:** Species previously known from Alameda or Contra Costa Counties, but now presumed extirpated here.

**A1:** Species currently known from 2 or less regions in Alameda and Contra Costa Counties.

**A2:** Species currently known from 3 to 5 regions in the two counties, or, if more, meeting other important criteria such as small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc.

**A1?:** Species with taxonomic or distribution problems that make it unclear if they actually occur here.

## APPENDIX B: Green Paper on Fuels Management in the East Bay Hills

### Managing the East Bay Hills Wildland/Urban Interface to Preserve Native Habitat and Reduce the Risk of Catastrophic Fire

An Environmental Green Paper- March 27, 2009

Sierra Club, California Native Plant Society, Golden Gate Audubon Society

This paper has been prepared by the San Francisco Bay Chapter of the Sierra Club (Sierra Club), East Bay Chapter of the California Native Plant Society (CNPS) and the Golden Gate Audubon Society (Audubon) to document our point of view about how best to meet the twin goals of managing the urban wildland interface to enhance and preserve habitat for native plants and wildlife species while reducing the threat of catastrophic fire at the interface.

This topic is of timely importance because of the pending release of the environmental review documents being prepared by the East Bay Regional Park District, FEMA grants for vegetation management, and other agency documents that are to follow. This paper contains the major guiding principles, which are further elaborated on in the attached background paper and appendix.

It is important to note at the outset that we embrace an Integrated Fire Management (IFM) approach to this issue. An IFM approach addresses the total scope of fire hazard both from problems with the human infrastructure and those from wildland vegetation.

We apply this theme at both the landscape level as well as at individual sites, whether they are homes at the interface or public parks and open space. While the human infrastructure including roads, water supply, defensible neighborhoods, etc., is expensive to maintain or improve, only well-planned infrastructure can assure safety from catastrophic fire. Without that fundamental understanding, vegetation management projects are doomed to fail in meeting the twin goals of fire safety and conservation of native habitat.

### GUIDING PRINCIPLES

#### Background

We recognize that there is a frightening wildfire potential each fall for some residents living in the East Bay Hills. This potential exists because of the combination of extreme weather events (Diablo winds), the pattern of residential development in the hills, the proximity of flammable homes to fire-prone vegetation, and the lack of adequate preparation to the urban infrastructure, including defensible space.

Natural wildfire in wildland areas can be viewed as an event without serious consequences to humans, but at the wildland/urban interface where man has altered natural conditions, it can lead to a disaster. There are natural cycles that are unavoidable that we must pay attention to, prepare for, and be ready to respond to appropriately and sometimes quickly. As an example, during the 21st century the East Bay Hills will not be lucky enough, even with exceptional fire fighting, to get by with zero uncontrollable wildfires and zero extremes in weather. Diablo winds in the fall months are the key environmental factor for extreme fire behavior, and it will be impossible to know the exact location, source, and timing of an ignition that will transform high winds into a raging wildfire.

During some Diablo Wind wildfires there will not be enough firefighters, fire trucks, helicopters, or aircraft to save every house or even control the fire until the winds slow. Unlike “normal” fires that can be fought, to a certain extent on the ground, Diablo Wind fires prevent the placement of firefighters on steep slopes or other hazardous locations due to the speed of wind-driven fire. Under these circumstances, quick evacuation and homeowners insurance will be the only protection for residents who have lost property.

Recent reports compiled by firefighters and researchers in “lessons learned” from other catastrophic wildland/urban interface fires in California have shown that the most important factor in preventing homes from burning in wildland fires is hardening of structures and the creation of defensible space. Conversely, unprepared residential areas will likely not be saved during a wind-driven wildfire and will contribute to the rapid spread of wildfire into adjacent residential areas as happened during the 1991 Oakland/Berkeley Tunnel Fire.

The 1995 Hills Emergency Forum Plan did not receive full acceptance from the environmental community because it contained insufficient field collected data to support the designations of fuel characteristics of our local vegetation, did not take into account the importance of conserving native habitat, and did not include a legally required environmental document along with the Plan.

The 1995 HEF Plan recommended that public agencies and large acreage landowners create and maintain two different types of areas managed for fuel reduction in the East Bay Hills. The first are the ridgetop fuelbreaks that were begun after the freeze of 1972 by removing freeze damaged eucalyptus to achieve a 300’ wide zone of managed vegetation where firefighters could attempt to stop a fire that started in wildland areas to the east, before it could race over the ridge into residential areas. The second type of management was created after the 1982 Blue Ribbon Report and the 1995 HEF Plan. The 1982 Report recommended fuelbreaks designed to provide a minimum of 100 feet of managed vegetation (including what the homeowner is required to do for defensible space) at the wildland/urban edge. The 1995 HEF Plan recommended fuelbreaks within a 500 foot study area, that in itself became controversial and confusing, designed to provide an area of managed vegetation with less than eight-foot flame lengths at the wildland/urban edge where firefighters could safely work to protect homes.

The Sierra Club, CNPS, and Audubon have not been satisfied with the Park District’s approach for maintaining its fuel-managed areas. We know that fuelbreaks constitute a combined area of more than 20 miles and 500 acres, often covered by weedy species, mowed below 4” of height, or over-grazed by goats, with little concern about species or habitat values. Also several eucalyptus management, thinning, or conversion projects exist that need attention. We are concerned that the Park District’s consultants and its staff have yet to articulate a clear vision about how they intend to maintain these areas while favoring and increasing the percentage of native plants over weedy, fuel-rich non-natives.

The debate about wildfire risks attributed to non-native eucalyptus trees has been a controversial topic for years. In our opinion, there is ample evidence to show that eucalyptus and pine trees in dense unmanaged groves are both a wildfire threat and an environmental dilemma that requires attention. Non-native eucalyptus and pine groves can exceed 120’ in height and can be prone to dramatic fire behavior. When wind-driven wildfire reaches tree crowns, flames above 150’ can be expected with burning embers blowing downwind well beyond one half mile. The capacity to spot new fires that overwhelm firefighting forces during Diablo Wind conditions means these species must receive high priority for treatment.



Selected and representative quotes, articles, and reports that provide additional information and perspective about the fire hazards and the environmental dilemmas posed by eucalyptus and pine plantations in the East Bay Hills can be found in the Background to the Environmental Green Paper.

### Recommendations and Solutions

In our opinion, decisions about how best to manage our east bay hill vegetation on the wildland side should be based on the twin goals of reducing the risk of catastrophic fire and maintaining the fragile native habitat found in the wildland/urban interface. To accomplish these goals, agencies should formulate well-conceived plans that integrate natural resource sciences and fire science.

All plans to reduce vegetation on the wildland side must be site specific, taking into account a range of critical variables that result in an individual profile for each site. We do not endorse generic fuel prescriptions because they do not take into account the unique threats and values of each site. In order to accomplish the twin goals of reducing the risk of catastrophic fires and of maintaining sustainable native habitat, agencies must recognize that effective management of live fuels is a subset of sound land management (and not the other way around) primarily because of the high degree of variability of living landscapes.

We urge the Hills Emergency Forum (HEF) and its member agencies to prepare updated mapping systems for the East Bay hills that identify wildland plant communities in site-specific detail as well as the type and density of vegetation intermixed with home landscapes.

Native vegetation communities, including our native woodlands, are generally below 40' in height, and are less prone to unmanageable fire behavior. These communities are comprised predominantly of plants that are native to the East Bay and form more than 80% of today's wildland vegetation in the hills. The recommended strategy for protecting residential areas from wildfire coming from native vegetation is to establish an understanding of the ecology and fire-behavior of the fuels site-specific to each individual wildland/residential edge, and then manage these edges to provide safe access for firefighters defending structures that are able to resist burning embers and to hopefully stop fire before it enters residential areas.

As each agency prepares their individual plans and environmental documents, they will be required to address the cumulative impacts of wildland fire hazard reduction projects by all agencies. This will require active cooperation and long range planning by HEF member agencies. We will reserve our final opinion about how each agency handles these matters as we review their plans and environmental documents.

**Enhancing and Preserving our Natural Environment  
While Reducing the Risk of Catastrophic Fire  
Background to the Environmental Green Paper**

This Background Paper has been prepared by the Sierra Club (Sierra Club), East Bay Chapter of the California Native Plant Society (CNPS) and the Golden Gate Audubon Society (Audubon) to document our positions on several of the issues that are important to us as we explore options for meeting the twin goals of enhancing and preserving native plants and wildlife while reducing the threat of catastrophic fire at the Wildland Urban Interface in the East Bay Hills.

This topic is of timely importance because of the pending release of the environmental review documents being prepared by the East Bay Regional Park District, FEMA grants for vegetation management, and other agency documents that are to follow.

We would have preferred working with and commenting on a single draft wildfire hazard reduction plan and environmental document for the East Bay Hills with a free exchange of ideas, concepts, and details presented to and discussed with experts and stakeholders who have been involved in these matters for the past 15-years. This would have provided for an Integrated Fire Management approach at all levels, both in content and process, and among all-important stakeholders. This was the type of process that we expected after the Park District's Temescal workshops of 2000, and is consistent with our understanding of how the Park District Plan/EIR/EIS should have been developed. With that understanding, we supported Measure CC in 2004 including the \$10 million for District projects and a joint fire hazard mitigation plan that was to involve Hills Emergency Forum (HEF) agencies.

Thus, we were disappointed that the HEF decided three years ago that each agency should proceed with individual plans and environmental documents. The East Bay Municipal Utility District and the University of California had already completed their Land Use Master Plans, with Berkeley, Kensington, and El Cerrito not contemplating plans for their residential areas. The next to emerge will be the Park District's Plan/EIR that has been under development during the past two years. The consultant's draft Plan is currently being reviewed by Park District staff that will recommend several changes in the draft, followed by a public review document that is nearing completion. We also understand that Oakland intends to prepare its plan and environmental document following completion of the Park District Plan/EIR.

In our opinion, staff and consultants have developed the Draft Park District Plan in relative isolation instead of taking more time to "get specific" with recognized experts and stakeholders. True, there were four informational meetings at the Trudeau Center with consultant and staff presentations, and time for public comment. However, the District's Plan/EIR process to date, has offered little detail, so it's anyone's guess about what will be in the draft documents soon to be released for public review. We have seen very little in the way of detailed resource information, and have not been informed about which federal agency the District will use to obtain required biological opinions necessary to make its Plan/EIR complete. In the event the draft, which we have not seen, requires substantial changes or additions, we support the use of additional Measure CC funds, District funds, or use of grant funds to complete a Plan/EIR document that will be useful and supported by the environmental community and other stakeholders.

In the meantime, the District has proceeded with fuels management based on very little oversight by its own stewardship department and with a FEMA EA that covered only federally listed plant and animal species. The result has been fuels management executed without the benefit of clearly derived policy.

Meanwhile the actual vegetation management projects taking place in some areas have been fraught with controversy. We also are aware that three Federal Emergency Management Agency (FEMA) competitive grants have been awarded to the University (Strawberry and Claremont Canyons), to the City of Oakland (Frowning Ridge), and to the Park District (East Bay Hills Area) for fire hazard reduction projects. These grants will require three different project level FEMA Environmental Assessments. As with EBRPD, one of the consequences of this kind of haphazard approach has been the creation of de facto policy on the part of UC, the City of Oakland, and various stewardship groups in terms of on-the-ground management of vegetation. These policies have not had the benefit of public, scientific vetting and in some cases have now found their way into federal policy. Without proper vetting, these activities have resulted in mixed results.

It is important to note at the outset that an Integrated Fire Management approach means that the total scope of fire hazard (both from human infrastructure and from vegetation) will be considered as a first step, both in the wide scope of the East Bay Hills Wildland Urban Interface and in individual sites that are identified for some form of action. While vegetation management is surely an important part of the total picture, it must not be the tail that wags the dog as it has been in the past, particularly after the '91 fire. While the human infrastructure including roads, water supply, defensible neighborhoods, etc., is expensive to maintain or improve, only well-planned infrastructure can assure safety from catastrophic fire. The National Firewise Communities program has made that clear. By its very nature, the living landscape involves far more variability and therefore attempting to manage it means a certain lack of predictability. Without that fundamental understanding, vegetation management projects are doomed to fail in meeting the twin goals of fire safety and conservation of native habitat.

It is clear to us that the approach taken by HEF agencies will result in duplication of effort as well as an understandable level of confusion as agencies work through fire hazard and resource management plans that address their unique situations. However, in the spirit of moving forward, we offer the following guiding principles for consideration by agencies and others interested in these issues.

## **GUIDING PRINCIPLES**

- 1. We recognize that there is a frightening wildfire potential each fall for some residents living in the East Bay Hills.** Our local wildfire history suggests that there are different levels of risk faced by hill residents depending on their location. Of the approximately 30,000 homes in the hills, the actual number of homes that have been lost or families personally threatened by a wildfire has been relatively small. However, agencies and residents should not be apathetic because wildland/urban interface wildfires are becoming all too common during the past two decades, and global warming with its extremes of weather will make this century even more risky.

- a) Too many homes were lost during the Berkeley Fire of 1923, the Fish Ranch Road Fire of 1970, and the Oakland/Berkeley Tunnel Fire of 1991. These three Diablo Wind Fires destroyed homes, took lives, and caused substantial property and economic damage, and played a role in massive weed invasion of East Bay Hill native habitat. Seven other Diablo Wind Fires and many West Wind Fires have also occurred in the past along the 30-mile hill corridor without significant property loss, many before residential developments were fully extended into the hills. The above three Diablo Wind mega-fires destroyed a total of 3,600 homes during less than seven hours of rapid expansion for each fire. Wind driven fires can be impossible to control at the fire head, leaving firefighters to only work on a fires flanks until the winds slow. The 1991 fire destroyed 700 homes in one hour, a total of 3,000 homes in seven hours, and 26 lives were lost, mostly during the first hour of the fire.
- b) Predictions about what might happen in the way of wildfire, weather extremes, and climate change during the 21st century should be part of the public discussions leading to agency planning processes that will ensure appropriate preparation for wildfire and appropriate planning for wise management of natural resources. As an example, during this century the East Bay Hills will not be lucky enough to get by with zero mega-fires and zero extremes in weather. Diablo Winds in the fall months are the key environmental factor, and it will be impossible to know the exact location and timing of an ignition that will transform high winds into a frightening wildfire. The events of the 20th Century suggest that it would not be unreasonable to forecast something like three Diablo Wind mega-fires, seven “normal” Diablo Wind fires, possibly as many as 150 “normal” West Wind fires, four El Nino events, four extended freezes, and four drought cycles that will all impact wildland vegetation and residential areas during the 21st century. Agency and homeowner preparation or lack of preparation will be directly related to the amount and extent of damage that these events can cause.

- 2. Natural wildfire in wildland areas can be viewed as an event without serious consequences to humans, but at the wildland/urban interface where man has altered natural conditions, it can lead to a disaster.** When wildfire is in control, all involved vegetation and residential areas that lie in its path can be taken back to an earlier stage, to start all over again. Wildfires are different in scope and impact than controlled burns, but their potential for weed invasion can be the same. Given the level of weed invasion that is directly related to disturbance--whether it's fire or vegetation removal--, it is unlikely that native vegetation will re-set to “an earlier stage.” Rather, we are likely to see an increase in weed invasion and a disruption of our East Bay Hill native habitat unless appropriate steps are taken to control invasive weeds.

In the hills, wind driven wildfire will not distinguish between vegetation and unprepared residential structures. Virtually all development in the East Bay Hills occurred during a 100-year period when agencies and homeowners did not understand or respect the potential wildfire danger created by Diablo Winds. The patterns of residential development combined with the hills unique natural features have increased the potential for home loss during wind driven wildfire.

- a) Roads are on steep hillsides, narrow, and usually congested.

- b) Homes are in dense residential areas, mostly constructed of wood, and often surrounded by other potentially flammable homes and vegetation.
- c) Homes are on steep hillsides with limited access for fire fighters.
- d) Public agencies and large acreage landowners have allowed non-native vegetation to develop “unnaturally” with little maintenance, and with increasing levels of flammability.
- e) Above ground power lines are common in the hills and water supply for firefighting is less than desirable.

These are all recognized aspects of unsophisticated residential development in the hills, in comparison with today’s standards. Public officials and fire safety activists, all too often, want to focus on fixing the “vegetation problem” without fixing the “residential problem”. Both need short and long term attention and fixing.

**3. During some Diablo Wind wildfires there will not be enough firefighters, fire trucks, helicopters, or aircraft to save every house or even control the fire until the winds slow. Unlike “normal” fires that can be fought, to a certain extent on the ground, Diablo Wind fires prevent the placement of firefighters on steep slopes or other hazardous locations due to the speed of wind-driven fire.** Under these circumstances, quick evacuation and homeowners insurance will be the only protection for residents who have lost property.

- a) We believe that cities and area fire departments must develop more reliable fire-fighting strategies for combating Diablo Wind wildfire with more attention paid to identifying and expanding predetermined areas in both wildland and residential areas where wildfire might be stopped.
- b) Cities through their police departments must develop neighborhood evacuation plans, known to all residents and agencies, that recognize the potential for rapid spread of wildfire moving through hill residential areas with narrow and congested streets.
- c) Insurance is also necessary and critical for homeowners choosing to live in high-risk settings; however, having insurance should not be a reason for not appreciating and preparing for the actual risks being faced.

It is surprising to hear some resident’s say they like the hills and their homes just the way they are, and that they accept the risk of wildfires. This sentiment is not usually shared by most, but remains one of the more important concerns if it threatens future stability of fire hazard reduction efforts. If true and persuasive, further efforts in wildland vegetation management may not be supported during tough economic times, and less substantial efforts will result in marginal wildfire risk reduction benefit. If the status quo condition for the hills were followed, future fire losses for both large and small wildfires would be a matter for insurance coverage if it can be obtained.

Fortunately, residents have recently voted to support two significant measures that will improve their fire safety. Oakland's Wildfire Prevention District and the Park District's Measure CC have provided funding to address fire risks by two of the largest landowning public agencies in the hills. **During these funding measures, the Sierra Club, CNPS and Audubon have supported strategic vegetation management programs in our neighborhoods, regional, and local parklands that reduce wildfire risks while conserving, recovering, and sustaining native habitats.**

- 4. Recent reports compiled by firefighters and researchers in "lessons learned" from other catastrophic wildland/urban interface fires in California have shown that the most important factor in preventing homes from burning in wildland fires is hardening of structures and the creation of defensible space. We concur that the best way to protect homes from wildfire is for cities to make sure that all homes and all structures have 100' of defensible space, and that homes can resist burning embers. We strongly encourage and support programs by agencies and homeowners on local and private lands that will protect homes from wildfire.** The recently revised State Standards for defensible space and home construction can be relatively easy to inspect and achieve in rural areas, but not so easy in our densely occupied hill residential areas. Cities should determine how best to apply these standards for both individual homes and groups of homes, especially at the wildland/urban interface where property ownership is complex.

Too often, homes are permitted and constructed within 15' or less of the property line without enough space to comply with the intent of state law that homeowners should create and maintain their own defensible space. Cities must continue to ramp up their inspections to get compliance and continue their inspections even in times of economic difficulty.

Further, building codes must be updated to cover the construction and maintenance of fire safe structures that can resist burning embers. Waiting 50 years for remodels to bring new codes into force is unacceptable. Unprepared residential areas will likely not be saved during a wind-driven wildfire, and will contribute to the rapid spread of wildfire into adjacent residential areas.

As a very important matter of public policy, cities and counties should make sure that homes and other structures are not built within an indefensible distance from public-park and open space without appropriate mitigation, nor from the open space borders of other public lands. Cities should also prioritize for inspection and compliance those structures already located within an indefensible distance from public parklands. Public agencies should not have to use their limited funds and staff resources to create and maintain defensible space for new homes constructed too close to park boundaries or other public lands.

- 5. In our opinion, decisions about how best to manage our east bay hill vegetation should be based on the twin goals of reducing the risk of catastrophic fire and maintaining the fragile native habitat found in the wildland/urban interface. To accomplish these goals agencies should formulate well-conceived plans that integrate natural resource sciences and fire science.** Very little of today's East Bay

Hill wildland vegetation is truly pristine because of the dramatic landscape changes that have occurred during the past 200 years. Returning to the vegetation of 1800 or 1900 is not realistic or even remotely possible with today's population of 2.5 million east bay residents and the extensive hill residential areas that were developed during the past 100 years.

Existing native plants and habitat are the result of the unique and complex history of plant species and habitat evolution in this geographical area. Most of today's East Bay Hill public land vegetation (by counting numbers of species represented in that vegetation) is composed of "truly native" species. However, most of the plant communities, in their current locations and size, are relatively young and will continue to change. As change occurs, we believe that today's natively-evolved local species and their tendencies to aggregate into recognized "native habitats" can persist very well if allowed and assisted by dedicated land managers. These persistent, recognized habitats will indeed not remain static, and will go through stages of succession, development and rebirth during the next 200 years.

We know that "exotic" vegetation in the hills has experienced four major freezes that have killed or damaged eucalyptus trees, and that many fires have killed pine trees. Since the spread of both blue-gum eucalyptus and Monterey pines is assisted by fire, the presence of these trees pose a growing threat. We also know that global warming will result in further extremes in weather that will make the 21st century even more risky. The best we can say at this point is that we do not really know how native-like wildland plant communities will respond in detail to future climate change. However, we prefer to limit the possibilities to changes brought about by our natively evolved regional flora, and to not intermix or include species of distant exotic origins that will complicate the process and remain as potential fire hazards.

- 6. Any and all fuels management plans must be site specific, not simply vegetation and fire risk specific. In order to accomplish the twin goals of reducing the risk of catastrophic fires and of maintaining sustainable native habitat, agencies must recognize that effective management of live fuels is a subset of sound land management (and not the other way around) primarily because of the high degree of variability of living landscapes. Each site is unique and is constantly undergoing multiple processes of change and evolution. Agency plans must be based on sound environmental concepts and not just the developing science of wildfire behavior in wildland/urban interface settings.** This is the issue that caused us the most concern during the discussions following the 1995 HEF plan. We are not so sure about how much useful fire science there is that will really apply to our unique wildland/urban setting since to date very little science has been based on field collected data. Instead, there has been heavy reliance on modeling which is subject to error based on sometimes-incorrect assumptions.

We suspect that the Plan will be based on a combination of relevant local and statewide experiences with wildland/urban fire, and with some adapted fire science. However, we doubt that it will take into account detailed field-collected data on the unique characteristics of our local vegetation types. The application of sound environmental concepts will be especially important for any vegetation management program

undertaken by the Regional Park District where informed knowledge about the environment must guide what it can and should do to reduce fire risks.

**Since 1995 we have consistently urged the Park District to seek solutions that will be effective with minimum impacts on the park environment in managed areas that are designed to sustain native habitat. We have also urged that a comprehensive Resource Management and Fire Hazard Reduction Plan be prepared, along with its legally required environmental document.**

- 7. We urge the HEF and its member agencies to prepare updated mapping systems for the East Bay hills that identifies wildland plant communities as well as the type and density of vegetation intermixed with home landscapes.** Since vegetation is a key factor in wildfire behavior, we should have accurate information about the type of vegetation that exists in both wildland and residential areas. We do not currently have a good mapping system with data on the fire-prone vegetation that is intermixed with home landscapes. If we are expected to reduce the risks associated with wildland vegetation, we should definitely be reducing the risks of vegetation to be found in residential areas.

The 1995 HEF Plan is the only mapping system (other than the Park District vegetation maps of 2006 that only cover Regional Parks) available today that attempted to describe the type of wildland vegetation found throughout the 18,500 acres of undeveloped property in the Oakland/Berkeley hills (the 1995 acreage numbers do not include wildland vegetation in Kensington to Richmond residential areas or Wildcat Canyon Regional Park). The Behave computer wildfire modeling of the 18,500 acres of wildland vegetation predicted that 43% would burn with flame lengths of 8' or less that could theoretically be fought and controlled by firefighters on the ground. The other 57% of wildland vegetation would burn with flame lengths between 9' and 60', with fire fighters unable to control wind driven wildfires in these areas until the winds abate. Polygons were developed for each plant community, and the summary acreage of each type of plant community is organized in this paper as follows:

Acres Native-like Plant Communities (mostly natives by species count)

|        |                                          |
|--------|------------------------------------------|
| 4,100  | Oak/Bay Forest- Mixed                    |
| 3,847  | Grassland (mostly areas that are grazed) |
| 3,309  | Dry North Coastal Shrubland              |
| 1,418  | Redwood Forest                           |
| 918    | Successional Shrubland                   |
| 855    | Oak/Bay Woodland- Mixed                  |
| 332    | Wet North Coastal Shrubland              |
| 79     | Chaparral- Mixed                         |
| 71     | Riparian Forest                          |
| 10     | Oak Savannah                             |
| 14,940 | Subtotal (81% of wildland vegetation)    |

Acres Non-Native Plant Communities (dominated by trees with few species)

|       |                                                          |
|-------|----------------------------------------------------------|
| 1,379 | Eucalyptus- 20-year old stump sprouts (now 30-years old) |
| 859   | Pine Forest- Mature                                      |
| 836   | Eucalyptus Woodland- Mature                              |



|          |                                                     |
|----------|-----------------------------------------------------|
| 233      | Pine/Eucalyptus Mature, Mix                         |
| 222      | Eucalyptus- 5-year old seedlings (now 15-years old) |
| 47       | Pine Forest- Plantation                             |
| 6        | Acacia                                              |
| 6        | Cypress                                             |
| <u>1</u> | <u>Other</u>                                        |
| 3,590    | Subtotal (19% of wildland vegetation)               |

This initial attempt to map and classify vegetation in the East Bay Hills has proved to be inadequate for the task because it did not accurately describe our diverse local vegetation types in site-specific detail, as well as for their individual and community fuel characteristics. There are newer mapping and classification protocols developed by the State Vegetation Program of the California Native Plant Society and adopted by the National Park Service and other government agencies that can be utilized to map and describe the vegetation in these areas accurately.

However, this is only one of several important factors to be taken into account when developing a management strategy for any given polygon. Location within a watershed, slope, aspect, wind mapping (under “normal” and Diablo conditions), live fuel moisture field sampling, description of understory (not only of woodlands but of shrublands as well), soil type, soil moisture, utilization by wildlife, type and degree of weed invasion, and proximity to structures. These are the important factors that go into understanding how best to manage a given area.

We are aware that the Park District’s mapping project for Hill parks between Lake Chabot and Wildcat Canyon (and all Measure CC Parks) was finished in 2006, and that fire modeling has been completed for these parks. We will be particularly interested in reviewing the data, mapping results, assumptions used, and the fire attributes for park vegetation. We understand that the District’s 13,818 acres of hill park vegetation have been grouped into the following park plant communities, and we have organized these groups into two major classes as follows:

Acres Native-like Plant Communities (mostly natives by species count)

|           |                                          |
|-----------|------------------------------------------|
| 3,675     | Oak/Bay Woodland                         |
| 2,439     | Woodland Succession                      |
| 1,688     | Grassland (mostly areas that are grazed) |
| 1,505     | Shrubland                                |
| 1,022     | Shrub Succession                         |
| 474       | Redwood                                  |
| 110       | Willow                                   |
| <u>30</u> | <u>Riparian/Wetland</u>                  |
| 11,034    | Subtotal (80% of park vegetation)        |

Acres Non-Native Plant Communities (dominated by trees with few species)

|          |                               |
|----------|-------------------------------|
| 1,862    | Eucalyptus                    |
| 363      | Developed Park Areas and Turf |
| 341      | Pine                          |
| 30       | Mowed Annual Grass            |
| <u>5</u> | <u>Acacia</u>                 |

2,784 Subtotal (20% of park vegetation)

It appears that the fuels management done by the HEF agencies and EBRPD to date has been conducted in accordance with the old Behave (flammap) fuel models that are untested at the wildland/urban interface. If so, it has driven management decisions in ways that cannot support the goals of either achieving safer fuel loads or maintaining native habitat. If the old classification of maintaining an 8-foot flame length in all vegetation is adhered to, very little but mowed or grazed annual grassland can qualify as “safe” to maintain. The empirical result of following that prescription has often meant that the type conversion of native shrublands, such as Baccharis-dominated north coastal scrub, has created their replacement with fuel-rich French broom and light flashy fuels such as thistle, which also have poor habitat value.

On the other hand, field-collected data, including sampling for live fuel moisture, might indicate that, in some instances it’s wiser to leave vegetation in place rather than to remove it. One example would be to contemplate leaving Baccharis, which contains relatively high levels of moisture, in some sites where it acts as a green sponge, holding moisture within the plant as well as within the soil.

It is critical that if fuel modeling is to be used, it contain accurate inputs from our local vegetation under differing conditions. We do not know what the current models are that are being used to inform the conclusions of the EIR or what information is being used as input to the models.

**8. The 1995 HEF Plan did not receive full acceptance from the environmental community because it contained insufficient field collected data to support the designations of fuel characteristics of our local vegetation, did not take into account the importance of conserving native habitat, and did not include an environmental impact report as required by state law.** However, the 1995 HEF Plan identified the specific wildfire threats faced by homeowners in the hills, and recommended a mitigation program for agencies and private property owners based on the following concepts.

- a) The Plan recommended that homeowners fully comply with state law that currently requires a minimum of 100 feet of defensible space surrounding structures, and that all homes in high risk areas should be constructed or renovated and maintained to resist burning embers.
- b) The Plan recommended that public agencies continue maintenance of ridgetop fuelbreaks, and create a new type of managed area at the residential edge, that will involve both public and private lands. The width for residential edge buffer zones has been a topic of ongoing controversy for the past 15 years. Currently, most research suggest that a maintained zone of vegetation 100’ to 200’ from structures (including homeowner defensible space) is appropriate, depending on slope, type of vegetation, and site conditions. These maintained areas will not necessarily stop all wildfires, but will be essential for providing safe locations for firefighters defending homes at the wildland/urban interface.

- c) The Plan recommended that public agencies and large acreage land owners manage or convert their eucalyptus and pine groves to reduce the chance of burning embers being blown into residential areas.

**9. The 1995 HEF Plan recommended that public agencies and large acreage landowners create and maintain two different types of areas managed for fuel reduction in the East Bay Hills.** The first are the ridgetop fuelbreaks that were begun after the freeze of 1972. These fuelbreaks were created along the west boundary of regional parks with some sections along Skyline and Grizzly Peak Boulevards on city or other agency lands. Ridgetop fuelbreaks were created by removing freeze damaged eucalyptus to achieve a 300' wide zone of managed vegetation where firefighters could attempt to stop a fire that started in wildland areas to the east, before it could race over the ridge into residential areas. Public agencies that currently manage ridgetop breaks are now creating even wider resource management areas that are intended to look "natural on the ridge" without strict adherence to width criteria, usually with a roadway as the primary anchor line.

The second type of management was created after the 1982 Blue Ribbon Report and the 1995 HEF Plan. The 1982 Report recommended fuelbreaks designed to provide a minimum of 100 feet of managed vegetation (including what the homeowner is required to do for defensible space) at the wildland/urban edge. The 1995 HEF Plan recommended fuelbreaks within a 500 foot study area, that in itself became controversial and confusing, designed to provide an area of managed vegetation with less than eight-foot flame lengths at the wildland/urban edge where firefighters could safely work to protect homes.

While there is no mystery about the reason for reducing live fuels when residential areas are located at the edge of large public parks or other areas of dense natural-like vegetation, there is as yet no clear understanding of what management should be on specific sites since prescriptions have been generic or non-existing. Nonetheless, most park agencies are using some form of vegetation management on public lands at their residential edge to reduce the chance of wildfire moving from public lands into residential areas.

**10. The Sierra Club, CNPS, and Audubon have not been satisfied with the Park District's approach for maintaining its fuel-managed areas. We know that fuelbreaks constitute a combined area of more than 20 miles and 500 acres, often covered by weedy species, mowed below 4" of height, or over-grazed by goats. Also several eucalyptus management, thinning, or conversion projects exist that need attention.** We are concerned that the Park District's consultants and its staff have yet to articulate a clear vision about how they intend to maintain this interface while favoring and increasing the percentage of native plants over weedy, fuel-rich non-natives. This topic will be a subject for further comment and focus by our members and experts during agency Plan/EIR processes.

From the Park District's perspective, focusing vegetation management efforts in the immediate area adjacent to homes means that larger areas of native-like park vegetation can remain unaffected. Most of the required District fuelbreaks are already in place with missing sections to be identified in the Plan/EIR. However, because very little

attention has been paid to maintaining healthy native habitat, these sections will need to be reviewed for site-specific sustainable practices as part of the vegetation management plan.

- a) New fuelbreaks recommended for park grassland areas are either currently grazed or are on sites where brush succession has yet to occur. Continued grazing or mowing should be sufficient to maintain relatively narrow areas of grassland as fuelbreaks. Maintenance to reduce exotics and to increase native flora that will be sustainable should be the prime objective, so close attention must be paid when using goats or personnel unfamiliar with both exotic and native vegetation.
- b) Shrublands are another matter requiring intensive management of wider fuelbreak widths when shrub species are retained because of their potential flame heights and rate of spread. Prescriptions usually call for shrub "islands" with about 30% of shrub cover (with retained shrubs pruned at four feet in height and cleared of flammable wood debris), with 70% open areas that are usually mowed. An alternative option for existing shrubland areas is to convert to a narrower fuelbreak width of grassland with regular mowing in the spring and summer.
- c) Oak/bay woodlands are a relatively fire-safe plant community, with periodic clearing of ladder fuels being the only maintenance near homes.
- d) In areas of non-native vegetation, conversion to the adjacent native-like plant community can be the best solution with over seeding of local ecotypes of native grasses and associated flora when soils are disturbed or left bare during conversion.
- e) However, many of the District's earlier fuelbreaks involved a more destructive conversion during logging of eucalyptus and pine groves in the 1970s, followed by 30-years of mowing or goat grazing resulting in weed problems and broom invasion. These areas will require a different approach to re-establish natives, and a maintenance program that will pay attention to the removal of weedy plants and to increase the overall percentage of natives.

**11. Non-native eucalyptus and pine groves can exceed 120' in height and can be prone to dramatic fire behavior. When wind drive wildfire reaches their crown, flames above 150' can be expected with burning embers blowing downwind well beyond one half mile. The capacity to spot new fires that overwhelm firefighting forces during Diablo Wind conditions means these species must receive high priority for treatment.** Non-native plant communities in the hills are today's remnants of the tree planting efforts of two Oakland businessmen who forested the hills for future residential development and for hardwood lumber production. Frank Havens and Borax Smith formed the Realty Syndicate in 1895 to sell lots and homes to new residents who would also buy tickets to ride their trains. They launched a massive tree-planting program to beautify their 13,000 acres of hill land, and a few years later Havens formed the Mahogany Eucalyptus and Land Company to plant gigantic plantations of blue gum eucalyptus on his privately owned water company lands to meet the state's growing demand for hardwood lumber. Both enterprises could not be repeated today, but have

created increasingly significant environmental impacts that residents and agencies must now address that will be increasingly expensive in the future.

We have used “non-native” as the appropriate term for describing Havens bluegum (and redgum) eucalyptus trees from the Island of Tasmania Australia, and for describing pines and cypress from the coastal regions of central California. It is not only the “appropriate term” to use, but it carries broadly significant meaning in terms of the impacts these non-native species created and continue to present to the locally-evolved native biodiversity. It is not sufficient to consider these several non-native species as isolated occupants of the land. They each have large contextual, negative impacts that must be factored into any equation regarding protection and preservation of native resources in areas of locally diminished open space acreage.

Non-native eucalyptus and pine are some of the most dense and flammable plant communities in the hills. Un-maintained eucalyptus groves can have 400 to 900 trees per acre with fuel ladders into the canopy and 30 to 100 tons of flammable fuel on the ground. Wind driven wildfire in these groves can be expected to produce flame lengths and ember throws that will quickly overcome firefighters and significantly reduce evacuation time for homeowners.

Unmaintained pine groves are also extremely flammable with deep needle duff on the ground and dense pine seedling growth within and around the grove. The presence of Monterey pines intermixed with native coastal scrub also provides a source of tinder that contributes to crown fires since the needle duff can be ignited by embers and can burn off the live fuel moistures of species like Baccharis.

The recommended strategy for eucalyptus and pine groves is to manage or remove trees and groves that are close to residential areas that could throw burning embers long distances (including over fuelbreaks, natural barriers, and manmade barriers) into residential areas.

- 12. Native-like vegetation and our native woodlands are generally below 40’ in height, and are less prone to unmanageable fire behavior. Native-like plant communities form 81% of today’s wildland vegetation in the hills comprised of mostly plants that are truly native to the East Bay.** The recommended strategy for protecting residential areas from wildfire coming from native-like vegetation is to establish an understanding of the ecology and fire-behavior of the live fuels site-specific to each individual wildland/residential edge, and then manage these edges to provide safe access for firefighters defending structures to hopefully stop fire before it enters residential areas.

Most areas offer a range of small to large acreage (sometimes in a mosaic and sometimes as a single type community) of grassland, shrubland, oak/bay woodland, or redwood forest. These plant communities are rather young, achieving their current location, size, and form as a result of both human impacts and plant succession over the past 200-years. Photos at the turn of the 20th century show the hills dominated by grasslands (many of which were maintained by cattle grazing) with smaller areas of shrubs, oaks, redwoods, and riparian vegetation.

Recent research involving the analysis of phytoliths concluded that the historic plant community for well over 1000 years was baccharis-dominated coastal scrub. Thus, the jury is still out in terms of extent and distribution of the true historical vegetation types.

The density and distribution of today's native-like plant communities in the hills are unique to the 20th century and provide excellent habitat for wildlife and other species that make up today's diverse ecosystems. At many locations there are also endemic animals, birds, or plants that have legal standing. These listed species require individual monitoring, protection, and careful management.

Each native-like plant community behaves differently in wind-driven fire. Grassland fires are flashy and move quickly, but are relatively controllable. However, they provide a faster means of ignition and spread of fire into other vegetation, particularly upslope. Shrubland fires can also move quickly and some shrubs can produce flame lengths above 30 feet and, once ignited, are more difficult to control. Unfortunately, there has been little research into the important factors that affect ignition in the unique and various East Bay Hill shrub communities and they are thus far poorly understood. Because of the lack of specific field-conducted studies that would help elucidate both the ecological and fuel-related behaviors of individual species and shrub communities, they have been collapsed into the generic category of "brush," assigned fuel characteristics from other more fire-prone species, and been targeted for aggressive fuels management. Fire in native woodlands produces lower flame lengths but can also crown and produce burning embers under extreme conditions.

- 13. The debate about wildfire risks attributed to non-native eucalyptus trees has been a controversial topic for years. In our opinion, there is ample evidence to show that eucalyptus and pine trees, in dense unmanaged groves, are both a wildfire threat and an environmental dilemma that requires attention.** Individuals who love eucalyptus trees aggressively defend the tree, arguing that it has been naturalized to this area, it provides habitat for wildlife, and it is not an unusual fire threat. Narratives about both the threat and the environmental dilemma can be found in the statements, articles, papers and reports contained in Appendix A.
- 14. We are most concerned with the process by which decisions will be made about the most flammable and potentially controversial plant communities in today's parklands. We don't endorse generic options but favor site-specific analysis that is grounded in the best possible science. In practice, that means that any one given eucalyptus or pine grove will be managed for its unique characteristics to achieve fire safety, conversion to native plant habitat, or made safe for public use.** However, the threat factor is now relatively clear and can't be denied.
- 15. The subject of eucalyptus and pine grove management remains controversial among people of good will. In the interim, the Sierra Club, CNPS, and Audubon offer the following statements for consideration when reviewing agency plans and environmental documents.**
  - a) Agencies and private landowners should focus their efforts on removing eucalyptus and pine groves on or near the high ridges and on leeward slopes

(West facing) above homes to allow these spaces to convert to native-like vegetation that is less prone to spectacular wildfire behavior.

- b) Eucalyptus areas that were logged between 1972 and 1974 should be revisited to remove all 30-year old stump sprouts and seedlings that will not form good park woodlands, and to allow these areas to convert to native-like vegetation.
- c) Groves that are thinned to retain mature eucalyptus trees should keep 30 to 50 trees per acre with shrubs removed and ground fuel maintained at less than two tons per acre. However, everyone should understand that single-age stands do not usually make good permanent park forests because the stand will eventually reach its natural stage of decline and become a hazard that should be removed. At that time conversion to native-like vegetation should take place.
- d) When eucalyptus and pine trees are removed, the areas they occupy should be managed to convert without planting new trees and shrubs to a fire-safe native-like vegetation that blends with and expands adjacent plant communities. The type of replacement vegetation and any required maintenance depends on site conditions and the type of plant community desired.

When a healthy understory of oaks, bays, and associated trees are present under the eucalyptus or pine canopy, they should be saved during logging and allowed (without additional tree planting) to become the replacement tree canopy.

When an understory of native trees is not present (especially on ridge tops and dry slopes), grassland and shrubland plant communities should be allowed to re-establish and succeed by appropriately controlling broom, thistle, and other invasive, fuel-rich species. Native shrubland will sometimes reestablish after the eucalyptus canopy is gone if invasive weed species are held in check.

When there is sufficient native grass cover and/or seedbank in areas to allow for establishment of good quality grasslands, these can be carefully restored and managed by grazing or mowing to prevent re-succession of shrublands. However, in the absence of a native grass seedbank, weeds will dominate the resulting "grassland". In this case, re-succession by native shrubs can help restore quality habitat.

- e) Thinning young eucalyptus woodlands of suckers and sprouts to create a temporary managed grove is less desirable and may be untrustworthy on our steep and windy hillsides when the goal should be to convert to native vegetation. Thinning eucalyptus and waiting 30-years for native plant establishment under the canopy will allow ladder fuels to become established, and repeated costly logging projects will double environmental impacts.
- f) We support efforts to keep mature eucalyptus trees in groves that can be thinned and maintained as a mature tree canopy for existing and future recreational activities, or as a historic tree grove to be retained pursuant to a park's adopted Land Use Plan.

- g) We will be particularly interested in the policies that guide when to thin and retain a grove, and when to achieve a conversion to native-like plant communities that are appropriate to the site. As an example, for a grove with 300 trees per acre, it might be short sighted to take out 250 trees per acre to keep a grove when conversion to native vegetation could achieve multiple goals. This would be especially true for areas in parks where native vegetation should be the objective.
- h) In all cases, logged eucalyptus stumps must be treated and killed to prevent sucker growth.
- i) Control of weed species such as broom, euphorbia, and eucalyptus seedlings is essential during all maintenance and conversion projects.
- j) Non-native trees (such as eucalyptus and pine) that are small but will become large and are not part of the designed park landscape should be removed at the earliest time possible to keep costs low, minimize resource damage, and allow native-like vegetation to develop as soon as possible.
- k) Tree removals (logging) can be very controversial, and the immediate appearance of logged areas can be dramatic, triggering public protest from people who have not responded during the planning process but are motivated to speak out once logging begins. Often the public is unaware of the costs and tradeoffs of large-scale projects such as logging. As a result, tree-logging projects must be made to be very visible during the entire public process. Before logging projects are presented to the Board for approval to seek bids, staff should ensure that the tree project has specific Plan/EIR clearance with a notice posted in the park before the Board meeting and "left posted" until project completion. After the Board approves a contract, District managers and Board members must be ready to support the tree removal project through to the end. After the contract is awarded and the work begins (sometime months later), experience has shown there will always be a member of the public who sees what's happening, pleads to save trees, and will lobby to stop all work.

**16. As each of the East Bay Hills Emergency Forum agencies prepares their individual plans and environmental documents, they will be required to address the cumulative impacts of wildland fire hazard reduction projects by all agencies. This will require active cooperation and long range planning by HEF member agencies.** The HEF will need to provide sufficient coordination to make sure that potential cumulative impacts are clearly described, and that significant cumulative impacts can be avoided. We urge all agencies to consult with their legal advisors for guidance in developing plans that will address the cumulative impact issue. Of course, we will reserve our final opinion about how each agency handles these matters as we review their plans and environmental documents.

- a) Agencies should commit that cumulative impacts will be avoided while converting high-risk eucalyptus and pine groves to native vegetation, and that they will consider their projects to be self-mitigating projects that complete the work begun in 1973/74. Most of the involved public agency acreage was logged after



the 1972 freeze. The removal of multiple stump sprouts and dense seedlings in already logged areas is ongoing work that needs to be completed. Sprouts and single age stands of seedlings are unsuitable for forming safe and healthy woodlands.

- b) Agencies should commit that cumulative impacts will be addressed and avoided by their projects, when considered separately or together, and that they will involve relatively small acreage dispersed along a 30-mile long wildland corridor that totals more than 18,500 acres of similar vegetation
- c) Agencies should commit that cumulative impacts will be avoided by their projects that are coordinated on lands separated by time and space from other agency projects. Coordination will be used to ensure that work will be scheduled over a reasonable period of time, and that there will be no cumulative impacts from overlapping work on the same or adjacent lands.
- d) Agencies should commit that cumulative impacts will be avoided when their projects are coordinated to have sufficient distance between projects by others in location and time, and ensure that there will not be significant cumulative unmitigated impacts on common resources such as wildlife and keystone habitat.
- e) Agencies should agree that they will not allow vegetation management projects to have a significant cumulative impact on sensitive species or habitat because of existing environmental regulations that will be followed, and because of the biological opinions and mitigations that will be required by state and federal resource agencies.

### Appendix A

The following quotes, articles, and reports provide additional information and perspective about the fire hazards and the environmental dilemma posed by eucalyptus and pine plantations in the East Bay Hills.

- a) In March of 1973, H.H. Biswell, Professor of Forestry and Conservation at the University of California, Berkeley made this prophetic statement. “When eucalyptus waste catches fire, an updraft is created and strong winds may blow flaming bark for a great distance. I think the eucalyptus is the worst tree anywhere as far as fire hazard is concerned. If some of that flaming bark should be blown on to shake roofs in the hills we might have a firestorm that would literally suck the roofs off the houses. People might be trapped”.
- b) James Roof, Director of the Tilden Botanic Garden, in his detailed paper of February 1973, made observations about the areas wildfire risks, about eucalyptus tree risks and impacts on native flora, and offered his recommendations following the freeze of 1972.
- c) Professor Robert Stebbins, Professor of Zoology at UC Berkeley and the curator of the UC Museum of Vertebrate Zoology has been a long-time advocate for retaining eucalyptus groves because of the habitat they provide for local wildlife especially amphibians and birds, and prepared several papers on this subject during the 1995 HEF plan review period.
- d) The Temescal EIR Advisory Group in 2000, listed the following guidelines for eucalyptus and pine forests: “Eucalyptus Forest – This introduced forest community is highly controversial because of the extreme fire behavior that it can generate and because a significant number of native species that have adapted to it. It is a high priority for management, particularly in areas where it has the potential for involvement in wildland fires. Management plans must also take into account impacts on those species that have adapted to Eucalyptus. A number of native raptor species including the Turkey Vulture, Red-tailed Hawk and Great Horned Owl seem to prefer Eucalyptus to native forests in a variety of circumstances. Nest and roost trees should be identified and accommodated with appropriate buffers, where feasible, in fuel-break planning. Monterey/Bishop Pine Forests – This transplanted California native plant community occurs in dense stands and as individual specimens in several areas within the study area. Although less widespread than Eucalyptus, these coniferous forest species are also preferentially used by native raptors including the Golden Eagle. As with Eucalyptus, nest and roost trees should be identified and accommodated with appropriate buffers, where feasible, in fuel break planning.”
- e) The Vegetative Management Plan for the Eucalyptus Freeze Affected Areas in the Berkeley-Oakland Hills was prepared to guide the efforts of agencies working to reduce the potential for wildfire after the freeze of 1972. The Plan was prepared after the hills were declared a disaster area by the State’s Governor, and was adopted before the California Environmental Quality Act was amended to include public agencies.

- f) The Ubiquitous Eucalyptus article, by Bill O'Brien in the fall 2005 BayNature magazine describes the history of eucalyptus trees in the East Bay as well as statements and opinions by local "experts" about both positive and negative aspects of eucalyptus trees.
- g) Respect for the flammability of our hill's dense eucalyptus groves is common knowledge among local fire chiefs. Fire departments have not been willing to use prescribed fire (with prescriptions set for when fire control is theoretically possible) to reduce the flammability of groves by clearing the 50 to 100 tons of ground fuel that can be found under unmaintained eucalyptus groves. Fires in native-like vegetation will not burn well in the hills during most of the year, but fires under eucalyptus with its shredding bark and oily leaves can move to the treetops during almost any season. Professor Biswell tried unsuccessfully, in the 1970's to establish prescribed fire as a local maintenance practice in eucalyptus, as is done in Australia. Regional Park Fire Chiefs have wavered, and remain unwilling to use this technique even today because of the risk of escaped fire, and because of smoke impacts on the air basin.
- h) The 1995 HEF Plan (in its final Report and Technical Appendices) determined that eucalyptus and pine trees and the burning embers that they can produce in a wind driven wildfire are an important factor in the wildfire risks faced by hill residents.
- i) Javier Trelles, and Patrick J. Pagni UC Berkeley Professors analyzing the role of wind patterns during the 1991 fire, described the Sunday morning fire start as follows. On October 20, at 6:00 a.m., the normal weather pattern was interrupted as winds in excess on 10/ms arose from N 35 degrees E and the relative humidity dropped below 10%. This strong, dry convective current began to dramatically lower the moisture level of the previously soaked burn area of the Saturday fire. The ambient temperature climbed to 90 degrees. The few embers that remained buried overnight were by 10:45 a.m. spotting to new areas of dry fuel. Between 11:15 and 11:30 a.m., extremely rapid fire spread in windward direction overwhelmed fire crews called in to help. The initial brand material came primarily from Monterey pine, *Pinus radiata*. About 650 meters from the fire origin, the fire engaged a 35-meter high stand of Eucalyptus globules that quickly became an inferno releasing copious brands. Once structures became involved, the shakes and shingles they liberated further exacerbated the flaming brand problem.
- j) The East Bay Hills Oakland-Berkeley Fire that was investigated by J. Gordon Outlay. His report was conducted under contract to the United States Fire Administration, Federal Emergency Management Agency. The following excerpts are taken from his report.

"Fire has been a part of the history of the Oakland-Berkeley Hills area throughout its history. As with many other marine climates, fuel moistures are such that during most periods, fires do not cause dramatic damage but rather help maintain a balance of fuel types and reduce fuel loads. The

native flora and fauna had adapted correspondingly with the natural occurrence of fire in the area.”

“Additionally, the introduction of vegetative species which are not native to the area has dramatically impacted fuel loading. This is particularly true of the introduction of eucalyptus. Fuel accumulations in some areas under eucalyptus plantations have been estimated between 30 and 40 tons per acre. Monterey Pine was also introduced into the area and contributed significantly to the fuel loading.”

“Additionally, eucalyptus is susceptible to freeze damage, as occurred in 1972, when large numbers of eucalyptus were killed due to an extended period of below freezing temperatures, and again in December of 1990. The dead trees and limbs added a significant amount of dry fuel in the area. Also, eucalyptus sprouts back from the stump and this sprouting after freezing or after logging operations has also increased fuels in some areas.”

“Between 1986 and 1991 most of California experienced drought conditions. This situation was recognized as creating more and more critical fire risk conditions each year. The unprecedented drought was accompanied by an unusual period of freezing weather, in December of 1990, which killed massive quantities of the lighter brush and eucalyptus.”

Appendix C

MEMORANDUM OF UNDERSTANDING  
For Cooperative Vegetation and Habitat Mapping and Classification  
June 1, 2000

# MEMORANDUM OF UNDERSTANDING

## For Cooperative Vegetation and Habitat Mapping and Classification

June 1, 2000

### I. Preamble

In keeping with the policies and principles of the California Biodiversity Council, the signatories mutually agree by this Memorandum of Understanding (MOU) to establish a cooperative vegetation and habitat mapping initiative which will facilitate statewide joint data collection and processing, establish common mapping and classification standards across all ownership, and provide timely response to both State and Federal information and analytical requirements.

### II. Background

Vegetation is among the most important characteristics of California's natural environment. Vegetation provides food and shelter for the State's terrestrial animal species, aids in the maintenance of aquatic habitats and is the larger community that supports our many unique plant species. Vegetation acts as a filter for the state's watershed lands, provides valuable forest products, economic benefits, and recreational opportunities to the citizens of California. High quality data are critical for the preservation, management and risk assessment of California's ecosystems and the vegetation upon which we all depend.

Agencies involved in this MOU have intermingled responsibilities and often produce vegetation, habitat maps and classification systems in their ongoing activities in different ways. Such maps help to pinpoint habitat and species likely to be affected in any given planning area by management decisions. They also provide critical information necessary to identify and prioritize vegetation and habitat conservation activities. Coordinating efforts across the state will improve the efficiency in the use of public funds to meet our shared responsibilities. This combined effort will improve access to data, provide greater consistency in how data are developed, and meet the on-the-ground needs of field staff. A statewide effort to facilitate more standardized mapping, and classification of vegetation and habitat will produce more compatible data across administrative boundaries.

### III. Goals, Strategies and Objectives

The goals of this MOU are to establish and maintain statewide vegetation and habitat data layers of known accuracy in compliance with the National Vegetation Classification System (NVCS).

The strategies consist of collaboration with data sub committees, and others in the following areas:

- Sharing of and access to vegetation information and technical expertise.
- Identification and implementation of classification and mapping priorities, including accuracy assessments.
- Cost sharing and/or in-kind services to implement identified priorities.

Specific objectives include:

- Develop common standards for data content, data capture methods, field procedures, accuracy assessment and documentation.
- Complete a hierarchical vegetation classification system adaptable to varying goals of the signatories and improve vegetation and habitat classification and crosswalks between systems
- Complete and maintain a vegetation map of all public and private lands in California on a regional basis through interagency cooperative efforts as the basis for vegetation inventories and assessments of habitats, including detection of changes.

#### IV. Principles of Agreement

Agency staffs agree to participate in a Core Group to coordinate implementation of the goals and objectives of this MOU. Agency staffs also agree to communicate through periodic meetings of the Science Coordinating Committee for Vegetation.

#### V. Authority

This MOU does not modify or supersede existing statutory direction of the signatories.

#### VI. Modifications

This Memorandum is to remain in effect until modified by the parties in writing. It is negotiable at the option of any of the parties.

#### VII. Termination

Any party may terminate their participation in this MOU at any time when all parties are notified in writing.

#### VIII. Non-Binding Obligations

This MOU is a declaration of policy and represents the intent of the parties in principle only. It is not binding on the parties. In the event the parties to this MOU desire to formalize the principle intent of this MOU, they will enter into a fully integrated agreement at a later time.

#### IX. Completion Date

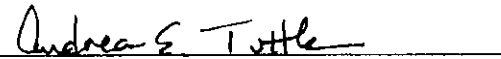
This MOU is effective for each participating agency upon signature date shown below.

## MEMORANDUM OF UNDERSTANDING For Cooperative Vegetation and Habitat Mapping and Classification



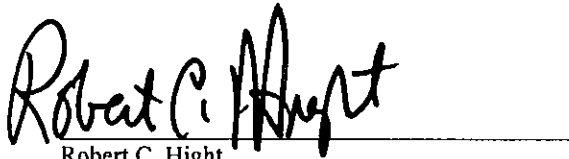
Mary D. Nichols  
Secretary for Resources  
The Resources Agency

Date 9/19/00



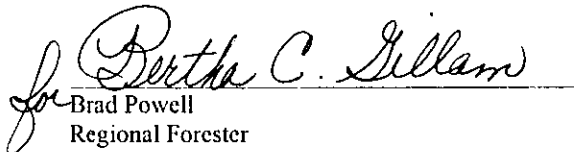
Andrea E. Tuttle  
Director  
California Department of  
Forestry and Fire Protection

Date 7-19-00



Robert C. Hight  
Director  
California Department of  
Fish and Game

Date 8-17-00



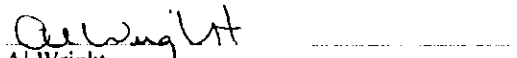
Brad Powell  
Regional Forester  
Pacific Southwest Region  
USDA Forest Service

Date 9/20/00



Lester A. Snow  
Regional Director  
Mid-Pacific Region  
Bureau of Reclamation  
U.S. Department of the Interior

Date 9-7-00



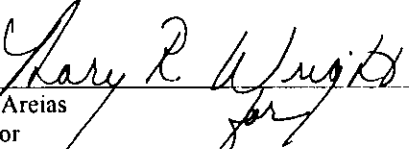
Al Wright  
State Director  
Bureau of Land Management  
U.S. Department of the Interior

Date 7/6/00

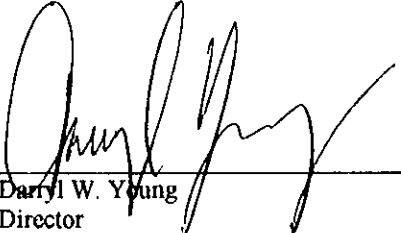


# MEMORANDUM OF UNDERSTANDING

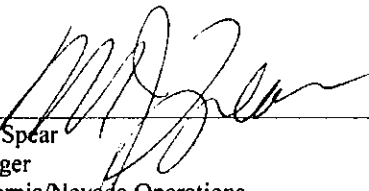
## For Cooperative Vegetation and Habitat Mapping and Classification

  
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Rusty Areias  
Director  
Department of Parks and Recreation

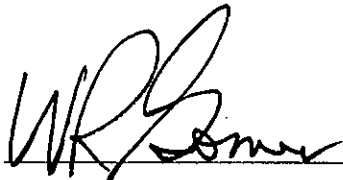
Date 9/18/00

  
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Darryl W. Young  
Director  
Department of Conservation

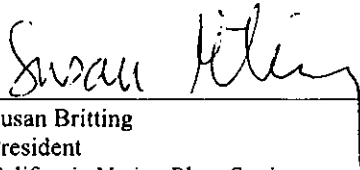
Date 7/21/00

  
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Mike Spear  
Manager  
California/Nevada Operations  
U.S. Fish and Wildlife Service

Date 9/19/00

  
\_\_\_\_\_  
W. R. (Reg) Gomes  
Vice President -- Agriculture and Natural Resources  
University of California

Date 2-5-01

  
\_\_\_\_\_  
Susan Britting  
President  
California Native Plant Society

Date 31 October 2001

**From:** [Jonathan Robinson](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Acacia Cuttings  
**Date:** Tuesday, May 28, 2013 10:00:22 AM

---

Hello,

The Acacia tree is a very valuable wood and is widely respected in the Hawaii region as Koa wood. I am raising my hand to take possession/purchase/etc., for the Acacia wood and would be interested in learn what I might need to do to take possession of the wood, if the directives were to cut down the lovely tree.

I urge the region NOT to cut down, but if it is to distribute the lovely wood to people who are interested like myself....

Regards,

*Jonathan Robinson*

Optimal Intelligence, Inc.

CAPI #: 27655

CAPS #: 1109

877.700.6474 x100 m

650.537.1000 c

808.791.8377 f



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**From:** [phila.rogers](mailto:phila.rogers)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Comments on Hazardous Fire Risk Reduction, East Bay Hills, CA, draft EIS  
**Date:** Monday, June 17, 2013 4:20:13 PM

---

My name is Phila Rogers, I am a naturalist living for 62 years in the Strawberry Canyon watershed. I write about natural history subjects for the Lawrence Hall of Science website ("Local Nature Stories"). I co-lead bird trips at the UC Botanical Gardens and participate in the annual Audubon Christmas Count. I have written extensively about Strawberry Canyon over the years for various publications. I am a retired science writer from Lawrence Berkeley Laboratory.

What follows is a brief summary of my concerns about the DEIS (My original long document was lost today on the internet). I am restricting my comments to Strawberry Canyon

The DEIS fails to document the safety of widespread herbicide use in a sensitive watershed.

I question why only one approach to fire mitigation is proposed.. A far less draconian approach was taken by Lawrence Berkeley National Laboratory in their recently completed vegetation management program (see <http://www.lbnl-cag.org/content/10024/preview.html>).

The likelihood of some slash from the heavy mulching with eucalyptus chips is likely to wash into Strawberry Creek during winter rainstorms and cause flooding downstream.

There is no mention that eucalyptus produce summer-long fog drip watering other vegetation and helping to maintain the water table. Eucalyptus is a habitat for a variety of birds -- raptors for nesting and perching, and passerines who feed on blossom nectar.

No realistic thought is given to the landscape which will follow the clear cut. Most likely candidates are exotic species like the highly invasive and flammable French broom. Will eradication call for the use of more toxic herbicides like Garlon?

The DEIS provides no calculations on the impact on global climate change by the wholesale destruction of trees.

I am particularly concerned about the future of the UCB Ecological Study Area -- approximately 300 acres -- that were set aside in the 1960 which were to remain undisturbed for research and teaching. The blue and white signs are posted in the area and at trail heads prohibiting the removal of plants or animals. The DEIS has failed to address the fate of these protected areas with clear cutting and the heavy use of herbicides.

The DEIS is a seriously flawed document which fails to consider the value of Strawberry Canyon to walkers, joggers, bird watchers and all those who value a touch of wildness so accessible to the Berkeley Campus and the surrounding urban communities.

-- Phila Rogers

## Laurie Rolfe

2116 Jefferson Avenue  
Berkeley, CA 94703  
T 510-849-0305

[laurierolfe@yahoo.com](mailto:laurierolfe@yahoo.com)

[www.synergyii.com](http://www.synergyii.com)

[www.nativeorganic.com](http://www.nativeorganic.com)

June 14, 2013

To Whom it Concerns

U.S. Department of Homeland Security's Federal Emergency Management  
Agency's (FEMA)

P.O. Box 72379

Oakland, CA 94612-8579

Re: Draft EIS on proposed Hazardous Fire Risk Reduction, East Bay Hills, California

By email: [EBH-EIS-FEMA-RIX@fema.dhs.gov](mailto:EBH-EIS-FEMA-RIX@fema.dhs.gov)

I have lived in Berkeley for over twenty years and I work in the East Bay as well. Only recently have I learned about the plans to cut thousands of trees and use hazardous chemicals to prevent regrowth in our hills, in an effort to reduce the risk of fire.

The FEMA Draft EIS for UC, Oakland, and EBRPD management projects in the hills is unacceptable to me because it doesn't consider the effects of these project plans on greenhouse gas emissions or on the resulting reduction of the carbon sequestration capacity of our forest environment. I'm hoping FEMA will retract the EIS and rework it to fully consider all the implications of cutting down so many tall trees and inhibiting growth with the use of herbicides.

I am not a scientist but I have worked for many years with an engineer of renewable resources (Synergy CA LP), taken Permaculture coursework at Merritt College and currently work with a US-grown, organic cotton textile contractor (Native Trading Corp.). I have learned a great deal about holistic systems from this work. I believe all parties to this EIS must consider solutions within a holistic framework.

For example, with Synergy CA LP I became familiar with the work of Ed Burton a Cal graduate in the 40's in chemistry and forestry. Mr. Burton passed away in Oct. 2010 but left us a legacy of thoughtful and inventive methods and tools to deal with fire risk reduction and sequestration and the reuse of forest "debris". Please refer to information on his website which is active and tracked by Synergy CA LP; Reinhold Ziegler R.E. <http://www.edburtoncompany.com>  
In particular please note his research and development of forest maintenance tools that can be remotely powered by solar energy and operated by semi-skilled labor. This Cal graduate, with 50 years of forest observation, developed safe, quiet and efficient tools for sustainable forest management and the reuse of "waste products" for energy production and sequestration that

could fertilize selected regrowth. UC has a Woody Biomass Utilization division that works with multiple agencies, organizations and businesses. Their website says their projects are funded primarily by the US Forest Service Region 5 State & Private Forestry and the California Department of Forestry and Fire protection. I believe as their website states, "Woody biomass in forests is a huge potential resource in California." Lets not leave a wasteful and hazardous two feet of wood chips on the ground when we could selectively cull what's necessary of the under-story and make productive use of it. <http://ucanr.edu/sites/WoodyBiomass/about/>

My experience at Merritt College, learning about Permaculture, showed me how "maximizing useful connections" in natural or designed landscapes can increase fertility and yield. Though this education was not focused on forests, the benefits of the proximity of forests to agriculture (which includes people) is indisputable. The people of the East Bay including everyone from the UC Berkeley Botanical Gardens to my small home with potted plants, benefit from the filtering, pollinating and stabilizing capacities of our hills, trees, fields, water resources and resident animals and insects. As the stewards of all of this habitat, every applicant on this EIS should work together to insure that the benefits we all enjoy are not diminished for any special interests or short term assurances. We are all connected.

More recently, in learning about the history of cotton production I can see why industrialization has lead to "dirty" cotton by requiring huge water, pesticide and herbicide inputs. Cotton, as well as grapes, tomatoes, fruit and nut trees are all sensitive to hormone-type herbicides like triclopyr (Garlon and Remedy) which is proposed for use by UC in the EIS. There are, of course, negative consequences for people also; to our eyes and skin, associated increase of cancer incidents, kidney damage and reproductive problems. Parallel to the process of cotton growing, won't the use of toxics to control natural reforestation encourage the proliferation of super bugs and invasive vegetation in addition to risking public health? Surely UC can't intend to build on every square foot of both canyons. Will we need Monsanto Bt trees to replace what UC proposes to control with gallons of triclopyr or glyphosate?

I just hope we can spend our taxes monies on real fire mitigation in the East Bay Hills in an effective and creative way. I believe that is what our community expects and wants to be known for.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'L Rolfe', with a stylized flourish at the end.

Laurie Rolfe

**From:** [Rollam Group](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** No on funding of cutting down all the trees in the east bay hills  
**Date:** Sunday, May 19, 2013 7:38:20 PM

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IT is a terrible plan to cut down all the trees in the east bay hills but have no plan to replant. If half the money was used for replanting, maybe that would work but your plan is idiotic and no one wants no trees and a bunch of herbicides instead of a nice park. I hope you do not give the funding.

**From:** [R. Romano](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [Hills Conservation Network](#)  
**Subject:** Do not  
**Date:** Wednesday, May 22, 2013 2:17:19 PM

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I am extremely opposed to the proposed work in the FEMA draft EIS in this project, because of it does not address the effect on Greenhouse Gas emissions.

I am surprised such an important economic model and the ongoing work to reduce carbon emissions was lacking in the report. There are externalities that need to be accounted for.

The analysis not only uses an inappropriate baseline, but also fails to adequately consider the loss of ongoing carbon sequestration that will result from these projects. We ask that you retract the EIS and rework it to fully consider all the Greenhouse Gas implications of cutting down 100,000 tall trees.

Additionally, the FEMA draft EIS for UC, Oakland, and EBRPD projects is unacceptable as currently written in that it does not adequately address the cost or the risks associated with the herbicide use that is being proposed. A better assessment is needed to study the implications of the expected herbicide use not only to kill eucalyptus trees, but also the hemlock, broom, thistle, and poison oak that will emerge as a result of the loss of shade canopy.

I also object on the basis of lack of investigation of alternative mitigation methods. Less costly, and different, perhaps as effective methods should be evaluated and measured in the EIS. The EIS only purported there was 2 options: cut down 10,000 trees or do nothing. I was surprised by this lack of nuance.

Another issue is air quality resulting from the the work as it unfolds in the proposed plan. The EIS should be reworked to fully consider all the implications of the proposed projects on air quality.

In summary, cutting down close to 100,000 trees is a terribly misguided policy in times where the rest of the world is busy planting and conserving trees. Al Gore would be horrified!

Please retract the EIS and conduct a proper study to address these concerns.

Thank you.

Sincerely,

Robert Romano  
1345 Alvarado Road  
Berkeley, CA 94705



**From:** [Thomas L. Rosenberg](mailto:Thomas.L.Rosenberg)  
**To:** [EBH-EIS-FEMA-RIX](mailto:EBH-EIS-FEMA-RIX)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects  
**Date:** Friday, June 14, 2013 10:38:31 AM

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To whom it may concern,

The FEMA Draft EIS for UC, Oakland, and EBRPD vegetation management projects in the hills is unacceptable because it fails to adequately address many aspects of the environmental impact of the proposed action.

1) Carbon sequestration and air quality: By cutting down the trees and soaking the area in herbicides greenhouse gas emissions will increase from the loss of soil carbon, the loss of carbon sequestration by the trees and their purification of the air will be lost. The EIA analysis also uses an inappropriate baseline. We ask for the EIS to be retracted and reworked to fully consider the greenhouse gas and air quality impacts of cutting down 100,000 healthy trees.

2) RoundUp is not safe. Applying tens of thousands of gallons of herbicide to kill one species of trees will kill many other plants species, countless animals including those with endangered habitat. It will also poison the groundwater and the Bay for decades to come. It will also affect human health. Dozens of studies around the world have demonstrated the dangers of spraying RoundUp, especially in large quantities. This is environmentally justified and appropriate? Hardly. It will also increase health costs for workers and citizens alike.

3) Creates more environmental hazards than it corrects. The proposal does not adequately analyze more reasonable alternatives for fire mitigation. Once clearcut, the regrowth would be primary succession of annual grasses (which were imported by the Spaniards with their cattle), and shrubs which catch fire quickly. The soil will also be unstable, causing more landslides and deep erosion during the rainy seasons. This sediment will not only cause more expensive clean up during the rains, make roads impassable but also further contaminant the Bay. A better way would be to use a permaculture approach that works with what is there and changes it SLOWLY over an extended period of time, protecting habitat, soil, air quality and carbon sequestration. Furthermore, the Fire Mitigation Model is completely flawed because it is not based on an equilibrium state. We request that the fire modeling be reworked to compare the proposal to an equilibrium state.

4) Fiscally irresponsible. Fire mitigation is important. To that we agree. However in times of austerity, it is irresponsible to spend money on poorly constructed initiatives when that money could be spend much more effectively on much less destructive and unnecessarily invasive fire mitigation efforts and on fighting fires that do occur whether in Oakland/Berkeley or elsewhere in the West.

I look forward to a thoughtful and comprehensive response,

Thomas L. Rosenberg

**From:** [Mike Rowe \(home\)](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Tree Removal Proposal  
**Date:** Monday, June 10, 2013 11:41:30 PM

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Greetings,

I object to the mass removal of trees in the East Bay hills as proposed in the draft EIS for Hazardous Fire Risk Reduction. While the reduction of fire risk is obviously an important concern, the parks where these trees grow are more than a fire break. They provide the city dwellers who live in the surrounding community with a place where they can reconnect with nature.

I understand that the eucalyptus is particularly flammable, and is a native of Australia that crowds out local trees. But I would like to see many of the Monterrey pines spared. Proponents of this plan claim that in five years no one will remember what all the fuss was about. But it is obvious that it would be decades before slow growing oaks would replace these trees, and even then they will not be as impressive as what was cut down.

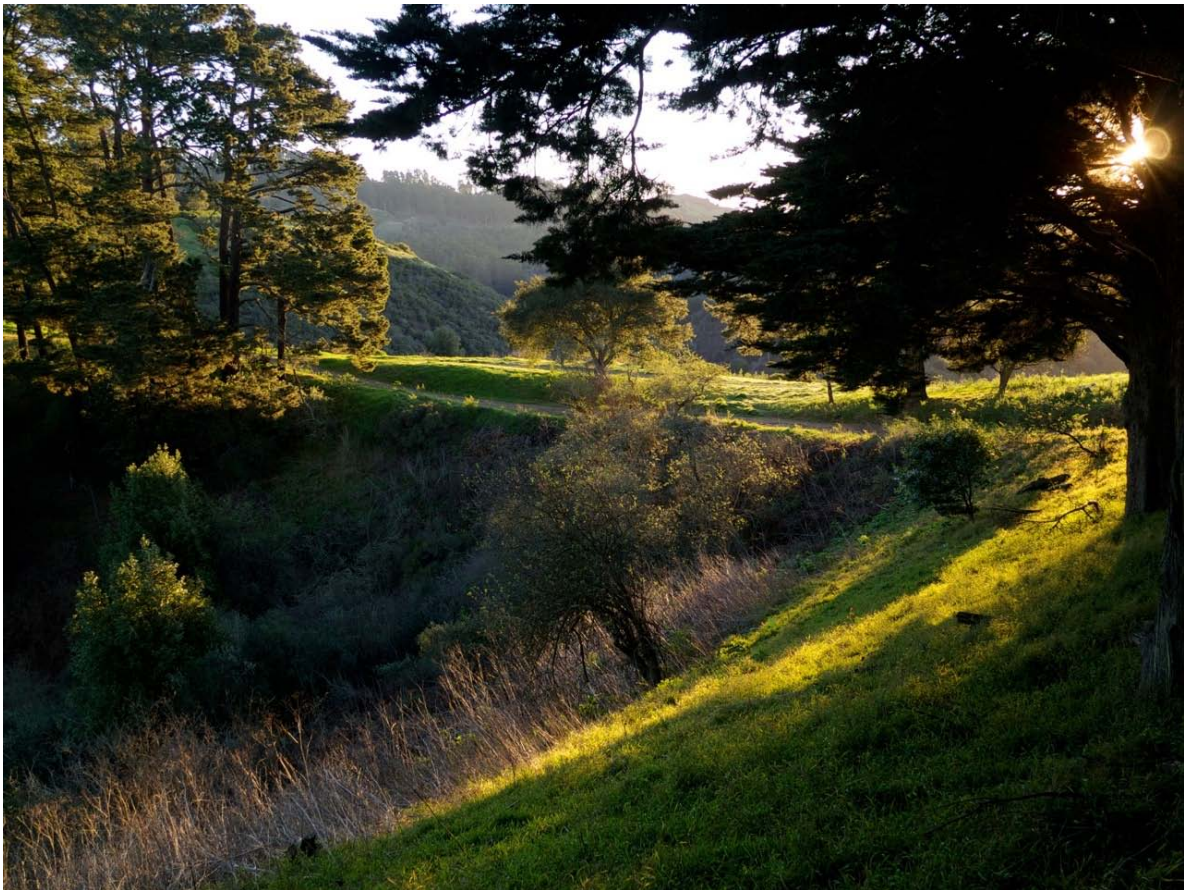
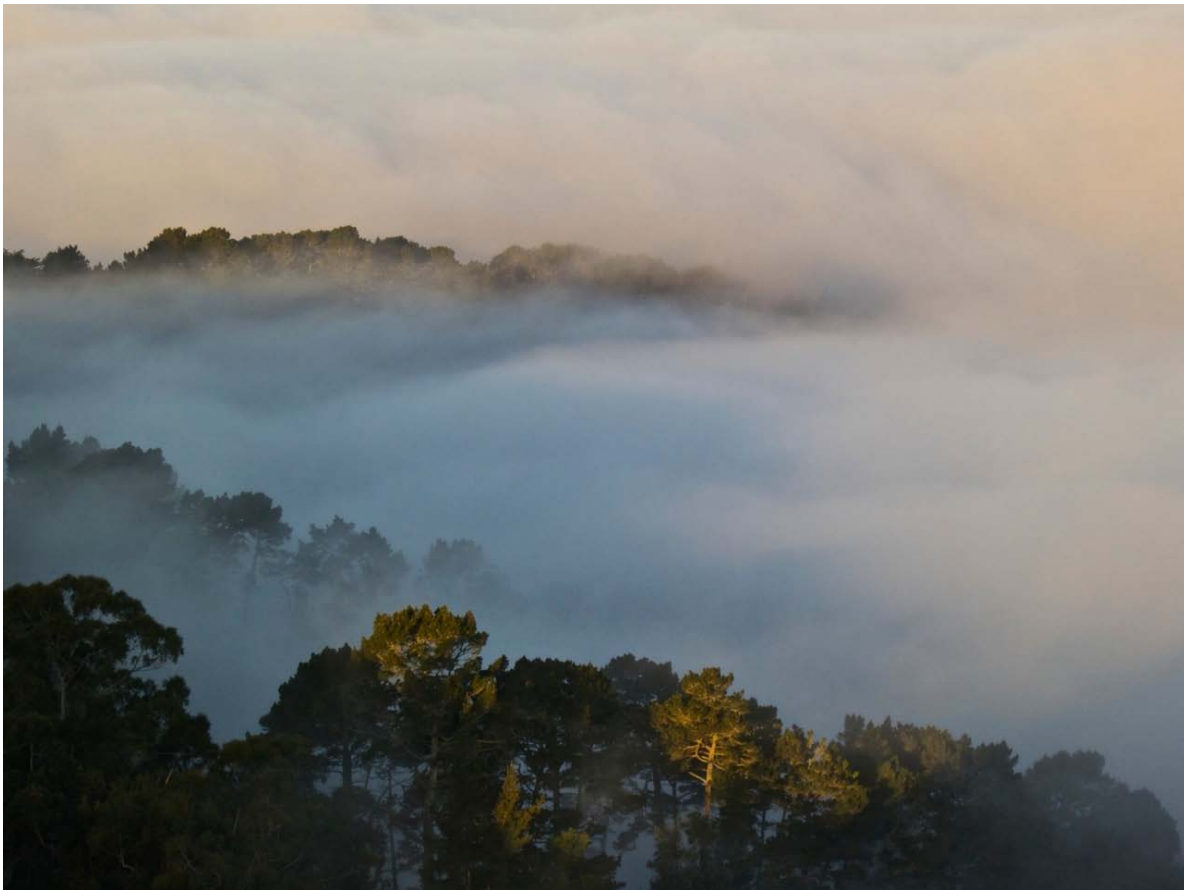
I would request that a solution that does not require clear cutting every last tree be adopted. Such a plan could still dramatically reduce fire hazard. Some things are more important than expediency.

Thank you for your consideration.

Michael W. Rowe  
Oakland









**From:** [Mariana Ruybalid](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [Marg Hall](#)  
**Subject:** Against Killing So Many Trees in such an Unhealthy Way  
**Date:** Tuesday, June 04, 2013 3:04:34 PM

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FEMA,

I am against killing so many trees in the Claremont Canyon. I am against poisonous wood chips anywhere. I use an electric wheelchair so I couldn't even go over the poisonous wood chips and I know that many homeless people sleep in the canyon and those would poison these people as well as the whole habitat for people and animals.

Monsanto is a corrupt and evil company that has profited from starving people all over the world. I oppose any project where Monsanto or any other petrochemical company will profit.

I live very close to the area where there are plans to poison the ground and cold cut ancient trees.

Mariana Ruybalid  
[www.marianaruybalid.com](http://www.marianaruybalid.com)



**From:** [Ryan Bettilyon](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Outrageous East Bay FEMA Proposal  
**Date:** Friday, May 17, 2013 11:54:48 AM

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I'd like to make a public comment regarding FEMA's proposal to cut down thousands of Berkeley and Oakland area trees in the name of fire protection. After reading through the details of the proposal (<http://milliontrees.me/2013/05/09/nearly-a-half-million-trees-will-be-destroyed-if-these-east-bay-projects-are-approved-revised/>) I find it ludicrous that turning living trees into woodchips will somehow prevent fire. This is absurd.

Cutting down these trees will reduce shade, increasing moisture evaporation, increasing fire risk.  
Cutting down these trees will reduce fog drip condensation which puts more moisture into the soil and surrounding areas, further increasing fire risk.  
Cutting down these trees and turning them into woodchips provides a dry mass of combustible material on site - extremely dangerous conditions and a fire hazard in and of itself.  
Using herbicide to prevent the resprouting of these trees is an abhorrent use of dangerous chemicals in natural areas near huge population centers.

As a Berkeley resident I am adamantly against this proposal. It is outrageous, unconscionable and will likely achieve the exact opposite of it's stated goals by increasing the risk of fires while robbing the community of these precious trees - a natural resource that can't be easily replaced.

Ryan Bettilyon  
1540 Heast Ave. APT 4  
Berkeley, CA 94703

**From:** [Carolyn Scarr](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** comment regarding proposal in East Bay Hills.  
**Date:** Sunday, June 16, 2013 9:05:53 PM

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Dear FEMA,

I have lived in the East Bay most of my life and am very familiar with the dangers of fire in our hills.

The proposed plan which supposedly reduces the fire risk in our hills is a very bad idea.

It doesn't make sense to leave two feet of wood chips in a significant portion of our hills. This spreading of tinder from the 80,000 trees which are proposed to be logged doesn't make any sense.

Ten years of poisoning our hills with very toxic herbicides will be very dangerous to our basic health, poisoning the water running off our hillsides into the streams where our children and pets play, where birds and other animals drink. Since the root systems of many of our creekside plants extend into the creeks, it seems highly likely that the poisoned creeks will result in the destruction of plant life in areas adjacent to them. Has any study looked at the impact on the shoreline of the Bay? We have seen the dead zones at the mouth of our rivers in the Gulf from agricultural effluents. The same seems likely to happen here.

The impact on human health of these poisons must be considered. We will become a medical hot spot for many deadly diseases, cancer, kidney damage, reproductive problems not to speak of the impact on children in the womb.

This being the case, we will also be deadly to the wildlife of our hills.

Taking down 80,000 trees all at once will increase the growth of grasses, poison oak and other inflammable low growing plants. It is crazy to imagine that native oaks will move in quickly to repopulate the hills and restore them to the status quo ante before someone with another wild idea decided to grow eucalyptus for its timber value.

I am no great fan of eucalyptus, but I know that cutting down trees and planting new ones has to be a slow process, done with focused care. I will compare the actions proposed to agribusiness and a true grooming of the forest to small scale family farming. Our own agriculture department confesses to the fact that family farms are more productive per acre and maintain the soil better than agribusiness.

We must learn to act in the scale that attends to details. A clear cut of our hills followed by a chemical attack on the stumps is not forestry, it is not care of the land, it is not attending to the effects of the actions.

The nearly \$6 million the University, the Regional Parks and Oakland are requesting from FEMA should be used to employ people to thin dense groves of trees, prune shrubs, plant and maintain new areas of native plants in carefully selected areas. This plan will benefit many people with good employment rather than pouring our money into the coffers of the big chemical companies and manufacturers of heavy machinery.



Please scrap your Draft Environmental Impact Statement are begin again starting with the premise that we need to respect the land and all of its inhabitants and recognize them as part of the circle of life. Let the circle be unbroken.

Sincerely yours,  
Carolyn S. Scarr  
1340 Ada Street  
Berkeley, CA 94702

**From:** [LJ Speakup](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Public comment on the destruction of east bay trees  
**Date:** Monday, June 17, 2013 4:59:15 PM

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I second these comments so articulately submitted by anger writer

The EIS posits a choice between only two alternatives: do nothing, or remove all the eucalyptus and Monterey pine. And so the community appears to have divided: those advocating wholesale acceptance of the FEMA proposed project, and those advocating no action. This circumstance, which flows from legal error so gross as to invite FEMA to withdraw the DEIS and proceed properly lest one of the interested advocates prosecute a worthy legal challenge, represents a regrettable disservice to the community. As I frequently advise my clients and my students, in the face of extremes your challenge is to find the third way. FEMA must develop and implement the third way of selective tree removal.

This writer accepts the reality that eucalyptus and other exotics pose a fire threat in the Claremont and Strawberry Canyon areas. This hazard must be moderated to the greatest degree balanced with other considerations. At the same time, this writer believes that stands of eucalyptus and Monterey pines within the two canyons form an important element of the historic and evolving landscape. One need only consult paintings from the California plein air school to comprehend that these trees have for a century formed a recognizable part of our region's environment and ecology. Just as the law recognizes that few absolutely natural watercourses remain in the state, such that we treat the changed water resource as "natural" for regulatory purposes, so should these trees be understood as earning recognition as part of the landscape that we view and in which we recreate.

Totalitarian elimination of this heritage landscape should be no more pursued than would we pursue elimination of other exotics, for example the striped bass from the Delta, or the post-McClaren vegetation in Golden Gate Park. And yet, action must be taken to improve both the fire security and visual access in these two canyons. Not all environmental conflicts lend themselves to beneficial resolution of competing values, but this one does. On rewrite the authors of the EIS will have the opportunity to honor the philosophy of Immanuel Kant and Isaiah Berlin, that all values are relative.

A thinning of the exotics to preserve the most prominent trees, while removing concentrations that pose environmental risk and actually detract from the views of both hikers and observers, should be developed as a third alternative. For example, the prominent row of Monterey pines atop the north ridge of Claremont Canyon provide a visual landmark to users of the canyon and to those from afar; these should be maintained. Similarly, the landmark eucalyptus inside the elbow of the second switchback on the Claremont Canyon trail -- that is, the switchback that overlooks the Golden Bear soccer field -- would be unthinkable to destroy. Selective thinning will leave these untouched, while promoting the health of the remaining forest and improving visual access from points along the trails. Shade and habitat will be preserved. This worthy example is the one followed by UC Berkeley a few years ago in Strawberry Canyon, and which now forms the preferred method of fuel reduction within the Tahoe National Forest.

The EIS is fatally flawed by deliberately avoiding the development of this alternative, instead including a partial clearance as a variant and part of the proposed project.

This fallacy enables the decision-makers to avoid independent consideration of a partial-clearance alternative on its own, and more regrettably, from conducting the legally-required comparison of that alternative to both project and no action. The present EIS enables the decision-maker to avoid the legal necessity of identifying the alternative, other than no action, that is environmentally favorable; that strikes at the heart of NEPA.

Finally, the EIS fails to stand as a joint EIS/EIR, and thus cannot serve the state-law actors (UC Berkeley and EBRPD) whose approvals to carry out the project also require environmental documentation. This error is also more than academic, in that not only must those local agencies make use of an EIR, but they must formulate and adopt enforceable mitigation measures more potent than those required by NEPA; and prior to that, consider alternatives that are capable of attaining most, if not all, of the project objectives, which a thoughtfully-designed thinning project can accomplish.

Sent from Joel Schipper's iPad  
415-215-9644  
Joel Schipper  
146 Swiss Ave  
San Francisco CA 94131

**From:** [Susan Schmerling](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Plans for clear-cutting of trees in Berkeley and Oakland  
**Date:** Friday, May 17, 2013 7:13:09 PM

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I was most distressed to read just this evening about FEMA's plans to fund the clear-cutting of 85,000 trees in Berkeley and Oakland, with so little time allowed for public input on these plans. The trees in Strawberry and Claremont Canyons do not constitute a "hazard." On the other hand, the planned use of highly toxic herbicide to prevent the growth of non-native vegetation once these trees have been cleared is a very real hazard. I hope you will reconsider this short-sighted plan.

Regards,  
Susan Schmerling, Ph.D.

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Susan Schmerling  
[sschmerling@sbcglobal.net](mailto:sschmerling@sbcglobal.net)  
512.517.1910

**From:** [Peter Schorer](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [inquiries@hillsconservationnetwork.org](mailto:inquiries@hillsconservationnetwork.org)  
**Subject:** An alternative to cutting trees in Berkeley Hills  
**Date:** Wednesday, May 29, 2013 12:22:16 PM

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Instead of cutting all those beautiful trees, you should at least make the experiment of hiring college students and others to patrol the most fire-prone areas, seven days a week. during fire season. Each patrol-person would have a cell phone and a number to call if he or she spotted a fire or a possible fire. You could offer a bonus for each day no serious fire occurred in the patrol-person's area. You should in particular ask residents of these fire-prone areas to set aside a few hours a week for these patrols. You should also try this in Southern California as well.

I am one of an ever-growing number of residents of the East Bay who are outraged at your plan to cut all those trees. At the very least you owe it to the public to try the above patrol idea FIRST.

-- Peter Schorer  
2538 Milvia St.  
Berkeley, CA 94704  
510-548-3827

**From:** [Peter Schorer](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Do not cut down East Bay trees!  
**Date:** Friday, May 17, 2013 10:49:56 AM

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Sometimes it is hard to believe the level of stupidity that government agencies are capable of. Your plan to cut down thousands of trees in the San Francisco East Bay is an example.

Let's get to the heart of the matter: you want the public to believe that FEMA is "doing something" about the unending problem of fires in California, mainly Southern California. What you SHOULD be doing, but which is much less of an attention getter, is put into effect, in Southern California especially, measures to reduce the number and severity of fires, beginning with some of the regulations that were implemented after the Oakland/Berkeley Hills fire in the early 90s, e.g., establishing ordinances, and enforcing them, that

all brush within a specified distance from each house is to be cleared;  
strongly discouraging or making illegal, shake roofs;  
improving access roads.

In addition, you could:

institute round-the-clock patrols of particularly fire-prone areas. College students could be hired to do this, and given bonuses on the days that no severe fire breaks out in their area;  
Significantly increase aircraft patrols.

Why the fuck are you planning this outrageous tree-cutting in the East Bay when we have nothing like the fire risk that exists in Southern California? Why do you insist on being like the village idiot, who lost his watch on First St. but is looking for it on Second St. because there is more light (in this case, more public attention). The measures I described above will probably not make it into the newspapers, and so will not give the public reason to believe that FEMA is "doing something". But cutting down thousands of trees! Well, FEMA cares...

We are going to do everything in our power to stop you bastards. Your plan is an embarrassment. Shame on you.

-- Peter Schorer



# FEMA

### DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME:

*Samana Fox*

CONTACT INFO (optional): \_\_\_\_\_

COMMENTS:

Tuesday, May 14, 2013

Richard C. Trudeau Training Center

Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

Signature and Date:

*[Signature]*

*5/18/13*

**Peter Gray Scott**  
architect

1047 Alvarado Road  
Berkeley, California 94705  
Phone or Fax 510-843-3082



**FAX to FEMA (510 627 7147)**

**17 pages including cover**

**10 June 2013**

**Re: Comments concerning the EIS, Hazardous Fire Risk Reduction,  
East Bay Hills**



**Peter Gray Scott**  
architect

1047 Alvarado Road  
Berkeley, California 94705  
Phone or Fax 510-843-3082

**FEMA**

**9 June 2013**

P.O.Box 72397

Oakland, Ca 94612-8579

Re: EIS, Hazardous Fire Risk Reduction

East Bay Hills

I am writing in support of the EIS with modifications.

The EIS as written has major flaws, however – as a survivor of both the 1970 and 1991 fires in the hills – I am strongly in favor of reducing the risk of fire and ignition. The problem with the EIS as it stands is that it will *increase*, rather than reduce risk; this is particularly true of UC's proposal, and potentially true of Oakland's proposal, depending on clarification. Certainly UC's protocol must be modified, or deleted.

I am a charter member of the Claremont Canyon Conservancy (CCC), and although it claims to speak for the whole of its membership, it certainly does not speak for me and many others.

I have studied the Issues extensively, talked with fire experts, and at the end of this comment, I will propose a detailed **ALTERNATIVE**. My alternative is not very different from EBRPD's proposed treatments, and if UC and Oakland are simply required to conform to EBRPD's specifications, that would be a worthy outcome.

Following the 1991 "Tunnel Fire," my wife and I instigated the **Grand Jury Investigation** of that fire. Following Tom Klatt's (UC) initial project in Claremont Canyon, across the canyon from our rebuilt home, we were sufficiently outraged that we joined in forming the Hills Conservation Network (HCN). I participated in negotiations with Asst Fire Chief John Swanson concerning modifications to EBRPD's ten-year wildfire hazard mitigation plan, and I've conferred with the Hills Emergency Forum.

As written in the EIS, Oakland's proposed treatment appears to be the same as UC's, but when I challenged Asst Chief Leroy Griffin on this point, he said to me "No, we're not doing that. We would not be crazy enough to do what Tom Klatt is doing." But until I see that assurance in writing, my comments about UC's plan will have to apply to Oakland's as well.

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**Comment #1:** As residents of the East Bay hills, and fire survivors, we support efforts to reduce the risk of ignition and fire in the wildland-urban interface (WUI). Based on factual evidence, expert advice and extensive research, we believe that much of the currently proposed vegetation management projects in the EIS will not only *fail to reduce the risk, but will actually increase fire hazard in the hills.*

**Comment #2:** The EIS proposes to eliminate all alternative methodologies except “the proposed action” and “no action,” essentially saying “take it or leave it.” This is bizarre, since the basic purpose of an EIS is to explore and compare reasonable, viable alternatives – *and reasonable, viable options DO exist*. However, FEMA has explicitly stated that it can require modification [of the proposed actions] as a condition of funding, and “modification” – by means of an *added alternative* – is what we suggest.

*This is an EIS that cries out for an alternative to the proposed action, because, in addition to failing to reduce risk, the protocols proposed by UC and the City of Oakland are so prosaic and simplistic that they would inevitably involve brutal, unmitigated – and unnecessary -- damage to the environment. In addition, it does not make sense to propose two entirely different methodologies – EBRPD’s and UC/Oakland’s – to treat what is basically the same risk in similar environments.*

**Comment #3:** The EIS, as written, presents a number of fundamental problems:

- a. FEMA’s Mitigation Policy MRR-2-08-1 lists “**Ineligible Wildfire Activities.**” The list includes “projects to address ecological issues,” “projects for prescribed burning or clear-cutting,” and “projects for maintenance activities.” Such ineligible actions are proposed by the EIS.
- b. The stated intent of the actions proposed is to alter the vegetation so that its flame length characteristic is reduced to less than 8 feet. The proposed “treated” plant environment absolutely fails to achieve this goal, short term or long term. See pages 5 – 6.
- c. Standards for adequacy of an EIS state: *disagreement among experts does not make an EIS inadequate, but the EIS should summarize the main points of disagreement among experts and make a good faith effort at full disclosure.* This EIS fails to meet this standard, most notably in its discussion of eucalyptus and “non-native” species. See pages 10 – 11.
- d. The EIS cites numerous studies and informed recommendations as support for its proposed methodology, but then proposes actions that are *clearly not what those studies and recommendations said*. For example, the EIS claims support of the Hills Emergency Forum (HEF) but proposes treatments that are contrary to its recommendations; the EIS bibliography lists the Vesta Project as a reference, but incorporates *none* of its important fire behavior information. See pages 8 – 9.
- e. Much of the proposed methodology is similar to vegetation management projects already completed in the East Bay hills, but the EIS ignores or misstates **negative outcomes** of those projects. We can readily see for ourselves that those “treated” environments have destroyed habitat, and created dried-out, eroded, weedy blighted areas; they are not more fire safe, and still have undecomposed chips on the ground after more than five years.

**Comment #4:** The EIS fails to respond to comments submitted following the UC’s EA, fails to respond to comments in the November, 2010 Scoping Report, and fails to comply with specific and detailed

directions provided by FEMA to UC and the City of Oakland in April and November, 2008, and February 2009.

The primary reason FEMA required the EIS was that *UC was refusing to respond to fundamental questions concerning the viability of the actions proposed in its EA, such as: Will the treated environment be more fire safe than the environment it replaces? How will the replacement vegetation be created and maintained?* FEMA needed to be assured that UC's project would, in fact, reduce fire risk, and not be just a "native plant restoration," which FEMA is not allowed to fund. UC has been obdurate and unresponsive: its methodology in the current EIS is essentially unchanged from its original proposal, conceived nearly ten years ago.

**Comment #5:** In general terms, we endorse EBRPD's proposed actions because:

- the development process for its plan was more thorough and sophisticated (alternatives were considered)
- the plan was improved during its development, in response to comments and input
- the environmental impacts will be smaller
- the actions more closely follow the recommendations of fire experts – so the project has a chance of actually reducing the risk of fire. See pages 3 - 4.

\*\*\*\*\*

#### Reducing potential vegetation fuel

The fundamental premise of the proposed vegetation management is that **reducing the quantity of fuel** (fuel load) in the wildland will reduce the risk of fire, and reduce the severity of the fire. The question is, **what type of fuel should be the target of the reduction?** This is what the experts say:

(Hills Emergency Forum) *"Grassland flames can reach lengths ranging from 12' to 38' that could overwhelm suppression forces. The more critical concern for this vegetation type is the rate at which grassland fires can spread and the ease of ignition. This is one of the most dangerous types of fires . . .*

(Hills Emergency Forum) *"All brush communities have fire behavior and flame lengths of 14'. North mixed chaparral and dry North coast scrub can reach flames in excess of 69'.*

(Hills Emergency Forum) *"None of the pine forest plantations currently represent a hazard as far as flame lengths and crowning are concerned. Monterey Pine forests in the study area are not essential for any known species of special concern (sic) that would suggest special management requirements. Aesthetically however, these forests are dominant in the landscape, with strong community support . . . It is important to maintain canopy closure where possible to reduce invasive species after treatment. It is anticipated that treatment may occur on a 3 to 5 year basis.*

(Hills Emergency Forum) *"The forests with closed canopies and relatively little surface fuels represent very low hazards. Ignition potential is moderate . . .*

(Hills Emergency Forum) *"[Eucalyptus] ignition potential . . . is directly related to the depth of litter and amount of dead materials on the ground. It is anticipated that eucalyptus forest will need [ground fuel] treatment every 2 to 3 years."*

(Carole Rice) *"Surface fuels are key to understanding fire hazard potential. (reference: MacKenzie (Stine), 2005)*

(Carole Rice) *"Discussion of crown fuels, along with removal of dominant and co-dominant trees rather than surface fuels is a faulty direction and target.*

(Carole Rice) *"There is little justification in terms of fire hazard reduction for targeting larger trees.*

(Carole Rice) *"The desired crown bulk density could be achieved by taking more trees of smaller diameter."*

(Carole Rice) *"The focus of treatment should be on surface fuels rather than crown fuels. (reference: Agee & Skinner, 2005)*

(Carole Rice) *"The linkage between large trees (over 12" DBH) and fire hazard is not based on science.*

(Carole Rice) *"Several arguments counter that specified fuel objectives can be reached through treating surface fuels, then ladder fuels.*

(Carole Rice) *"Where thinning is followed by sufficient treatment of surface fuels, the overall reduction in expected fire behavior and fire severity usually outweighs the changes in fire weather factors such as wind and fuel moisture. (reference: Weatherspoon, 1996)*

(Carole Rice) *"Reducing crown bulk density in these stands with crown thinning alone did not substantially change potential fire behavior or effects. (reference: Graham et al, 2004)*

(Carole Rice) *"Intense surface fires are necessary to maintain a crown fire.*

(Project Vesta) *"There is very little published data to demonstrate a direct relationship between rate of spread and fuel load. . . .their relationships were obtained from fires of very low intensity and there is little evidence to suggest that this relationship holds true for fires of high intensity.*

(Project Vesta) *"Surface fuel layer — leaf, twig and bark of the overstory and understory plants . . . this layer usually makes up the bulk of the fuel consumed and provides the most energy released by the fire.*

(Project Vesta) *"This result supports the proposition that the near surface fuel contributes strongly to the length of flames and . . . is the layer having the most influence on fire spread. The*

*relationship between surface fuel load and rate of spread has been accepted in previous fire behavior guides. (reference: MacArthur 1962, 1967; Peet 1965; Sneeuwjagt & Peet 1985, 1988)*

*(Project Vesta) "A smooth-barked eucalypt has a Fuel Hazard Score of zero."*

*(FEMA / DES) "Resist the urge to clear or do anything radical. Maintain canopy closure to reduce weed invasion."*

*(Sandy Kerr) "Wildfire danger of eucalyptus sprouts is overrated -- they are green."*

*(Sandy Kerr) "Conversion to grassland is a mistake; it dries out in the high fire season, so becomes a higher fuel load."*

*(Sandy Kerr) "Heavier fuel cannot be ignited unless fine fuels are present; therefore fuel reduction is typically managed with lighter fuels."*

*(Sandy Kerr) "At equal windspeed, grass fires spread ten times faster than forest fires."*

Summary: The consensus among these experts is strong: the most effective fuel reduction to reduce fire ignition, fire intensity and fire spread, and to avoid crown fires, is to reduce **flashy grass fuel, ground fuel and ladder fuel**, especially fine and dry fuel. If simply reducing the "fuel load" is the goal, taking out the large trees might superficially appear to be the most direct solution . . . but that won't reduce risk, and it ignores the facts that large trees are difficult to ignite, and even when they "burn," **less than half of the tree-fuel** is actually consumed.

Clearly, UC's and Oakland's proposed action to cut up and scatter tree limbs on the site is insane: it increases the likelihood and probable severity of a fire, since it adds to the ground fuel and dry fine fuel. Similarly, trees with **low-hanging limbs** -- bays, acacia and madrone, for example -- provide a built-in fire ladder.

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#### Flame length

The flame lengths for various vegetation types are listed in the 1995 Vegetation Management Consortium (VMC) report, and repeated in the EIS. The estimated lengths are generalized and approximate because each vegetation type is a mix of species, and much depends on specific environmental conditions. However, the EIS states that it assumes a *wildfire condition, with a 22mph wind, and ignition during the hot, dry autumn fire season*, so we can expect the flame lengths would approach the high end of the range.

Grasslands: short grass flame length 2' – 10'; tall grass 12' – 38'; ignition potential: "most extreme hazard rating"

North coastal scrub: wet flame length 14' – 32'; dry flame length 14' – 69'; ignition potential: high hazard

Successional scrub (includes oaks and bays): flame length 14' – 32'; ignition potential: high hazard

Exotic shrubs (broom, acacia): flame length 15' – 18'; ignition potential: moderate

Mature eucalyptus forest (7' spacing): flame length 6' – 21'; ignition potential of litter: highest hazard; ignition potential of tree and leaves: not listed

Second growth eucalyptus (1-5 year old) forest: flame length 7' – 31'; ignition potential of litter: highest hazard; ignition potential of trees and leaves: not listed

Monterey pine forest: flame length 2' – 16'; ignition potential: highest hazard

Mixed Hardwood forest (70% canopy): flame length 1' – 34'; ignition potential: moderate

Redwood forest (75' – 150' tall): flame length 2' – 7'; ignition potential: low (excludes litter)

Riparian forest (bordering creeks): flame length 2' – 5'; ignition potential: low

The EIS is vague concerning the character of the plant environment following the proposed treatments, and it is also vague about what the schedule of maintenance would be. In forests, EBRPD plans to remove selected tall trees, and the treatments mention the development of the existing understory of oaks and bays; on open hillsides, EBRPD proposes grasslands with "islands" of brush, or "oak – bay savannahs." UC and Oakland propose clear-cutting tall trees, leaving who-knows-what for the future environment. *UC has no funding or plan for continuing maintenance.*

From this description, we would expect the post-treatment East Bay hills to be a combination of grassland, North Coast scrub, successional scrub, mixed hardwood forest and, in some EBRPD areas, widely spaced eucs. ***On a red flag day, the flame lengths in that environment will not meet the stated criteria of 8' maximum.***

VMC's recommendations for maintenance vary from yearly for grasslands, 2 – 3 year cycle for forests, and 5 – 7 year cycle for shrubs. EBRPD has plans and funds for maintenance, but do UC and Oakland?

The US Forest Service provides a chart rating the fire risk for a list of various wildland environments, comparing the risk *before* and *after* treatment. This chart is highly misleading because the "after treatment" rating is based on the conditions *the day after treatment*. **This is a fundamental error, and this is how the EIS can claim that the post-treatment flame length is less than 8'.** The "after treatment" rating *should* be based on the conditions *several years* after the treatment, when the surviving plants and trees have had a chance to develop. For instance, if there is a maintenance cycle for the regrown forest, the risk rating should be judged *the day before maintenance is due*.

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The EIS includes a "Chart ES-3, Summary of Potential Effects," that is intended to compare the environmental impacts of the proposed actions with the "no action" alternative. The "no action" comparisons repeatedly refer to the impact *if a wildfire occurred*. This is not a legitimate comparison. From AEP's 2009 EIR Guidelines: "The "no project" shall discuss the *existing* conditions at the time the notice of preparation is published . . ." and not be based on a speculative condition (fire). **If the assumption of a fire is in one alternative, it must be in both alternatives.** Given the flame length discussion above, a wildfire in the post-treatment environment would be just as disastrous, and have similar environmental impacts, as a wildfire in the "no action" environment.

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#### Significant omissions

We note that the EIS fails to mention key environmental issues:

- Fog drip and humidity in the understory: these ignition-inhibiting factors depend on preservation of the canopy, which would argue for maintaining tall trees.
- Fuel, especially fine fuel, drying out in the high fire autumn season, increasing fire risk. This too argues for maintaining the evergreen shade of tall trees.
- Wind breaks: Diablo winds raking the East Bay ridges are certainly a factor in wildfires. We need windbreaks, yet the proposed actions include removing the tall trees from the ridgelines, based on theoretical and unsupported fears of ember casting (see p. 8 - 9).
- Sudden Oak Death (SOD): Conversion of the hills to an environment dominated by oaks and bays appears to be playing Russian roulette. With the disruption of vegetation management activities that encourages the spread, the disease-transmitting bays would have a perfect shot at the remaining oaks, and no one knows how to stop the spread. We've witnessed the SOD effect in the hills south of Carmel Valley, and it is not pretty. Grass, brush, bays and dead oaks is an ideal recipe for a disastrous conflagration.
- The logging and removal work proposed for Claremont Canyon includes three new 12' wide access roads, with switch-backs and turn-arounds, on the steep slopes of the canyon. The necessary earthwork, cuts and new retaining structures, would be major, yet the EIS provides no drawing, no performance specification, no discussion of erosion or aesthetic impact.

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### Fire behavior

In terms of the discussion of predicting fire behavior, we believe the EIS proposal to use FlamMap and BEHAVIOR is deficient, because they do not represent the latest and most appropriate prediction tools. They are based on **artificial tests and artificial (and incomplete) parameters**. The Project Vesta study would be a better source: Vesta appears in the EIS bibliography yet the EIS makes no reference to its findings. The reasons we favor Project Vesta are:

- It is a more recent study.
- It was performed in the field, with real fires (104 fires were set and observed in detail by experts) with real measurements and observations, rather than contrived experiments in a laboratory, with theoretical calculations.
- The test fires were conducted in eucalyptus groves.

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### Spotting potential

The EIS provides this justification for cutting tall trees: because of their height, they loft embers ahead of the fire front, spreading the fire. While there is no doubt spotting occurs during a WUI wildfire, identifying the tall trees as the source is not supported in the EIS by any evidence or scientific study. Typically, **firebrands are not released from the tops of trees:**

*(Project Vesta) "Firebrands are flaming or glowing pieces of fuel, including fruit, cones, twigs or bark, that are transported ahead of the fire-front . . . the burning firebrand is entrained into and lofted by the convection column and then released at some height downwind . . . Most firebrands burn out within the convection column. A firebrand lofted within the convection column may be carried to a considerable height before falling out and descending to earth. If the burnout time of the firebrand is longer than its flight time, it will land alight and may start a spotfire. If its flight time is longer than its burnout time, it will not be alight when it lands and will not start a spotfire.*

*(Project Vesta) "Most flakes of Jarrah (eucalyptus) bark appeared to be only 1 or 2 mm thick and, because they would burn out quickly, would probably be effective firebrands to a few tens of meters.*

*(Project Vesta) "All spot fires that did occur . . . were overrun by the main fire while they were small and did not have any effect in increasing the rate of spread of the main fire.*

*(Project Vesta) "Lofting of firebrands is dependent on flame height, along with convection currents and velocity."*

In my own experiments with eucalyptus bark and leaves, this is what I discovered:



1. In response to claims that euc leaves are prone to flying significant distances because of their arrow-like shape, I tested leaves of various species in strong (fan-driven) winds, starting from both flat and suspended positions. The results: leaves that are lightweight and have a lot of surface area – like tanoak or maple leaves -- fly furthest; needles hardly fly at all; the slightly boomerang-shaped euc leaves spiral and flutter around, and are just as likely to fly backwards.
2. Burnout time of a full-size green euc leaf is no more than 30 seconds (it tries to self extinguish) and shorter for a dry leaf (because it ignites more quickly) but in either case the residue is the frailest ash, not capable of staying intact, much less flying anywhere.
3. Burnout time for a 4" x 30" strip of bark was 54 seconds; the residue falls apart, but theoretically could have been capable of sustaining an ember for that period. Strips of bark are litter, usually on the ground or in the crotch of the tree, but not near the crown. If the bark lofted in the convection column for 20 seconds, then flew in a straight line in a 22 mph wind at 35% efficiency, its range as a firebrand would be about 210'. This data appears to confirm Project Vesta's findings ("a few tens of meters"), considering that a straight-line flight path is unlikely. This also disputes the claim in the EIS (5.2) that spotting from trees in 1991 reached 2000'.

The point is: these real, physical tests do not support claims that "tall trees" create spotting at great distances. Since, in the case of the 1991 Tunnel fire, the conflagration was primarily a structure fire, burning houses within the first ten minutes, *the long-distance spotting that occurred was actually caused by bits of structures, not trees.* In that WUI fire, the fire started in brush and quickly spread to houses; then the homes set fire to the trees, not the other way 'round.

A pilot of a fire-fighting aircraft reported seeing a flaming sheet of plywood 2000 feet in the air.

It should be noted that in the 1991 fire, the *only instance of crown fire in eucalyptus* was in the groves at the foot of Hiller Highlands, where the firestorm rolling down the hill was a full blown structure fire, consuming twenty times the fuel of a wildland fire, burning at a rate of a residence every 11 seconds. Elsewhere, tall trees resisted crowning while the understory burned past, leaving the tall eucalypts intact where everything else was consumed.

It is significant that in FEMA's 98 page report on the 1991 Tunnel fire, which includes a minute-by-minute recap of the fire's progress, *there is not a single mention of eucalyptus.*

In the Mayors' Task Force Report composed immediately after the 1991 Tunnel fire, the "Policy Recommendations" stated: *"Do not target specific species, such as Blue Gum Eucalyptus or Monterey Pine for eradication or exemption from tree regulation policies. Existing stands of pine and eucalyptus must be regularly maintained, and debris processed to substantially reduce susceptibility to fire."*

Two years later, in the VMC "Fire Hazard Mitigation Program and Fuel Management Plan for the East Bay Hills" (called "the most capable analysis of the fire problem"), the treatment for the Mature

Eucalyptus Forest recommended: *"Maintain canopy closure to prevent understory development; Management of fuel load: Do not convert. Manage as mature Eucalyptus grove to maintain fuel load and eliminate vertical continuity; Remove all trees under 12" DBH . . ."* These recommendations are to some degree incorporated into EBRPD's proposed methodology, but are completely ignored in UC's and Oakland's protocol.

EBRPD's proposed actions also employ "selective" logging rather than clear-cutting or eradication. EBRPD will: cut the low-hanging limbs, reduce small (ladder) fuels, limit the chips on site to 4"-6" and remove the logging debris from the site, and protect streams; UC and Oakland should incorporate these actions into their plans.

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#### Eucalyptus forest

**The lesson of the Angel Island fire:** Prior to 1996, in recorded history, Angel Island had never had a wildfire. The 740 acre island had a healthy 86-acre eucalyptus forest with trees up to a century old. In '96, all but 6 acres of the eucs were removed. **Did the clear cut make the island more fire safe?** Fires broke out in '04 and '05, and then, in October '08, a massive 304-acre wildfire swept over the slopes where the euc forest had been. *What refused to burn? The six acres of remaining eucs!*

Historically, the old evergreen forest had protected the island by intercepting the bay fog, providing a cool and moist understory; the brush and grass that replaced the trees was far more susceptible to ignition and wildfire. The Angel Island conflagration should be a lesson and an **embarrassment to advocates of deforestation** in the name of fire prevention.

Similarly, the 1991 Tunnel fire and the later Broadway Terrace fire should have informed the community about the **fire-resistance** of eucalypts. Because the bark and evergreen leaves are difficult to ignite, because there are few low-hanging limbs, the fire typically swept past the trees in the understory, leaving the lower trunks only superficially charred. Tall eucs survived where everything else – oaks, bays, houses, cars – burned. Eucs were nowhere near the ignition of the '91 fire, yet the Press and some poorly informed people erroneously clung to the myth that eucs were to blame.

*"As we have already seen, many trees are highly fireproof, like redwoods and eucalypts . . ."*  
(The Tree, A Natural History of What Trees Are; Colin Tudge, 2006)

One of the persistent myths is that eucs "explode," implying that they shatter and send flaming bits in all directions. The fact, described in Colin Tudge's book: when eucs are heated, they **outgas** a fine oil vapor, and at a certain temperature that vapor **flares** . . . but the tree doesn't come apart or even necessarily ignite. It is far less dangerous than the torching of a bay or pine, for that does consume the tree and send embers flying.

We discuss the myths because the EIS frequently refers to eucalypts as “fire-prone,” “fire-promoting” or “flammable.” No scientific evidence or credible study is presented in the EIS to support this assertion. A careful reading of published comparative fire ratings – the US Forest Service’s, for instance – reveals that the euc’s fire rating concerns the **litter on the ground, not the tree itself**. Yet the litter under oaks and bays is not included in oak / bay fire ratings or discussed in the EIS. It should be . . .

*From “Managing Fire in Oak Savannahs” (Savannah Oak Foundation): “Oak leaves and litter burn much more readily than litter and leaves of other hardwoods . . . tend to be drier than other hardwood species, making them more flammable. Oak leaves curl more than other hardwoods’. This puts the fire up off the ground making it capable of spreading more effectively. Thus oak leaves are more flammable and more capable of ‘carrying’ a fire. Oak leaves are thicker . . . giving them greater resistance to decomposition and longer life spans in the leaf litter. Oak leaves contain tannin which makes them more resistant to decay . . . thus the amount of burnable material on the oak forest floor is greater than that of other tree species.”*

Bay laurel leaves contain twice as much oil as euc leaves. That’s why we cook with them.

*“Despite the presence of volatile oils that can produce a hot fire, leaves of blue gum eucalyptus are classed as intermediate in fire resistance when green, and juvenile leaves are highly resistant to flaming.” (“Eucalyptus” - National Park Service)*

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#### Native plants and fire

All of the proposed methodologies described in the EIS include removal of “non-native” species and “conversion” of the plant environment to “native.” **Consideration of “native” or “non-native” should have no place** in a project intended to reduce the risk of fire, for several reasons:

1. “Native” is not a scientific descriptor. It is subjective and arbitrary; it is a **political term** employed to define approved or “good” plants v. non-approved or “bad” plants.
2. “Native” (or not) has **nothing to do with reducing the risk of ignition and fire**. “Good” species like bays, poison oak, madrone, buckwheat and baccharis are just as flammable as “bad” species like eucalyptus or acacia. From a fire’s standpoint, fuel is fuel. *“There is no consensus on the flammability of many plants, even the species recommended as fire resistant.”* (VMC, Fire Hazard Mitigation Program, 1995)
3. Consideration of “native” species **has no business in an EIS based on fire mitigation** potentially funded by FEMA, because FEMA, by its own policy, *is not permitted* to fund conversion or restoration of the plant environment. If the “native”-related work were purged from the EIS, which it should be, there wouldn’t be much left of UC’s and Oakland’s proposals.

4. If the proposed plant environments (“Native forest of bay, oak, maple, buckeye, hazelnut;” “brush and grassland;” “annual grassland and north coastal scrub;” “coyote brush and sage;” “successional grassland”) would, in fact, be less prone to ignition and fire, the “conversion” might be defensible . . . but that is clearly not the case. Every one of those environments is the type that **promotes surface fuel and near-surface fuel**, the very conditions that the experts say promotes fire spread and fire intensity. As one expert said: *“This is just trading one fire environment for another.”*

The converted environment would produce fires that ignite quicker, burn hotter, travel and change direction faster, and occur far more frequently. The statement in the EIS that “the oak-bay savannah is at the low end” of the fire rating scale is unsupported and untrue. Historians note that when the East Bay hills were the “oak - bay savannahs” of centuries ago, **fires ripped through the hills nearly every year** – compared to 20-plus year intervals now.

The EIS also includes statements that have **no basis in fact**, such as: the native plant environment will have “less fuel,” and will be more fire resistant because it is “naturally healthier . . . .”

5. Clearly, the inclusion of the “native” plant issue is the result of consistent, long-term lobbying by the **claque of nativists** – the Native Plant Society, a local Sierra Club leader, the Audubon Society – who want to replant the hills. To some degree, the claque is encouraged by people who harbor a passionate, irrational hatred of eucalyptus. But to those of us who have gone through at least one conflagration, and have worked ever since to avoid another, their clamoring is insulting, ignorant and inappropriate.
6. The conversion proposals also claim that eucalypts are “invasive.” This assertion is unsupported by evidence, studies or expert testimony, and the EIS avoids any discussion of whether “native” trees are invasive. This is not the “good faith” full disclosure the EIS is supposed to provide.

*“If the natural history record is incomplete, there is no reliable ecological or biological method that can distinguish between aliens and natives. Furthermore, it is unclear how long a species needs to be established in a location before it is considered native. Is a species “naturalized” in 100 years, 1000 years, or 10,000 years? The distinctions are arbitrary and unscientific.”* (Jonah H. Peretti, U. California)

*“What I find particularly depressing about the “native plants only” argument is that it ends up denying the inevitability of ecological change. Its underlying assumption is that the plant and animal communities that existed in North America before the Europeans arrived can and should be preserved. The fact that this pre-Columbian environment no longer exists – and cannot be recreated – does not seem to matter . . . Implicit in the proposals that call for the control and/or eradication of invasive species is the assumption that the native species will return to dominance . . . thereby restoring the*

*"balance of nature" . . . [they] view succession as an orderly process leading to the establishment of a "climax" or steady-state community that, in the absence of disturbance, was capable of maintaining itself indefinitely. I refer to this as the Disney version of ecology . . ." (Peter Dei Tredici, Harvard, 2004)*

The EIS refers the "emergence" of the oaks and bays, etc, following removal of the tall tree canopy, yet **no plan for planting or maintenance is presented**. Does this "emergence" automatically, magically happen? Is this, as the Harvard professor says, the Disney ecology? We know that the redwoods planted and carefully watered by the Claremont Canyon Conservancy have struggled, and the survival rate is low. This issue, how the post-treatment landscape would come into being and be sustained, was one of the questions following the EA to which UC never responded.

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#### Timing of treatments

The UC proposal states that "In general, work would be conducted from August through November . . ." Considering that **every major fire in the hills since 1905** (except one in December that was caused by a downed power line) has occurred during the autumn months, *this sounds like a foolhardy idea*. It would be more prudent to complete work before September, during cool, foggy summer months and prior to the flashy fuel drying out.

Speaking of the sixteen previous fires, the EIS concerning the Strawberry and Claremont Canyon projects implied that those areas were at imminent risk because large fires had **repeatedly** burned there. This clearly untrue because the existing trees are at least 80 years old.

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#### Environmental impact / mitigation issues:

My comments above are focused on fire hazard issues, but the EIS should equally address environmental impact issues, with viable alternatives for mitigation of negative impacts. I'll let others more knowledgeable than me discuss the details, however I do have some observations. In general, the EIS underestimates impacts and, because it fails to explore viable alternatives, responds to each issue in a simplistic, take-it-or-leave-it fashion that merely confirms the only action presented.

- **Herbicides:** The proposed application actions fail to note that UC's current mode includes multiple unannounced *spray* applications, by uncertified labor, without posted warnings – to discourage weedy fuel that quickly grows after canopy is removed. This is contrary to the "best practices" promised by UC.  
Our alternative, because it cuts fewer tall trees, would reduce the amount of painted herbicide; and because it retains canopy, would reduce the need for sprayed herbicide.  
The EIS fails to mention that the proposed herbicides will reduce the fire resistance of the trees that remain.

- **Habitat:** The EIS pays much attention to endangered species, but is relatively silent concerning animal and bird life in the canopied forest. It fails to discuss secondary impacts, such as: when raptors are decimated, populations of their prey explode (rats, voles, snakes, rabbits, etc.)
- **Water quality and runoff:** The EIS does not adequately discuss herbicides' impact on ground water and creek / bay water quality, and its impact on humans / animals.
- **Air quality and pollution absorption:** Reducing the population of large trees will provide less absorption / filtering of urban air.
- **Soils, erosion:** Wholesale conversion from rooted trees to grass and brush will reduce soil stability, and will change the water table level. Leaving large cut-down trunks on the ground is not a recognized or effective erosion mitigation . . . and is truly ugly.  
The EIS failed to mention mitigation of the considerable earthwork required for a 12' wide road carved into the steep slopes of Claremont Canyon, "with switchbacks and turnarounds." This road is also a major aesthetic degradation.
- **Carbon, global warming:** This large, important and complicated subject is inadequately addressed, and completely distorted by the erroneous assumption of the effects of a supposed wildfire in the "no action" option.
- **Aesthetic:** The comparative photo views before and after cutting are completely inconclusive. The EIS emphasizes the views outward from the hills, but underestimates the short- and long-term aesthetic damage when looking toward the hills. The EIS fails to discuss the aesthetic degradation imposed on hikers and runners who use trail system through the forests.

Community support: The Claremont Canyon Conservancy has erroneously claimed widespread community support for the proposed deforestation, but the recent public hearings conducted by FEMA demonstrated there is considerable support for alternative treatments, or no treatment. The EIS should completely ignore the "support" of nativists – Native Plant Society, Sierra Club, Audubon Society – because theirs is a different agenda that does not relate to – and actually sabotages – fire risk mitigation.

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### **The Alternate Treatment (proposed)**

To reduce the risk of ignition and wildfire in the East Bay hills, all forested areas should be treated similarly, whether they are on EBRPD's property, or UC's or Oakland's. Plant and tree removal shall be species neutral.

The overall intent of the treatment is to reduce the fuel load, focusing on ground fuels, dead and dry fuels, and fine (less than 3") fuels -- the fuels most likely to ignite, most likely to spread the fire, most likely to cause long flame lengths, and most likely to cause crowning. Reduction of the tree fuel load shall be limited by the Guidelines listed below.

To discourage understory weed growth, and preserve humidity and cooler temperatures at near-ground levels, the existing tree canopy shall be mostly preserved.

To discourage erosion and preserve ground moisture, a 2" layer of duff will remain in place; otherwise all litter, dead vegetation and cuttings and downed trunks shall be removed from the site.

Ladder vegetation shall be removed: tree limbs up to 8' or 1/3 of height above the ground; remove closely spaced brush, shrubs and small trees; remove, dead wood on and in the trees that remain.

Trees that are too closely spaced (see guidelines) shall be removed. Dead trees shall be removed, except for a few selected snags that provide habitat for raptors, etc.

Guidelines for the post-treatment forest:

- Preserve a minimum of 70% of eucs over 24" DBH, 60% of pines and other species over 24" DBH
- Preserve a minimum of 50% of all trees between 12" and 24" DBH
- Preserve a minimum of 25% of all trees between 6" and 12" DBH
- Any tree less than 6" DBH may be cut, as necessary to avoid a fire ladder and provide for spacing
- Spacing: for trees over 12" DBH: 20' for eucs, 30' for pines and other species
- Fuelbreaks: all fuel removed except mowed or grazed 4" grass; width depends on topography

Viability and environmental impact:

- Compared to the treatments proposed in the EIS by UC and Oakland, the environmental impact of The Alternate Treatment will be dramatically reduced, primarily because the fuel to be removed is lighter and smaller scale, and because fewer large trees will be cut, trimmed and dragged across the site.
- The Alternate Treatment will require dramatically less application of herbicides, both immediately and long-term.
- The Alternate Treatment will involve dramatically less environmental impact in terms of soil disturbance and erosion, water and air pollution, noise, disruption of habitat, carbon release.
- The Alternate Treatment will be a more efficient use of funds, in terms of delivering more fire risk reduction per dollar.
- The Alternate Treatment will result in less dramatically aesthetic damage, short and long term.

Note that the **Alternate Treatment has already been successfully tested**, in 2009, by EBRPD at its mid-canyon site in Claremont Canyon. The following is the description of the treatment for a eucalyptus forest written by EBRPD Assistant Fire Chief John Swanson in August 2008:

*"Phase 1:*

*a. Where they are a component of ladder fuels, we'll remove fallen branches and accessible dead foliage in tree canopies. We'll also break up any "jackpots" or concentrations of fallen branches*

*that could contribute to torching. We'll consider the need to remove dead foliage on the forest floor; however the existing ground cover may be needed to provide soil protection . . .*

*b. For most trees with a diameter of 6" or greater, we will remove tree limbs within 6 to 10 feet off the ground. We will also prune desirable retention trees less than 6" dbh up to a height not to exceed 1/3 of their total height.*

*c. We will evaluate trees less than 6" dbh for removal. Many will need to remain to meet the species diversity objective . . . Those we choose not to remove, we will prune as described . . .*

*d. Where they are a component of ladder fuels into desirable retention trees, we'll remove shrubs, chaparral, grasses and poison oak. We will evaluate the need to remove them elsewhere on the site.*

*e. We will consider the need to rake and remove ground debris from the steep slope immediately above Claremont Blvd after the tree removal there is complete. There may be considerable ground disturbance as a result of tree removal, and existing ground cover may be needed to protect soils from upcoming winter rains . . .*

*Immediately after completion of Phase 1, we will be pleased to walk through the site with you to discuss the next phase . . . "*

The "next phase" consisted of selecting which of the remaining trees would be removed, based primarily on spacing and retention of canopy. In fact, other than along the edge of the Claremont roadway, **very few trees needed removal, so the environmental impacts and use of herbicides were minimized.**

Following the Claremont mid-canyon project, we requested an accounting of the cost of this treatment, because it was obvious that it was **far less expensive** than the standard methodology – for instance, compared to UC's treatments accomplished just up the road in Claremont and Gwin Canyons – but EBRPD has not released the figures. Mid-canyon phase one treatment was completed in a matter of days, without the need for logging roads or heavy equipment, and therefore required no erosion control. It was interesting that although the understory ground fuel (leaves and litter) under the eucalyptus had not been maintained, it was minimal (about 2" thick) and the EBRPD Fire Chief stated that he would not want any less of it because of potential erosion on the steep slopes.

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**End of comments**

**Signed:**

**Peter Gray Scott, dated**



**From:** [Scott Wachenheim](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Proposed alternatives to UCB's project plans (REVISED)  
**Date:** Wednesday, June 12, 2013 9:37:02 PM

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**To:** FEMA IX ( Hazardous Fire Risk  
Reduction East Bay Hills Projects  
) P.O. Box 72379, Oakland, CA  
94612-8579

**From:** Scott Wachenheim, Berkeley,  
California

**re:** Hazardous Fire Risk Reduction  
Projects, East Bay Hills

**June 12, 2013**      **REVISED**  
**PROPOSED ALTERNATIVE PLANS**

This letter submits revised needed alternatives to the "Hazardous Fire Risk Reduction" Projects ( East Bay Hills) applied for by UCB, the City of Oakland, and the EBRP (4/2013) . THE UNDERLYING PROBLEM is that canyon hillsides covered with flammable non-native vegetation, such as Eucalyptus and Monterey Pines, have

been developed with narrow winding streets, closely built houses, and UCB structures that may lack defensible surrounding space. This is complicated by UCB's plans to continue to add buildings and facilities in Strawberry Canyon. Fema states, "The projects would reduce the amount of vegetation available to fuel wildfires. **However, the projects need revision because they do not adequately address how defensible space and fuel zones could be utilized, both to preserve wildlife in open space areas and to help protect lives and property in built areas. They do not use a longer time frame to reduce CO2 loss.**

Revision of UCB's projects in Strawberry Canyon, Claremont Canyon and Oakland's project in Frowning Ridge is needed to create fuel zone guidelines and procedures that define defensible space where agency lands border

properties with built structures. For example, within 50 feet of a building or significant structure all fuels would be removed other than ornamental and food gardens (Zone 1). Removal would be timed around nesting and migration times of birds, newts, amphibians, reptiles, Western Pond Turtles, etc. Zone 2 would extend approximately 50-200 feet from buildings and significant structures. In this zone fuels would be reduced by thinning and pruning horizontally and vertically . All agency land greater than 200 feet from buildings would be managed as a gradual transition zone back to native plants (Zone 3). **These fuel zones have proven effective in all fire severity zones. (FEMA).**

Outside of the defensible zone , more than 200 feet from buildings, **NON - NATIVE TREES IN SMALL AREAS (e.g.. 1 acre at a time) WOULD BE**

THINNED, PRUNED, or cut. Then the small areas would be replanted with natives including bunch grasses, annuals, live oak trees and redwoods, in appropriate habitats. The process would be timed to allow the native trees, plants and wildlife to re-establish and re-adapt to the changed environment. LOCAL JOBS would be created for ongoing maintenance over a five-ten year period, such as removing unwanted resprouts. This would replace the need for and **use of toxic herbicides** which would **not be permitted**. Maintenance workers would also care for the planted saplings of redwoods and oak trees. Local homeowners and UCB would be trained to maintain the defensible zones.

Compared with the proposed projects, this revision would avoid many potential problems by maintaining CO<sub>2</sub> levels through the living trees, eliminating CO<sub>2</sub> loss if the trees were cut down over a

short period of time and further loss through the two foot deep mulch, eliminating herbicide use, displacing fewer wildlife (including nesting raptors, owls); producing less impact on the UC Botanical Gardens and its pond with breeding California Newts and Western Pond Turtles, better quality hiking, biking, jogging, concerts, education programs, other public use, and less impact on the Strawberry Creek and Claremont Creek watersheds. Money saved by eliminating the vast clear-cutting would be used to pay the workers who will be restoring the native ecology. I urge you not to turn your back on this winning plan for every being.



**From:** [Seth Kauppinen](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** Rescinding my previous comment.  
**Date:** Wednesday, May 29, 2013 11:18:23 AM

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Hi there,

I submitted an incredulous, irate comment about the Easy Bay Hazardous Fire Risk Reduction plan a few days ago, after reading some very misleading descriptions of the project. My comment was premature; as the facts of the plan have become know to me, I've found myself in substantial agreement with its goals and methods. If the comment are a matter of record, please remove mine, and replace it with this one:

I'm a biologist, and resident of the East Bay hills. After reading the proposed Hazardous Fire Risk Reduction plan for the region, I believe the measure offers a valuable opportunity to simultaneously reduce fire risk and promote native vegetation, in a way that minimizes risk of herbicide contamination and other project-related landscape impacts. If the project requires volunteer labor, I'd be happy to help.

Thanks,  
Seth

Seth Kauppinen  
Department of Integrative Biology  
1005 VLSB, MC 3140  
University of California, Berkeley  
Berkeley, CA 94720

Cell: 508.274.1974  
[skauppinen@berkeley.edu](mailto:skauppinen@berkeley.edu)

"It is remarkable how long men will believe  
in the bottomlessness of a pond without  
taking the trouble to sound it."  
-Henry Thoreau

**From:** [Don Shaffer](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Cc:** [Jennifer Bensadoun](#)  
**Subject:** Comments on the Draft EIS for East Bay Hills  
**Date:** Monday, June 17, 2013 12:48:15 AM  
**Attachments:** [E1F131FC-342C-4639-9690-0B10635C0FD4\[232\].png](#)

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To Whom It May Concern,

As a resident of Claremont Canyon (240 Stonewall Road, Berkeley, CA, 94705), and as a member of the Claremont Canyon Conservancy, I appreciate the opportunity to comment on the proposed EIS and related issues.

My comments are brief: I support the plan for preventing catastrophic wildfire as proposed, with one significant distinction. It would be my great preference to see all the blue gum eucalyptus removed on UCB land in Claremont and Strawberry Canyons, but I would prefer to keep the monterey pines and acacia trees intact. The eucalyptus seem to be the real problem.

I am aware of the opposition to the plans for significant tree removal, but the fact is that the eucalyptus – in particular – should never have been planted here in the first place.

Again, I appreciate all the hard work that has led up to this final stage in the process. If possible, please include me in any correspondence related to this matter.

All the best,  
Don

Don Shaffer  
President & CEO  
RSF Social Finance  
1002 O'Reilly Avenue  
San Francisco, Ca 94129  
Direct: 415-561-6177  
Main: 415-561-3900  
Fax: 415-561-3919  
[www.rsfsocialfinance.org](http://www.rsfsocialfinance.org)<applewebdata://3E9D22DF-0120-44F2-9C9B-07B92CF003B2/www.rsfsocialfinance.org>

Cres Van Keulen  
Executive Assistant  
[cres.vankeulen@rsfsocialfinance.org](mailto:cres.vankeulen@rsfsocialfinance.org)  
Direct: 415-561-6155

[Email\_Signature\_Image]





# FEMA

### DRAFT ENVIRONMENTAL IMPACT STATEMENT

NAME: LARRY SHOUP

CONTACT INFO (optional): \_\_\_\_\_  
\_\_\_\_\_

Tuesday, May 14, 2013

Richard C. Trudeau Training Center

Main Room

11500 Skyline Boulevard

Oakland, CA 94619

2:00 PM—4PM & 6PM—8PM

Saturday, May 18, 2013

Claremont Middle School

Gymnasium

5750 College Avenue

Oakland, CA 94618

10:00AM—Noon

### COMMENTS:

*We as a community are already overloaded with toxic materials & this plan doses our collective environment with more poisons. When such toxics are used, the implimentation conditions are often ignored. Not are they (the cond.) adequate, a 60 foot no spray zone around water sources is inadequate for example, these toxics will get into the water.*

Signature and Date:

Larry Shoup

296\_Shoup\_Larry

*get into the water.*

**From:** [Judi Sierra](#)  
**To:** [EBH-EIS-FEMA-RIX](#)  
**Subject:** EB Hills EIS draft  
**Date:** Monday, June 17, 2013 6:27:58 PM

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I am opposed to the UC portion, including clearcut instead of thinning in this East Bay hills draft plan. I am a senior citizen and have run in Strawberry Canyon daily since 1982. In addition I have pretty good birding skills. My early morning observations include roosting and nesting habitat the tall trees have provided for at least 2 pairs of Great Horned Owls, 1 pair of Red-tailed hawks and one pair of Red-shouldered hawks and at least one Northern Pygmy Owl. Seasonally each spring Olive-sided Flycatchers (a declining species), Pacific Coast flycatchers, Western Wood pewees arrive and stay throughout the summer (presumably breeding) and use the Monterey pine as well as eucalyptus to perch and fly catch, from. On foggy days the drip from these trees is quite noticeable creating a muddy trail and contributing to fire preventing moisture.

In addition I don't think years of spraying is conducive to a healthy watershed or wildlife environment. (Not to mention canyon users and their dogs) Tributary and Strawberry creek waters flow through the campus and to the San Francisco Bay.

UC Berkeley has begun cutting down large Pines and oaks along the fire road and dumping them down the hillside. How does this reduce the fuel load? This only reinforces my belief that suppression is not their prime interest.

The Oakland-Berkeley Mayors' Firestorm Task Force Report concluded that "the spread of the fire was mostly due to the radiant heat generated by burning houses. A burning house has a sustained radiant heat transmission of 2,500-3,000 degrees. The spread of the fire was not due primarily to burning trees — eucalyptus or any other species." Angel Island is a prime example of how well clear cutting works for fire suppression.

Judi Sierra  
north Oakland, CA