

Executive Summary

This draft environmental impact statement (EIS) evaluates the environmental effects that could occur if specific projects designed to reduce wildfire hazard and risk are implemented. The projects would consist of vegetation management work in 105 defined project areas. One hundred of these areas are in a region informally known as the East Bay Hills, and the remaining five areas are in Miller/Knox Regional Shoreline, a facility of the East Bay Regional Park District (EBRPD) on San Francisco Bay.

As used in this EIS, the term East Bay Hills refers to a series of ridges east of San Francisco Bay that begin on the east side of Interstate 80 in Richmond and run southeast to Lake Chabot. The East Bay Hills contain many densely built residential neighborhoods of mostly single-family homes but also include large tracts of open space and wildlands managed by EBRPD; the University of California, Berkeley (UCB); the City of Oakland (Oakland); and the East Bay Municipal Utilities District.

Vegetation management work in 60 of the 105 project areas was proposed in four grant applications submitted to the Department of Homeland Security's Federal Emergency Management Agency (FEMA) by EBRPD, UCB, and Oakland. The four applications are described in Section ES.1 below. In addition to the vegetation management work proposed for FEMA funding, work is proposed within the project areas that may be funded by other agencies. Some of this additional work includes activities that are not eligible for FEMA funding, such as the pile burning and area burning proposed by EBRPD. In this EIS, the combination of vegetation management activities proposed for FEMA funding (the grant applications) and the activities proposed to be funded by others on the 60 project areas is identified as the proposed action.

The remaining 45 project areas are adjacent or nearby areas in which EBRPD plans to do similar vegetation management work. This EIS refers to these 45 additional areas as connected project areas. Vegetation management work in the 45 connected project areas is needed to reduce wildfire hazard in additional areas. Together, the proposed and connected actions would provide more effective protection over a larger area by creating a continuous firebreak along the most vulnerable urban-wildland interfaces. Both the proposed and connected actions would need to be completed in order to achieve substantial reductions in hazardous fire risk.

EBRPD's 48 proposed and 45 connected project areas are among the vegetation management areas identified in EBRPD's Wildfire Hazard Reduction and Resource Management Plan (EBRPD 2009b). The proposed vegetation management work in the 48 proposed project areas included in EBRPD's grant application is intended to reduce fire hazard in areas that are particularly vulnerable to wildfire or are particularly in need of protection.

The proposed action would be implemented on land owned by UCB and Oakland and within 11 parks owned and maintained by EBRPD. Figure ES-1 shows the proposed and connected project areas in the context of the East Bay region.

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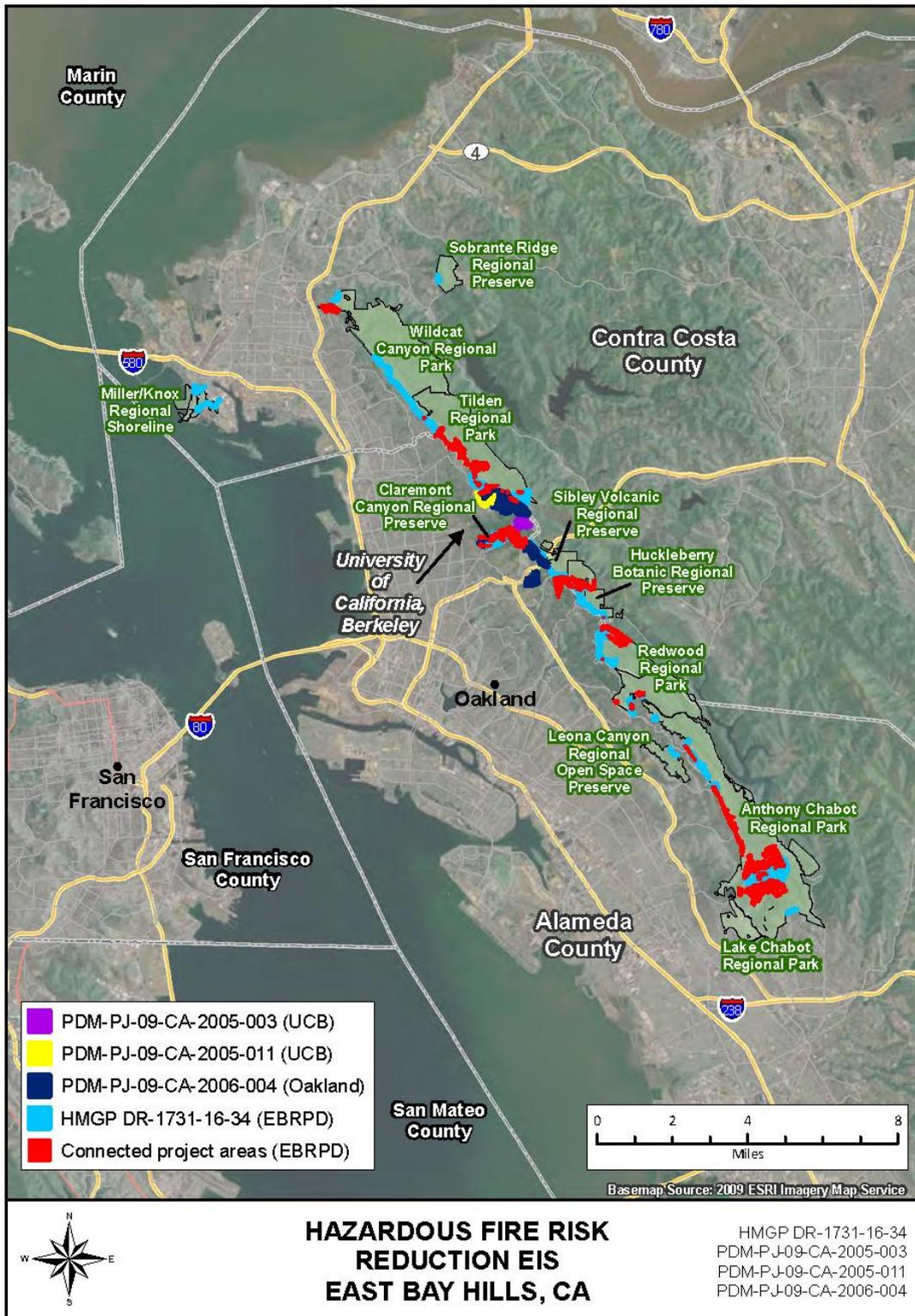


Figure ES-1. Proposed and Connected Project Areas

ES.1 The Grant Applications

UCB, Oakland, and EBRPD have submitted a total of four grant applications to FEMA through the California Emergency Management Agency (Cal EMA) for federal financial assistance to implement hazardous fire risk reduction projects in the East Bay Hills of Alameda and Contra Costa counties, California, and at the Miller/Knox Regional Shoreline in Contra Costa County. Cal EMA is the official applicant and UCB, Oakland, and EBRPD are subapplicants. The funding sought in the four grant applications would be provided under FEMA’s Pre-Disaster Mitigation (PDM) program and Hazard Mitigation Grant Program (HMGP).

Table ES-1 lists the subapplicants, application numbers and acreage for the proposed hazardous fire risk reduction projects. The proposed action, the connected actions, and alternatives are described in Section ES.7.

Table ES-1. Subapplicants, Application Numbers, and Acreage for the Proposed Hazardous Fire Risk Reduction Projects (Proposed Action)

Subapplicant	Application Number	Acreage ⁽¹⁾
UCB	Strawberry Canyon PDM-PJ-09-CA-2005-011	56.3
	Claremont Canyon PDM-PJ-09-CA-2005-003	42.8
Oakland	PDM-PJ-09-CA-2006-004	359.0
EBRPD	HMGP 1731-16-34	540.2
Total		998.3

⁽¹⁾ Acreages were identified using information by the subapplicants and geographic information system (GIS) software.

CA = California
 EBRPD = East Bay Regional Park District
 HMGP = Hazard Mitigation Grant Program
 Oakland = City of Oakland
 PDM = Pre-Disaster Mitigation
 PJ = Project
 UCB = University of California, Berkeley

ES.1.1 UCB

UCB submitted two grant applications under the PDM program: one for a 56.3-acre area designated Strawberry Canyon-PDM in this EIS and one for a 42.8-acre area designated Claremont-PDM. To reduce the potential for these areas to support and spread wildfires, UCB proposes to eliminate eucalyptus, Monterey pine, and other non-native trees that promote the spread of wildfire. Oak and bay trees and other native vegetation present under the larger non-native trees would be preserved and encouraged to expand. UCB would take this same general approach in the proposed Frowning Ridge-PDM project, which is included in Oakland’s grant application (see Section ES.1.2 below).

ES.1.2 Oakland

Oakland submitted an application under the PDM program for six projects in Alameda County near the Contra Costa County border. The projects would be implemented by Oakland, UCB,

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and EBRPD. The six projects are Oakland's North Hills-Skyline-PDM and Caldecott Tunnel-PDM projects; UCB's Frowning Ridge-PDM project; and EBRPD's Tilden Regional Park-PDM (Tilden-Grizzly), Sibley Volcanic Regional Preserve-PDM (Sibley Triangle and Island), and Claremont Canyon-PDM (Claremont Canyon-Stonewall) projects. These six project areas total 359.0 acres. In its North Hills-Skyline and Caldecott Tunnel projects, Oakland would seek to eliminate eucalyptus and other non-native, fire-promoting trees; preserve native trees and give them room to grow; and create a fuel break on the west side of Grizzly Peak Boulevard north and east of the Caldecott Tunnel.

ES.1.3 EBRPD

EBRPD submitted an application under the HMGP for reduction of fuel loads on 540.2 acres in 11 regional parks: Anthony Chabot Regional Park, Claremont Canyon Regional Preserve, Huckleberry Botanic Regional Preserve, Lake Chabot Regional Park, Leona Canyon Regional Open Space Preserve, Miller/Knox Regional Shoreline, Redwood Regional Park, Sibley Volcanic Regional Preserve, Sobrante Ridge Regional Preserve, Tilden Regional Park, and Wildcat Canyon Regional Park. EBRPD would reduce fuel loads primarily by promoting conversion of dense scrub, eucalyptus forest, and non-native pine forest to grassland with islands of shrubs. Oak and bay trees would be preserved. EBRPD would take this same general approach in the three proposed EBRPD projects included in Oakland's grant application (see Section 1.1.2 above).

ES.2 Lead and Cooperating Agencies

FEMA is the lead federal agency for preparation of this EIS. Other local, state, and federal agencies may be involved in the EIS process because they have special expertise in or knowledge of environmental issues, they have jurisdiction by law, or they must approve a portion of the proposed action.

FEMA has invited the U.S. Forest Service (USFS), the National Park Service (NPS), the U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), Cal EMA, UCB, Oakland, and EBRPD to be cooperating agencies, and all have accepted. FEMA and the cooperating agencies have executed a memorandum of understanding to govern their working relationship for preparation of this EIS. The memorandum of understanding is in Appendix J.

ES.3 Environmental Review Requirements

FEMA's involvement in the hazardous fire risk reduction projects triggers the requirements of NEPA (42 U.S. Code [U.S.C.] §§ 4321–4347), which include an evaluation by federal agencies of the potential environmental impacts of proposed actions and a consideration of the impacts during the decision-making process. FEMA is preparing this EIS in accordance with 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.

ES.4 Scope of this EIS

FEMA has determined that all proposed vegetation management work in the 60 project areas included in the four grant applications should be assessed in the same EIS. This determination is based on the proximity of the project areas to each other and the potential for cumulative impacts (see 40 CFR § 1508.25). In this EIS, the work proposed in those 60 areas is called the proposed action. FEMA has concluded that the proposed action and additional hazardous fire risk reduction projects planned by EBRPD are interdependent parts of an overall hazardous fire risk reduction program designed to create a fuel break at the interface between the developed and undeveloped portions of the East Bay Hills. The additional projects planned by EBRPD are connected to the proposed action and are therefore addressed in this EIS.

Selection of topics to be addressed in the EIS was based on concerns raised during public scoping (see Section 1.6) and on regulatory and FEMA policy requirements. These issues involve resources that could be beneficially or adversely affected by the proposed and connected actions. Impact topics include:

- Biological Resources
- Fire and Fuels
- Geology, Seismicity, and Soils
- Water Resources
- Air Quality
- Climate and Microclimate
- Historic Properties
- Aesthetics and Visual Quality
- Socioeconomics
- Human Health and Safety
- Public Services, Infrastructure, and Recreation
- Land Use and Planning
- Transportation
- Noise

ES.5 Public Involvement

Public involvement is an important part of the NEPA process. The success of NEPA as an environmental disclosure and problem-solving law is based on open decision making. NEPA provides opportunities for public involvement at several steps in the environmental review process, including public scoping and public review of a draft EIS.

The public scoping process required by 40 CFR § 1501.7 was completed for the proposed action. A notice of intent to prepare an EIS for the proposed action was published in the *Federal Register* on June 10, 2010. The notice of intent initiated a public scoping period that concluded on October 1, 2010. The public scoping period was the primary opportunity for public involvement in the EIS process to date.

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FEMA conducted two public scoping meetings in August 2010 to solicit input from the public about the environmental topics to be included in the EIS and the issues to be analyzed in depth. The issues and concerns identified during scoping and in earlier public comments provided the basis for selection of the topics addressed in detail in Section 5, the Environmental Consequences section of this EIS. The areas of concern and the types of comments received during scoping are described in the Scoping Report in Appendix K. Section 7 describes the EIS public outreach and involvement process and its results.

ES.6 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. Reduction of hazardous fire risk would reduce the need for future disaster relief and the risk of repetitive suffering and damage.

The four grant applications addressed in this EIS were submitted under FEMA's PDM program and FEMA's HMGP. The PDM program provides funds to states, territories, Indian tribal governments, communities, and universities for hazard mitigation planning and implementation of mitigation projects to prepare for a disaster. Funding these plans and projects reduces overall risks to people and structures while reducing reliance on funding connected with disaster declarations.

The HMGP provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce loss of life and property due to natural disasters and to enable implementation of mitigation measures during recovery from a disaster.

FEMA approval of the grant applications submitted to Cal EMA by the subapplicants under the PDM program and the HMGP would serve the project purpose.

The need for the project arises from the severity and repetitive nature of wildfires in the East Bay Hills area and the proximity of residential areas to open spaces that are susceptible to fires. Fire hazard severity mapping prepared by the California Department of Forestry and Fire Protection (Cal Fire) indicates that most of the undeveloped areas in the East Bay Hills are in the very high fire hazard severity zone—the zone where wildfire hazard is most severe (Cal Fire 2007a, 2007b, 2008, 2009b). Several factors contribute to this very high fire hazard. The East Bay Hills and the vicinity of Miller/Knox Regional Shoreline have a hot and dry fall season, wind-conductive topography, flammable vegetation, dense development, and limited accessibility for firefighting. The East Bay Hills are subject to hot, dry winds from the northeast that can drive a wildfire from the regional parks and other open space areas into residential areas. Miller/Knox Regional Shoreline is subject to winds from San Francisco Bay that can drive a wildfire into residential areas adjacent to the park.

Between 1923 and 1992, 15 major wildfires occurred in the East Bay Hills (Hills Emergency Forum 2010). Eight were driven by east winds, known locally as Diablo winds, and seven were driven by west and southwest winds. The 15 fires burned a total of almost 9,000 acres, destroyed approximately 4,000 homes, and killed 26 people. One of the fires, the 1923 Berkeley Fire,

destroyed more than 550 homes in a few hours. A fire in 1970 consumed more than 200 acres and burned 37 homes. The 1991 Tunnel Fire killed 25 people, destroyed more than 3,000 homes, and did an estimated \$1.5 billion in damage (California Office of Emergency Services 1992).

All of the proposed project areas in the application submitted by Oakland and the two applications submitted by UCB are in areas mapped by Cal Fire as very high fire hazard severity zones (Cal Fire 2008). Of EBRPD's 48 proposed project areas, 39 and part of a 40th are in very high fire hazard severity zones (Cal Fire 2007a, 2007b, 2008, 2009). Of EBRPD's 45 connected project areas, 42 and part of a 43rd are in very high fire hazard severity zones. EBRPD selected its proposed and connected project areas based on multiple factors including the following (EBRPD 2009b):

- Degree of fire hazard
- Proximity to facilities requiring defensible space
- Need to provide firefighter safety zones and to protect areas critical for firefighting operations
- Need to maintain areas where fuel reduction has been performed previously

Based on the wildfire hazard characteristics of the East Bay Hills and the Miller/Knox Regional Shoreline, 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.

ES.7 Alternatives

Identifying and analyzing alternatives is an essential part of the NEPA decision-making process. As part of the alternatives analysis, preliminary alternatives are identified. The ability of these alternatives to meet the project purpose and need is considered. Some alternatives are eliminated from further consideration and the remaining alternatives are studied in detail.

FEMA considered five preliminary alternatives:

1. The proposed action
2. No action, which involves denying the grant applications
3. Funding the grant applications with conditions to address their environmental impacts
4. Funding the grant applications with fuel reduction methodologies that are different than as proposed by the applicants
5. Partially funding the grant applications, including funding some grant projects and denying others (*Federal Register* 2010)

All five preliminary alternatives were assessed against the criteria for meeting the purpose and need and against the comments received during scoping. FEMA determined that the alternative

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Funding the Grant Applications with Conditions to Address Their Environmental Impacts was actually the proposed action as it would evolve through the EIS process. Therefore this alternative was dismissed as a separate alternative. The alternative *Partially Funding the Grant Applications, Including Funding Some Grant Projects and Denying Others* was determined to not be a separate alternative, but a decision that FEMA could choose to make based on the findings of the EIS process. Therefore, it was also eliminated as a separate alternative. The preliminary alternative *Funding the Grant Applications With Fuel Reduction Methodologies That Are Different Than as Proposed by the Applicants* was eliminated because the alternative methodologies FEMA considered either were not significantly different from the proposed methodologies or did not seem likely to meet the purpose and need. Alternative methodologies considered but eliminated from further study are discussed in Section 3.3 of the EIS.

The following alternatives were analyzed in detail:

- No action alternative
- Proposed and connected actions

Although the no action alternative was the only alternative to the proposed and connected actions that was carried forward for additional study, FEMA can still require modification of the proposed and connected actions as a condition of funding the grant applications. Members of the public, organizations, and government agencies can recommend modifications of the proposed and connected actions in comments on the draft EIS. Any modifications required by FEMA will be included in FEMA's Record of Decision on the proposed and connected actions.

ES.7.1 No Action Alternative

Under this alternative, FEMA would not fund any of the proposed grant applications, which are part of the proposed actions, and those activities would not be implemented. UCB would continue annual removal of grass and light, flashy fuels (such as twigs, needles, and grasses that ignite and burn rapidly) from UCB roadsides, UCB turnouts, and within 100 feet of UCB structures and adjacent private residences. UCB would also work to maintain the strategic areas where fuel reduction projects have been completed during the past 10 years to ensure eradication of target species of vegetation that have already been removed. UCB would continue to pursue fuel reduction within 30 feet of private and public structures to create defensible space in accordance with its 2020 Hill Area Fire Fuel Management Program. Oakland would continue to conduct basic fire reduction activities including removal of hazardous vegetation from roadsides. EBRPD would continue to maintain areas where vegetation reduction has already been completed.

EBRPD is already implementing elements of the connected actions using funds from sources other than FEMA and vegetation management activities similar to those proposed in the grant applications are ongoing on EBRPD properties. However, because the greatest hazardous fire risk reduction benefits would only accrue if both the proposed and connected actions are implemented, hazardous fire risk reduction is not considered an effective outcome of the no action alternative.

ES.7.2 Proposed and Connected Actions

The proposed action consists of the vegetation management work included in the four grant applications listed in Table ES-1, plus additional vegetation management proposed in the same areas but not eligible for FEMA funding. The proposed action is intended to reduce hazardous fire risk to people and structures in many areas in the East Bay Hills and Miller/Knox Regional Shoreline. This EIS also addresses vegetation management projects planned by EBRPD in many connected areas, as explained in Section ES.4. The proposed and connected project areas are summarized in Table ES-2.

Table ES-2. Summary of Proposed and Connected Project Areas

Project Area	Proposed Action Acres	Connected Action Acres	Total Acres
UCB			
Strawberry Canyon-PDM	56.3	0	56.3
Claremont-PDM	42.8	0	42.8
Subtotal	99.1	0	99.1
Oakland			
North Hills-Skyline-PDM	68.3	0	68.3
Caldecott Tunnel-PDM	53.6	0	53.6
Frowning Ridge-PDM (UCB project)	185.2	0	185.2
Tilden Regional Park-PDM (EBRPD project)	34.3	0	34.3
Sibley Volcanic Regional Preserve-PDM (EBRPD project)	3.9	0	3.9
Claremont Canyon-PDM (EBRPD project)	13.7	0	13.7
Subtotal	359.0	0	359.0
EBRPD			
Sobrante Ridge Regional Preserve	4.1	0	4.1
Wildcat Canyon Regional Park	65.6	46.6	112.2
Tilden Regional Park	97.7	194.2	291.9
Claremont Canyon Regional Preserve	21.6	130.4	152.0
Sibley Volcanic Regional Preserve	43.6	118.4	162.0
Huckleberry Botanic Regional Preserve	17.8	0.3	18.1
Redwood Regional Park	58.4	92.8	151.2
Leona Canyon Regional Open Space Preserve	4.6	0	4.6
Anthony Chabot Regional Park	200.0	478.2	678.2
Lake Chabot Regional Park	4.8	0	4.8
Miller-Knox Regional Shoreline	22.2	0	22.2
Subtotal	540.2	1,060.7	1,600.9
TOTAL	998.3	1,060.7	2,059.0

The proposed and connected actions involve cutting down many trees to reduce wildfire hazard. Targeted trees would be cut down and processed by trained, qualified subapplicant staff or contractors using methods consistent with the California Forest Practice Rules. If a timber harvest plan is required by § 4581 of the California Public Resources Code (Z'berg-Nejedly

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Forest Practice Act) the plan would be prepared by a registered professional forester and would contain detailed information on the timber operations. The California Forest Practice Rules and the Z'berg-Nejedly Forest Practice Act are available at http://calfire.ca.gov/resource_mgt/downloads/2012_California_Forest_Practice_Rules.pdf.

In general, work would be conducted from August through November to avoid the wet season and the bird nesting and fledging season. Work could be conducted during the February-through-July nesting and fledging season in areas approved by an avian biologist. The proposed and connected actions would include best management practices identified by the San Francisco Bay Regional Water Quality Control Board to control erosion during and after vegetation management activities (see Section 5.3.2.3).

The proposed and connected actions involve use of herbicides. Herbicides would be applied by a licensed pesticide applicator following recommendations from a licensed pest control adviser. Eucalyptus and acacia stumps would be treated with herbicide to prevent or reduce resprouting. Pine stumps do not require treatment because they do not produce sprouts. In the maintenance phase, sprouts growing from cut stumps would be treated by hand-spraying herbicide on their leaves or by cutting them and hand-spraying the cut stubble. Seedlings of targeted species would be pulled up or cut off near the ground and sprayed with herbicide.

No spraying of foliage would occur within 60 feet of standing or flowing water. Within this 60-foot buffer, herbicides would only be applied directly to stumps, and use of herbicides would be restricted to Garlon 3A or other herbicides approved for use near water. Within the 60-foot buffer, herbicides would be applied to stumps within 60 minutes of cutting down the tree. Herbicides would not be used in the 60-foot buffer within 24 hours after rain or when the chance of rain within 24 hours is greater than 40%. To prevent airborne drift of herbicide mist into the 60-foot buffer, 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 associated with inversion conditions in which mists and vapors tend to stay near the ground rather than dispersing upward.

ES.7.2.1 UCB

The UCB grant application includes two project areas in which approximately 22,000 non-native trees would be cut down, including all eucalyptus, Monterey pine, and acacia trees. The goal is to reduce the amount of fuel in the project areas by allowing 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 currently present beneath the eucalyptus and other non-native trees. The native species would provide less fuel to potential wildfires than the non-native species currently provide.

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. UCB expects the chips to largely decompose within 5 years.

Branches from trees greater than 24 inches DBH would be cut up and scattered on the site (lopped and scattered). 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 shipped for use as fuel, a source of paper pulp, or horse bedding.

Three temporary access roads are anticipated to be required for the proposed Claremont-PDM project. The three roads would be 12 feet wide and total approximately 2,600 feet long.

Completion of the initial vegetation reduction work is expected to require up to 40 weeks spread over 2 to 3 years. Maintenance would continue for up to 10 years after initial tree cutting.

ES.7.2.2 Oakland

Oakland's grant application (PDM-PJ-09-CA-2006-004) includes six proposed project areas in which vegetation management work would be done by three property owners: Oakland, UCB, and EBRPD. Oakland owns the 68-acre North Hills-Skyline-PDM and the 54-acre Caldecott Tunnel-PDM, and UCB owns the 185-acre Frowning Ridge-PDM. EBRPD owns the 34-acre Tilden Regional Park-PDM, the 3.9-acre Sibley Volcanic Regional Preserve-PDM, and the 14-acre Claremont Canyon Regional Preserve-PDM. EBRPD's approach to vegetation management work is summarized in Section ES.7.2.3.

ES.7.2.2.1 North Hills-Skyline-PDM

This 68-acre proposed project area is on the southwest side of Grizzly Peak Boulevard north of State Route (SR) 24 and above the Caldecott Tunnel. It includes eucalyptus, pine, and brush. The proposed action would extend the fuel break created by previous UCB and EBRPD projects. The long-range goals would be to eradicate eucalyptus and Monterey pine across the entire ridgeline and to convert brush to grassland at Grizzly Flats to create a ridgeline fuel break. In the southeastern portion of the proposed project area, removal of eucalyptus would promote emergence of a native forest of California bay, oak, maple, buckeye, and hazelnut, which produce smaller amounts of fuel.

The site would be accessed from pullouts along Grizzly Peak Boulevard, Tunnel Road, and Skyline Boulevard. No new access roads would be created. Eucalyptus would be chipped and the chips would be spread over a maximum of 20% of the site at a maximum depth of 24 inches. The site burned intensely in the 1991 Tunnel Fire, so few if any eucalyptus on the site are too large to chip. Monterey pines would be cut up and scattered on the site.

ES.7.2.2.2 Caldecott Tunnel-PDM

The 54-acre Caldecott Tunnel-PDM proposed project area is on the east side of Broadway and SR 24, south of the southwestern end of the Caldecott Tunnel. Eucalyptus trees in the northern portion of the site produce large amounts of flammable debris and prevent development of understory vegetation. Other portions of the site contain oak-bay woodlands, mesic north coastal scrub, and a disturbed area containing a parking lot and ballfields.

Proposed activities are limited to the area of eucalyptus. Oakland's goal for Caldecott-PDM is to convert the eucalyptus-dominated forest to annual grassland and eventually to north coastal scrub. Eucalyptus would be chipped and the chips would be spread on up to 20% of the site with

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a maximum depth of 24 inches. The site burned intensely in the 1991 Tunnel Fire, so few if any eucalyptus on the site are too large to chip.

ES.7.2.2.3 Frowning Ridge-PDM

UCB owns the 185-acre Frowning Ridge proposed project area. UCB would remove non-native vegetation including all eucalyptus, Monterey pine, and acacia. 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. The native species would provide less fuel for potential wildfires than the non-native species currently provide. Portions of the site would convert to coastal scrub or coyote brush scrub.

Approximately 32,000 eucalyptus and pine trees would be removed. The same procedures described in Section ES.7.2.1 above would be used for tree removal, management of cut material, suppression of resprouting from stumps, and suppression of seedlings.

UCB anticipates that one additional temporary access road approximately 200 feet long and 12 feet wide would be needed, and that earth moving would occur along the entire length of the temporary road.

Completion of the proposed vegetation removal at Frowning Ridge-PDM is expected to require 40 to 60 weeks spread over 2 to 3 years.

ES.7.2.3 East Bay Regional Park District

EBRPD's grant application proposes fuel reduction measures on 540.2 acres in eleven regional parks. Oakland's grant application proposes fuel reduction measures that EBRPD would execute on 51.9 acres in three of the same 11 parks. This EIS also addresses connected hazardous fire risk reduction measures planned by EBRPD on 1,060.7 acres in seven of the same 11 parks.

EBRPD intends to reduce fuel load and fuel sources by reducing the density of undesirable invasive plant species within the proposed and connected project areas. EBRPD would accomplish this through implementation and long term maintenance of tree and brush removal (mechanical and hand), herbicide treatment, and, although not funded by FEMA, animal grazing, pile burning, and broadcast burning.

ES.7.2.3.1 General Vegetation Management Goals

The majority of the vegetation management work would focus on reducing the amount of fire-promoting, non-native, invasive species of trees and shrubs such as eucalyptus, Monterey pine, acacia species, and French broom. French broom is a major component of coastal scrub. Selective removal and reduction of native shrubs such as coyote brush and sage would be implemented to further reduce fuel sources for fire.

EBRPD would seek to increase the amount of successional grassland, which is grassland with islands of shrubs. Native vegetation such as oak-bay woodland would be protected and promoted through reduction of eucalyptus, pine and acacia. To further reduce fuel available to a wildfire, woody debris would be removed from oak-bay woodlands and low branches would be removed.

In areas where oaks and bays are overly dense, these trees may be thinned, favoring retention of healthy, larger oaks and bays to increase the fire resilience of the residual stand. Native redwood forests would be left as they are.

Brush would be thinned to reduce the amount of fuel available to a fire and to create gaps in the available fuel. Brush habitat would be maintained and increased in quality where possible.

Perennial and annual grasses would be managed to maintain open grassland habitat, reduce brush encroachment, increase native species diversity, reduce fuel loads, and maintain travel corridors for native wildlife. Aquatic, wetland, and riparian habitat would be managed to protect and encourage expansion of these habitats. Measures would be implemented to prevent erosion or sedimentation into these habitats.

ES.7.2.3.2 Vegetation Management Methods

EBRPD's vegetation management methods are based on its Wildfire Hazard Reduction and Resource Management Plan (EBRPD 2009). The plan is available at <http://www.ebparks.org/stewardship/fuelsplan/plan>. The plan recommends selective thinning of areas dominated by non-native invasive species that contribute fuel to wildfires. Eucalyptus, Monterey pine, and acacia trees would be targeted to reduce the number of trees per acre or remove entire groves. Lower limbs would be removed from remaining trees and woody debris would be removed from under the trees.

In most cases, desirable vegetation growing beneath eucalyptus would be protected and promoted to replace eucalyptus over time. Logs would be placed and retained as a component of the sediment and erosion control measures, to improve wildlife habitat, and to promote long-term soil productivity. Trees would be removed from the project areas or, in some cases, chipped and left on-site. Wood chips left on-site would be limited to a depth of 4 to 6 inches and would cover no more than 20% of each project site. In addition, although not funded under the HMGP, pile burning and in a few cases area burning would be used under prescribed and permitted conditions to dispose of some of the cut woody material.

Trees within 50 feet of the high water mark of a continuous or intermittent stream would be cut using hand-held equipment. No self-propelled equipment would enter the 50-foot buffer to be used for either removal or processing of vegetation.

ES.8 Environmental Consequences

Table ES-3 summarizes the conclusions of the EIS regarding the environmental effects of the proposed and connected actions and the no action alternative.

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Table ES-3. Summary of Potential Effects

Resource Category	No Action Alternative	Proposed and Connected Actions
Biological Resources	Greater potential for large and intense wildfire and resulting destruction of vegetation, wildlife, and wildlife habitat Continued spread of invasive non-native vegetation in the project areas	Cutting of large amounts of non-native, invasive vegetation and some native vegetation Potential damage to wildlife including the endangered California red-legged frog and the threatened Alameda whipsnake, potential damage to wildlife habitat including critical Alameda whipsnake habitat, and potential damage to nontargeted vegetation including the endangered Presidio clarkia and the threatened pallid Manzanita by heavy equipment, tree skidding, and application of herbicides, minimized by mitigation measures and best management practices Improved conditions for preserved native vegetation and Improved conditions for native wildlife that benefits from native habitat Enhancement of Alameda whipsnake habitat Improvement of growing conditions for pallid manzanita, a threatened plant
Fire and Fuels	Greater potential for large and intense wildfire	Significantly reduced potential for severe wildfire
Geology and Seismicity	No effect	No effect
Soils	Greater potential for large and intense wildfire and resulting soil erosion and increased risk of landslides Greater potential for destruction of organic matter in soil during an intense wildfire	Increased potential for soil erosion and landslides during and after implementation, mitigated by best management practices including erosion control and not using heavy equipment in mapped landslide areas Temporary reduction of soil productivity caused by wood chips blocking light and by nitrogen demand exerted by decomposing chips
Water Resources	Greater potential for sedimentation of streams and water bodies following a wildfire	Potential for sedimentation of streams and water bodies during and after implementation, mitigated by erosion and sedimentation control measures Potential for herbicides to reach streams and water bodies in stormwater runoff, minimized by best management practices and use restrictions near water
Air Quality	Greater amount of air pollution during a wildfire	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
Climate and Microclimate	Greater potential for major production of carbon dioxide during a wildfire	Creation of carbon dioxide during pile burning of cut vegetation and broadcast burning in a few project areas Shorter growing season in areas where trees would be cut because of decreased fog-drip in summer Increased ground-level wind speed downwind of ridgelines caused by cutting of ridgeline trees

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Resource Category	No Action Alternative	Proposed and Connected Actions
Historic Properties	Greater potential for destruction of historic properties during a wildfire	No effect
Aesthetics and Visual Quality	Greater potential for severe aesthetic impact caused by wildfire	Significant adverse visual impact in Tilden Regional Park near Selby Trail and the merry-go-round
Socioeconomics	Greater potential for devastating impact to residential communities and businesses during wildfire	Reduced potential for devastating impact to residential communities and businesses during wildfire
Health and Human Safety	Greater potential for injury and adverse health effects caused by wildfires	Potential adverse health effects of herbicides on vegetation management workers, nearby residents, and users of parks and open space, mitigated by restrictions on herbicide use and best management practices
Public Services, Utilities, and Recreation	Greater potential for disruption of public services, destruction of utility infrastructure, destruction of recreational facilities, and increased demand for public safety services during a wildfire	Temporary restrictions on recreational use of trails
Land Use and Planning	No effect	No effect
Transportation	Greater potential for disruption of transportation by wildfires	Road closures for up to 30 minutes
Noise	No effect	Significant temporary adverse impact within the project areas and at the homes closest to many of the project areas

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