

IV. TEXT REVISIONS

Chapter IV presents specific changes to the text of the Draft EIR that are being made to clarify information in the Draft EIR, in response to comments received during the public review period or the direction of City staff. In no case do these revisions introduce “significant new information” as defined in *CEQA Guidelines* section 15088.5, including new or more severe environmental impacts, new mitigation measures or alternatives, or information indicating that the Draft EIR is fundamentally and basically inadequate. All revisions contained herein are minor in nature. Where revisions to the main text are called for, the page is listed, followed by the associated revision. Added text is indicated with underlined text. Text deleted from the Draft EIR is shown in ~~strikeout~~. Page numbers correspond to the page numbers of the Draft EIR.

A. DRAFT EIR TEXT REVISIONS

Page 3 has been revised to add the following as the third paragraph under Section C. EIR Scope:

To the degree that this EIR relies on reports, studies, or other documents for its analyses, such documents are incorporated by reference as applicable to this project. All reports, studies and other documents incorporated by reference are available for public review at the East Bay Regional Park District Offices, 2950 Peralta Oaks Court, Oakland, CA 94605-038.1

Page 25 of the Draft EIR is revised as follows:

3. Ensure that during the planning for and implementation of all fuel reduction activities that the protection, restoration and enhancement of biologically diverse habitats and environmental resources, including cultural resources, is given full consideration, and specific resource management objectives and actions are incorporated into all fuel reduction treatment plans.

Page 114 of the Draft EIR has been revised as follows:

~~⁴ Amme, D. and N. Havlik. 1987. *An Ecological Assessment of Arctostaphylos pallida Eastw., Alameda and Contra Costa Counties*. The Four Seasons 7 (4): 28-46. East Bay Regional Park District, Oakland, CA.~~

⁴ Amme and Havlik, 1987. *Assessment and Management of Arctostaphylos pallida Eastwood*. Pp. 447-453 In: Elias, T. [ed] *Proceedings of a California Conference on the Conservation and Management of Rare and Endangered Plants*. California Native Plant Society, Sacramento, Calif., and Amme and Havlik, 1985. *An Ecological Assessment of Arctostaphylos pallida Eastw., Alameda and Contra Costa Counties*. The Four Seasons 7(4):28-46. East Bay Regional Park District, Oakland, CA.

Page 115 of the Draft EIR has been revised as follows:

¹⁶ McBride, J.R. and H.F. Heady. 1968. ~~Invasion of grassland by *Baccharis pilularis* D.C. J. Range Management 21:106-108.~~ Invasion of Grassland by *Baccharis pilularis* D.C. Journal of Range Management 21(2):106-108.

Page 126 of the Draft EIR has been revised as follows:

²⁸ McBride, J.M. 1974. ~~Plant succession in the Berkeley Hills. Madroño 22(3):317-329~~ op.cit.

Page 161 of the Draft EIR is revised as follows:

EBRPD recognizes that the control of invasive, non-native plant species on park lands before, during, and after treatment activities that are undertaken to reduce fuel loads is an important issue because of these species rapid proliferation in disturbed areas, their contribution to fuel loads and fire hazards, and their ability to adversely affect native and special-status plants and habitats. To reduce the potential impacts associated with invasive, non-native plant species, the Plan contains specific objectives and detailed guidelines and prescriptions for the control of invasive plant species common to the Study Area in Chapter V. Vegetation Management Program, Section B. Invasive Plants, and more specifically in the Plan Appendix G: Prescriptions for the Control of Invasive Plant Species and Noxious Weeds. As stated on page 122 of the Plan, “In keeping with the Plan’s goals, the following are three objectives for reducing the invasive and noxious weeds that the District should seek to address when undertaking specific fuel reduction actions: 1. Control weeds; 2. Identify and achieve resource management objectives such as wildland fuel reduction, wildlife habitat maintenance, ecosystem preservation, forage production, or recreational land management, and 3. Prevent reinvasion of the targeted weed or invasion of other noxious species.

Page 171 of the Draft EIR has been revised as follows:

- Plan-related fuel reduction treatments activities in oak-bay woodland habitat could spread a pathogen fungus *Phytophthora ramorum* or sudden oak death (SOD) from treated areas to areas not yet infected. SOD can impact oaks and other desirable native trees and shrubs. Alameda County, Contra Costa County, and other Bay Area Counties are under quarantine restrictions for SOD. Oak and other host plant material (as defined by the statute cited) may not be moved outside of the quarantine region without specific written certification from the California Department of Agriculture or other authorized agricultural officials (e.g. County Agricultural Commissioners).¹ The following measures shall be followed when working in oak-bay woodland to reduce the spread of SOD:
 - District staff shall consult with the appropriate County Agricultural Commissioners, and implement Best Management Practices (BMPs) for treatments in infected oak-bay woodlands to minimize the risk of spreading this fungus to uninfected areas.

¹ California Department of Food and Agriculture. 2008. Plant Quarantine Manual Section 3700. Oak Mortality Disease Control. State Miscellaneous Ruling.

- ~~District staff and subcontractors shall~~ ~~Personnel should~~ be informed of the presence of SOD and instructed to prevent unauthorized movement of host plant debris, soil, or mud and these resource guidelines concerning SOD.
- If dead or diseased host plants are removed from a treatment area, infected plant material shall be contained and moved for disposal off-site within the quarantine region in an area where SOD would not contact uninfected woody vegetation as specified by a permit issued by the authorizing agricultural compliance officer.
- No host plant material shall be moved outside of the quarantine region which includes Contra Costa and Alameda County.
- If cut trees are to be left onsite for chipping or burning, they should be felled in a manner that minimizes subsequent transport, disturbance, and contact with adjacent oak-bay woodlands.
- Clean equipment, vehicles and shoes of host plant debris, soil or mud that could spread infected soil when entering or leaving an infected oak-bay woodland treatment area. Shoes should be cleaned with Lysol or bleach. Vehicles should be inspected to ensure they are clean prior to leaving an infected area.
- Conduct treatments when the soil is dry (June-October). Avoid treatments in wet weather when soils are saturated (November-May).

Page 174 of the Draft EIR is revised as follows:

(12) Proposed Strategic Fire Route and Invasive Plant Species. Construction and maintenance of the proposed new strategic fire route in Claremont Canyon (per Figure III-5 and Plan Guidelines 1.9) could require the permanent removal of up to 0.2 acres of California annual grassland, 1.6 acres of xeric coastal scrub, 0.2 acres of coyote brush scrub, and 0.6 acres of oak-bay woodland, and could cause potential indirect impacts on downstream aquatic habitats, and potential impacts on nesting birds.

Page 175 of the Draft EIR is revised as follows:

Mitigation Measure BIO-3: The following procedures shall be implemented when constructing and maintaining ~~a new~~ strategic fire routes:

- The ~~road~~ shoulders of strategic fire routes shall be revegetated with a native grass seed mix, as approved by EBRPD Stewardship Department, to provide a competitive cover to minimize colonization by invasive non-native species.
- While maintaining ~~road~~ shoulders of strategic fire routes for fuel reduction and defensible space, the occurrence of invasive non-native species should be monitored and controlled per the guidelines in the Plan, and especially Appendix G: Prescriptions For the Control of Invasive Plant Species and Noxious Weeds. (LTS)

Page 190 of the Draft EIR has been revised as follows:

³² Seidelman Associates, ~~1989~~1985, The Effects of Land and Vegetative Management on the Stability of Slopes Along the Wildland/Urban Interface Wildcat Canyon and Tilden Regional Parks, August 1.

Page 192 of the Draft EIR is revised as follows:

Mitigation Measure GEO-1: Prior to implementation of any proposed vegetation removal activity, the recommended treatment area shall be screened for potential landslide activation risk using the following procedure:

- 1) EBRPD staff shall refer to:
 - The most currently available landslide mapping from the United States Geologic Survey or the California Geological Survey for the Study Area (for example, the USGS, 1997, Summary Distribution of Slides and Earth Flows in the San Francisco Bay Region, California. OFR 97-745c);
 - GIS slope steepness mapping for the Study Area.
- 2) If all of the following criteria are satisfied then no further action to address potential landslide activation would be required:
 - The area to be treated within the recommended treatment area is located in an area listed as “stable”, “few landslides”, or equivalent;
 - The average slope steepness of the recommended treatment area is less than 10 degrees (about 18 percent);
 - There is no visible evidence of landslide activity (e.g., scarps, crooked trees, landslide-generated debris piles) within the recommended treatment area, as documented by a field reconnaissance; and
 - There are no habitable structures within 100 feet of the toe of the slope downgradient of the recommended treatment area.
- 3) EBRPD staff shall determine whether to retain a qualified professional (e.g., engineering geologist or geotechnical engineer) to conduct a geotechnical reconnaissance (on a case-by-case basis) to evaluate the potential impacts of fuel reduction activities or vegetation type conversion on future landslide potential if:
 - Habitable structure(s) are located within 100 feet of the toe of the slope downhill of the treatment area, and
 - The prescribed treatment would include the use of heavy equipment or machinery and significant ground disturbing activities (i.e., this requirement would not apply to methods such as hand treatment, weed-eating, or chemical treatment), and one or more of the following conditions is identified:

- The treatment area is listed as “unstable”, “many landslides” on applicable slope stability mapping, or
- The average slope steepness of the treatment area is greater than 10 degrees (about 18 percent); or
- There is visible evidence of landslide activity (e.g., scarps, crooked trees, landslide-generated debris piles) within the treatment area, as documented by a field reconnaissance,

All recommendations of the qualified professional (which may include avoidance of the proposed activity) shall be documented in writing, provided to EBRPD, and implemented to the degree necessary to reduce or avoid the potential for landslides and slope instability associated with fuel reduction activities as determined by EBRPD staff. (LTS)

Pages 202 through 204 of the Draft EIR are revised as follows:

Plan Chapter IV. Fuel Reduction Methods

Best Management Practices for Hand Labor Methods - Water Quality

- Treatment actions shall ~~should~~ not be conducted during storms.
- Treatment actions shall ~~should~~ avoid, when feasible, excessive foot traffic on steep slopes which could cause compaction and/or erosion to occur.
- Hand labor personnel shall ~~should~~ avoid driving support and haul trucks off established roads. If such traffic is determined by EBRPD and hand labor personnel to be necessary, inspection will be conducted to ensure that the ground is not saturated prior to traveling off-road, and that the ground can fully support the vehicles without excessive rutting of surface soils. Any ruts created as a result of off-road activities will be repaired and covered with mulch and/or wood chips to reduce potential runoff from these areas and reduce their potential for erosion.
- Hand labor personnel shall ~~should~~ take care to handle fuels and lubricants such that spilling and runoff of these substances does not occur.

Best Management Practices for Mechanical Treatment - Water Quality

Mechanical treatment techniques generally result in increased ground disturbance relative to hand labor techniques, and therefore require the use of additional BMPs to mitigate potential effects. For all mechanical treatment actions that could result in substantial ground disturbance, EBRPD will implement erosion control BMPs that are consistent with the San Francisco Bay Regional Water Quality Control Board’s standards. Based on site-specific conditions and the type of treatment action proposed, EBRPD and its contractors should consider one or more of the following BMPs, at a minimum to be included in any necessary erosion control plan, where mechanical treatment techniques will be used for fuel management:

- Use caution when conducting any mechanical treatment actions during the area’s rainy season. Treatment actions shall ~~should~~ be stopped temporarily if rainfall or other inclement weather makes access inadvisable, or if continued vehicular travel or mechanical action is determined to cause unacceptable damage to roads, trails, or other lands.

- Surveys ~~shall~~ ~~should~~ be conducted that identify and delineate on-site soil and hydrological conditions prior to initiation of any mechanical treatment techniques. Any planned mechanical treatment actions ~~shall~~ ~~should~~ include all necessary measures to minimize activity in sensitive areas that could be wetter than normal, or in areas near hydrological resources. Wet areas will be clearly marked for high visibility and avoided by treatment operations until such time as they are determined to be sufficiently capable of supporting any mechanical treatment activities without causing excess rutting, erosion, or sedimentation to occur.
- All mechanical treatment actions ~~shall~~ ~~should~~ use equipment, methods, and/or techniques that minimize alterations to the existing soil structure.
- Heavy equipment use (e.g., tractor-based yarding activities) ~~shall~~ ~~should~~ be concentrated at primary skid trails and landings. Skidding ~~shall~~ ~~should~~ be allowed only along clearly designated skidding trails. Mechanical treatment actions ~~shall~~ ~~should~~ be temporarily stopped and alternative treatment or removal methods considered if a single pass of equipment produces ruts deeper than 6 inches across a significant area of the site beyond primary skid trails and landings.
- Materials ~~shall~~ ~~should~~ not be dragged across park roads and drainage areas unless specifically allowed by EBRPD, and only then along routes recommended by equipment operators and approved by EBRPD. These routes ~~shall~~ ~~should~~ be created to minimize the total skidding distance needed; total area occupied by skidding trails should not exceed 15 percent of the treatment area.
- Skid trails ~~shall~~ ~~should~~ not cross streams except where absolutely necessary, and only at locations previously determined by EBRPD staff and included in the site treatment prescription. Trees identified for removal growing near a drainage channel (based on stream type and approved buffer width) ~~shall~~ ~~should~~ be hand-felled perpendicular to the drainage channel rather than cleared using mechanical equipment. These trees ~~shall~~ ~~should~~ only be processed by a skidder where EBRPD determines that the skidder could safely handle the stems at a reasonable distance from the drainage channel based on stream type and approved buffer width; if it is determined that the tree cannot be safely handled by mechanized means at this distance, the tree ~~shall~~ ~~should~~ be lopped and scattered by hand labor treatment or left as a long log. Branches and debris ~~shall~~ ~~should~~ not be felled, loaded, skidded, or hauled across any stream or watercourse unless EBRPD approves such a measure. No drainage channel with running or standing water ~~shall~~ ~~should~~ be crossed by mechanical equipment while water is present to avoid runoff and contamination from vehicle use as well as rutting and erosion. Crossing ~~shall~~ ~~should~~ not occur until the drainage completely dries out.
- Personnel will avoid driving support and haul trucks off of established roads. Where this is necessary, personnel ~~shall~~ ~~should~~ ensure that the ground is not saturated before traveling off-road and that the ground can support the vehicles without excessive rutting. Any ruts created ~~shall~~ ~~should~~ be repaired and covered with mulch and/or wood chips.
- Personnel will install and use waterbars, brush barriers, vehicle turnouts, or other methods as needed to control and capture potential runoff resulting from mechanical treatment actions. Other methods for controlling and capturing potential runoff could include broad-based dips, creating ditchlines inside of current drainage patterns (i.e., closer to treatment actions to capture runoff prior to reaching the drainage area), cross-drains, filter areas, sediment traps or pits, silt fences, hay bales, check dams or the in/outslowing and crowning of roads.

- All solid waste and trash generated by any treatment actions must be removed from the treatment site and organic waste (such as removed trees) must be disposed of at a commercial recycling or composting facility (and not at a landfill) as approved by the District. Leftover materials can create a water pollution risk if they remain onsite and are later washed into water bodies through runoff.
- Maintain all roads in a desirable condition to prevent problems that may result from their use, such as washouts, slumping, clogging or bending culverts, and drainage erosion. Any damages that occur to roads as a direct result of treatment actions shall ~~should~~ be repaired upon completion of the treatment action.
- Upon abandonment of an access road or skid trail, all refuse and unstable fill material must be removed and road banks restored to original contours. Road banks must also be revegetated or have permanent waterbars installed.
- Refueling areas will be designated for larger projects requiring mechanical treatment actions. Fuel tanks and refueling areas will be provided with secondary containment, where feasible. Materials and supplies needed to promptly clean up spills will be adequately maintained and located onsite, and personnel will be familiar with proper cleanup and disposal techniques. Examples of containment and cleanup methods and materials include using drip pans and absorbent pads for all vehicle and equipment fueling; equipping all fuel nozzles with automatic shut-off capability to contain fuel dripping and leakage; ensuring all vehicle fueling operations are not left unattended; inspecting vehicles and equipment each day to identify any fuel, oil, or hydraulic leaks; and repairing any identified leaks immediately prior to further use or storage of the leaking equipment to minimize further impact to the site. Vehicles with persistent or recurring leaks will be removed from the site until such leaks are properly repaired. Onsite fueling of vehicles and equipment will only be performed when offsite fueling is determined by EBRPD to be impractical.

Best Management Practices for Chemical Treatment - Water Quality

- EBRPD and its contractors will ensure that any pesticide or other chemical applications are performed only by licensed or certified pest control operators registered to perform such services in the County where the treatment is to take place, and only under a prescription prepared by a licensed pesticide advisor. The pest control operator must record and provide written accounts of the total amount of pesticides and other chemicals applied each month, as well as type(s) of pesticides or chemicals used and total areas treated with each pesticide or other chemical. These data must be reported to the County Agricultural Commissioner as well as to EBRPD's IPM Program. Operators must maintain accurate and calibrated application equipment to ensure correct amounts of pesticides and other chemicals are applied.
- Any chemical treatment actions must be performed according to EBRPD integrated pest management (IPM) policies and practices; pest control operators selected by EBRPD or its contractors shall ~~should~~ consult and use the advice and recommendations of EBRPD integrated pest management specialists and adhere to EBRPD pest management guidelines. For example, species-specific (instead of broad-spectrum) herbicides shall ~~should~~ be used wherever possible to avoid injury to non-target plants.
- EBRPD IPM specialists will oversee chemical application practices to ensure compliance with State and federal regulations and EBRPD IPM policies. Pesticide application prescriptions will include suitable distances from wetlands and water

bodies, in compliance with the California Department of Food and Agriculture Regulations and State-approved product labeling; the IPM Specialist will review application data to ensure the minimum amount of suitable chemicals are used during treatment actions to achieve the desired results.

Best Management Practices for Prescribed Burning - Erosion Control

- Personnel ~~shall~~ ~~should~~ ensure that ground cover is retained on 60 percent of the ground surface to prevent soil displacement from rain impact and to allow precipitation to absorb into the ground; where feasible, fire ~~shall~~ ~~should~~ not be allowed to burn sufficiently hot that the duff layer is destroyed. Actions ~~shall~~ ~~should~~ attempt to retain more groundcover in areas within 50 feet of a downslope water body. When water soaks into the ground there is less chance that it will run off and cause erosion into and around water bodies.
- Actions will include maintenance of buffer areas between the burn zone and nearby water bodies. Prescribed fires will not be actively ignited within the vegetative buffer zone. A minimum vegetation buffer of 25 feet ~~shall~~ ~~should~~ be maintained between burn areas and downslope water bodies for slopes under 5 percent, a 75-foot buffer between burn areas and water bodies for 5-10 percent slopes, and a 150-foot buffer for slopes over 10 percent. In most cases, fire can be allowed to “back” into riparian zones; however, no ignition ~~shall~~ ~~should~~ take place in the stream environment zone (i.e., the stream, its riparian corridor and adjacent marshes and wet meadows). High-intensity burns ~~shall~~ ~~should~~ be kept away from creeks and drainage buffer zones unless suitable measures, as determined by EBRPD, are used to ensure protection of water quality.
- Personnel will minimize the risk of erosion into water bodies from fire lines by:
 - Using existing barriers such as roads, trails, or wet lines as fire lines to minimize soil disturbance.
 - Constructing fire lines along the contour and avoiding straight up/downhill placement.
 - Establishing erosion control BMPs like water bars, turnouts, and sediment traps.
 - Fire lines must be restored upon completion of the prescribed burn if they are determined not to be used again. Erosion controls features must be placed, as necessary, to minimize the potential for additional impacts.
- Torch fuels will be mixed, and torches filled, only in designated fueling areas to isolate potential areas that could be affected by hazardous materials spills.

Best Management Practices for Grazing

- Livestock will generally be excluded from riparian areas. Only during limited circumstances and under the supervision of qualified personnel ~~shall~~ ~~should~~ livestock be used to reduce fuel loads in riparian areas.
- Livestock grazing will be closely monitored to determine when performance criteria are achieved. Once goals and desired fuel loads have been reached, livestock ~~shall~~ ~~should~~ be removed in a timely manner to avoid overgrazing and/or excessive hoof traffic.

- Inspections will occur with regular frequency and ~~shall should~~ pay particular attention to areas where bare ground is being exposed. Inspections ~~shall should~~ also note areas where animals are developing worn trails. Where excessive wear is occurring, livestock ~~shall should~~ be moved to other areas and alternative treatment methods considered if fuel reduction requirements have yet to be sufficiently reached.

Page 209 of the Draft EIR has been revised as follows:

On July 7, 2006, and August 30, 2007, Ms. Debbie Pilas-Treadway, NAHC Environmental Specialist III, responded by faxed letter that “A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area.” ~~the Sacred Lands File did not indicate the presence of Native American cultural resources in the Study Area.~~ On September 5, 2007, LSA spoke to Ms. Helen Lore, Board Member of the ACHS. Ms. Lore stated that neither she nor her organization had any comments or concerns about the project. Ms. Betty Maffei, Director of CCHS, stated in a phone call on June 29, 2006 that neither she nor the CCCHS had any other concerns about the project or Study Area, but supports EBRPD efforts to reduce fire risk by managing fuels on their lands.

Page 210 of the Draft EIR has been revised as follows:

(1) Prehistory and Ethnography. Research indicates that California was probably settled by native Californians between 12,000 and 6,000 years ago. Penutian peoples migrated into central California around 4,500 years ago ~~and were firmly settled around San Francisco Bay by 1,500 years ago.~~ The descendants of the native groups who lived between the Carquinez Strait and the Monterey area are the Ohlone, although they are often referred to by the name of their linguistic group, Costanoan.

Page 211 of the Draft EIR has been revised as follows:

These settlers established the mission system and exposed the Ohlone to diseases to which they had no immunity. Mission San Francisco de Assisi (Mission Dolores) was founded in 1776, and drew Ohlone from the entire Bay Area. Mission Santa Clara, just outside of San Jose, was founded in 1777, and Mission San Jose was founded in 1797. Many East Bay Native Americans, particularly those of eastern Alameda County and Contra Costa County, went to Mission Santa Clara. Mission records list the Huichun at Mission San Francisco between 1794 and 1805. The Jalquin and the Saclan appear in Mission San Francisco records in 1801-1803, although the Bay Miwok were listed as a group beginning in the 1790s. Following the disbanding of the missions in 1834, native people in the Bay Area moved to ranchos, where they worked as manual laborers.

Page 227 of the Draft EIR is revised as follows:

Best Management Practices for Prescribed Burning - Cultural Resources

- Cultural resources, both archaeological and those in the built environment, are fire-sensitive sites. Therefore, EBRPD or its contractors will ensure that recorded cultural resource sites are provided with appropriate protection during any prescribed burn. This may include conducting a pre-burn site assessment prior to any initial prescribed burn action on a site. The locations of any previously unrecorded cultural resources exposed by burning actions will be mapped and documented. All activities ~~should~~ shall be planned and executed in such a way as to ~~cause the least amount of~~ ensure that any impacts on cultural sites are reduced to less-than-significant levels.
- EBRPD or its contractors ~~will~~ shall exclude any fire-sensitive cultural sites within prescribed burn areas by constructing hand lines within the burn area or clearly delineating the boundaries of the burn area such that all fire-sensitive cultural resources are fully excluded. This exclusion ~~should~~ shall be done shortly before the prescribed burn, and the hand lines removed immediately following to minimize potential risk of resource vandalism. Any digging, surface disturbance, or displacement of soil and vegetation within cultural sites must be avoided. Any mechanical equipment used prior to, during, or following the prescribed burn must be excluded from the cultural site. Foot traffic ~~should~~ shall be minimized on the cultural site such that the least amount of potential impact is caused. During prescribed burns, onsite personnel ~~will~~ shall closely monitor fire movement near cultural resources and ensure that fires do not cross into fire-sensitive cultural resource areas.
- All onsite personnel ~~should~~ shall be adequately informed and knowledgeable of the location of known cultural sites within and around the prescribed burn area. Personnel ~~will~~ shall also be sufficiently knowledgeable of proper treatment actions that can be applied at cultural sites. The Incident Commander ~~will~~ shall provide briefings and supervision to prevent potential disturbance of cultural sites.
- Following the completion of prescribed burning actions, all means of delineating site locations must be removed, and any hand lines or other features to identify the cultural sites must be obliterated.
- EBRPD ~~will~~ shall exclude livestock from the vicinity of documented cultural resources deemed to be sensitive to grazing activities (e.g., a recorded site with human remains or midden).

Pages 229 to 230 of the Draft EIR have been revised as follows:

Mitigation Measure CULT-1: During project-related ground disturbing activities, should human remains or associated burial goods be encountered the steps required by *CEQA Guidelines* §15064.5(e) and Health and Safety Code §7050.5

shall be taken. Pursuant to these sections, and to the EBRPD's Cultural Resources Policy, the on-site EBRPD supervisor, or their designee, shall: (1) halt work within 50 feet of the remains; (2) contact the Alameda or Contra Costa County coroners; and (3) contact an archaeologist to evaluate the remains and provide recommendations.

If the remains are of Native American origin, the archaeologist will provide a preliminary assessment of the eligibility of ~~evaluate~~ the remains for California Register of Historical Resources (California Register) eligibility, and shall do so in a non-invasive manner that does not involve ground disturbance. The remains shall be considered as a part of an archaeological deposit for the purposes of assessing the overall site's archaeological values; this will be separate from, and not superior to, consideration of the remains as possessing cultural significance for descendant communities. ~~The~~ coroner will contact the Native American Heritage Commission in Sacramento, which will in turn identify a Most Likely Descendent (MLD). The MLD shall be provided the opportunity to make recommendations for the respectful treatment of the Native American remains and any related burial goods. At this time, the archaeologist shall, in consultation with the MLD, undertake ground disturbing investigations of the remains and associated deposits to determine their eligibility. If the remains are eligible for the California Register, the archaeologist shall recover scientifically valuable information, as appropriate and in accordance with the recommendations of the MLD. Following the archaeologist's evaluation, a report should be prepared to document the methods, findings, and recommendations of the archaeologist conducting the work. The report should be submitted to EBRPD and the Northwest Information Center. (LTS)

Pages 259 to 260 of the Draft EIR have been revised as follows:

~~There is currently no CEQA statute, regulation, or judicial decision that requires an EIR to analyze the GHG emissions of a project, or whether a project will have a significant impact on global warming. However, Senate Bill 97 directed the Governor's Office of Planning and Research (OPR) to develop CEQA Guidelines to address GHG emissions. OPR is required to prepare, develop, and transmit these guidelines on or before July 1, 2009 and the Resources Agency is required to certify and adopt them by January 1, 2010. In April 2009, proposed CEQA Guideline amendments released by OPR included information on GHG emissions as a separate consideration and whether a project would generate GHG emissions, either directly or indirectly, such that a significant impact to the environment is created. The proposed CEQA amendments currently state that a lead agency has discretion on whether to use a model or qualitative analysis to determine significance of a project's greenhouse gas emissions.~~

On December 30, 2009, the California Natural Resources Agency adopted CEQA Guidelines Amendments related to Climate Change. These amendments become effective on March 18, 2010, and state that the "lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or

methodology to quantify greenhouse gas emissions resulting from a project...and/or (2) Rely on a qualitative analysis or performance based standards.” The qualitative analysis presented in this EIR considers the Plan’s consistency with the State goals and plans, including fuel reduction goals, to minimize the frequency and magnitude of catastrophic fires and associated GHG emissions. Additional details concerning the potential for cumulative impacts associated with greenhouse gas emissions are provided in Chapter VI. CEQA-Required Assessment Conclusions.

Page 264 of the Draft EIR is revised as follows:

~~The Plan provides policies, guidelines and recommendations to manage fuels and protect wildlands in a manner consistent with State strategies and long term climate goals. While some of these activities (e.g., tree removal and prescribed burning) may appear to conflict with short term GHG emission reduction goals, the State and District expect that there will be reductions in long term overall emissions (associated with catastrophic and damaging wildfires) and larger net gains in vegetation health.² Tree removal and thinning or brush clearing may cause short term emissions (through the use of vehicles to transport personnel and mechanical equipment) and loss of some carbon sequestered in vegetation, but these emissions are expected to be offset by the promotion and regeneration of native and low fire hazard vegetation and growth and wood products. The activities identified in the Plan are intended to reduce the frequency and severity of wildfires, and as a result, CO₂ emissions will be reduced and more carbon will ultimately remain in wildland biomass in the cumulative condition. However, quantifying the specific GHG benefits associated with avoiding wildfire through fuels treatment would be speculative and is difficult because of the unpredictable nature of fire.~~

~~The Plan would not conflict with or impede implementation of reduction goals identified in AB 32, the Governor’s Executive Order S 3-05, and other strategies to help reduce GHGs to the level proposed by the Governor. In addition, the Plan would also be subject to all applicable regulatory requirements, which would also reduce the GHG emissions of the project. With implementation of those elements, the Plan’s contribution to cumulative GHG emissions would be less than significant.~~

There is an emerging view among scientists that fire hazard mitigation (e.g., through vegetation treatments or prescribed fire)³ may be able to play a beneficial role in long-term forest carbon sequestration, emissions reductions, and climate change mitigation; however, the specifics of where and how this can achieve the greatest effect are still open questions. The CalFire strategies were recognized by

² California Board of Forestry and Fire Protection. 2008. *Draft Report to ARB on Meeting AB 32 Targets*. August 20.

³ Wiedinmyer, Christine and Hurteau, Matthew. University Corporation for Atmospheric Research. 2010. *Prescribed Fire as a Means of Reducing Forest Carbon Emissions in the Western United States*. [Environmental Science and Technology](#). March 16.

the Governor's Climate Action Team reports and by the Air Resources Board in the AB 32 Scoping Plan. The Plan is consistent with CalFire Forestry strategies and will reduce greenhouse gases in the long term consistent with AB 32. As discussed further in Chapter VI of this EIR document, the Plan would not conflict with any applicable regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Therefore, the Plan's contribution to cumulative GHG emissions would be less than significant.

Table IV.E-1: Cultural Resources Identified in the Study Area on pages 232 to 238 of the Draft EIR has been revised and is included in subsequent pages of this Response to Comments Document.

Chapter V. Alternatives on pages 307 to 312 has been revised and is included in subsequent pages of this Response to Comments Document.

Chapter VI. CEQA-Required Assessment Conclusions, C. Cumulative Impacts, pages 315 to 323 of the Draft EIR, has been revised and is included in subsequent pages of this Response to Comments Document.

Page 326 of the Draft EIR has been revised as follows:

Amme and Havlik, 1985. *An Ecological Assessment of Arctostaphylos pallida Eastw., Alameda and Contra Costa Counties*. The Four Seasons 7(4):28-46. East Bay Regional Park District, Oakland, CA.

Amme, D, 2004. *Grassland Heritage: Stewardship of a Changed Landscape*. Bay Nature April-June 2004. Available online:
http://www.baynature.com/2004apriljune/v04n02_grassland.html

~~Amme, D. and N. Havlik, 1987. *An Ecological Assessment of Arctostaphylos pallida Eastw., Alameda and Contra Costa Counties*. The Four Seasons 7 (4): 28-46. East Bay Regional Park District, Oakland, CA.~~

Amme and Havlik, 1987. *Assessment and Management of Arctostaphylos pallida Eastwood*. Pp. 447-453 In: Elias, T. [ed] *Proceedings of a California Conference on the Conservation and Management of Rare and Endangered Plants*. California Native Plant Society, Sacramento, Calif

Amphion Environmental, Inc, 1995. *Fire Hazard Mitigation Program and Fuel Management Plan for the East Bay Hills*, May.

Archaeological Consulting and Research Services, Inc., n.d. Mill Valley, California.

Archaeological Consulting and Research Services, Inc., n.d. *Report of the Archaeological Reconnaissance of the Proposed Mountain Village Developments, Alameda County, California*. Mill Valley, California.

Page 333 of the Draft EIR has been revised as follows:

~~McBride, J.M., 1974. Plant succession in the Berkeley Hills. *Madroño* 22(3):317-329.~~

McBride, J.R., 1974. Plant succession in the Berkeley Hills, California. *Madroño* 22 (7):317-329.

~~McBride, J.R. and H.F. Heady, 1968. Invasion of grassland by *Baccharis pilularis* DC. *J. Range Management* 21:106-108.~~

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Page 335 of the Draft EIR has been revised as follows:

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~~Seidelman Associates, 1989, The Effects of Land and Vegetative Management on the Stability of Slopes Along the Wildland/Urban Interface Wildcat Canyon and Tilden Regional Parks, August 1.~~

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Shannon, Peggy, 1990. M.A. thesis, Sonoma State University, Rohnert Park, California.

Appendix E which includes the full text of Measure CC and supporting information for the Draft EIR is included in the subsequent pages.

Table IV.E-1: Cultural Resources Identified in the Study Area

EBRPD #	Primary #	Trinomial	HPD #	Resource Name/Description	Park ^a	County	Comments
achs001	N/A	N/A	N/A	Grass Valley farming and ranch site	AC	ALA	
achs002	N/A	N/A	N/A	Peterson/Aleyss homestead site	AC	ALA	
achs003	N/A	N/A	N/A	Big Bear riding stables site	AC	ALA	
achs004	N/A	CA-ALA-434H	N/A	Grass Valley ranch site - big trees	AC	ALA	
achs005	N/A	CA-ALA-435H	N/A	Stonebridge site	AC	ALA	
achs006	N/A	N/A	N/A	Homesite (1899)	AC	ALA	
achs007	N/A	N/A	N/A	Pinehurst watershed caretaker residence	AC	ALA	
achs008	N/A	N/A	N/A	Marciel Family homestead site	AC	ALA	
achs009	N/A	N/A	N/A	Homesite	AC	ALA	
achs010	N/A	N/A	N/A	Homesite	AC	ALA	
achs011	N/A	N/A	N/A	Homesite	AC	ALA	
achs012	N/A	N/A	N/A	Bort Meadow eucalyptus	AC	ALA	
achs015	N/A	N/A	N/A	"Possible" ranch building site	AC	ALA	
achs016	N/A	N/A	N/A	Buried bridge buttress	AC	ALA	
achs017	N/A	N/A	N/A	Homesite (1899)	AC	ALA	
achs018	P-01-002185	CA-ALA-580H	N/A	Fence	AC	ALA	
achs019	P-01-000158	CA-ALA-436H	N/A	Grass Valley Trail	AC	ALA	
achs020	P-01-002180	N/A	N/A	Grass Valley Bridge	AC	ALA	Concrete bridge faced with stone
acna021	N/A	CA-ALA-422	N/A	Bedrock mortars/cupules	AC	ALA	
bkhs011	N/A	N/A	N/A	Quarry Site and Artifacts	BK	CCO	
bkhs012	N/A	N/A	N/A	Sunken Sailing Barges	BK	CCO	
bkhs013	N/A	N/A	N/A	Island Historic Farming Features	BK	CCO	
bkna001	P-07-000168	CA-CCO-290	N/A	[Shellmound]	BK	CCO	
bkna002	P-07-000169	CA-CCO-291	N/A	[Shellmound]	BK	CCO	
bkna003	N/A	N/A	N/A	[Shellmound]	BK	CCO	
bkna004	N/A		N/A	[Shellmound]	BK	CCO	
bkna005	P-07-000169	CA-CCO-291	N/A	[Shellmound]	BK	CCO	Same site number as bkna002
bkna006	P-07-000167	CA-CCO-289	N/A	[Shellmound]	BK	CCO	
bkna007	P-07-000170	CA-CCO-292	N/A	[Shellmound]	BK	CCO	
cbhs001	N/A	N/A	N/A	Glory of the Seas/Crab Cove Maritime	CB	ALA	
cbhs002	N/A	N/A	N/A	Blackie, Maritime Mascot Gravesite	CB	ALA	
cbhs003	N/A	N/A	N/A	Memory Lane	CB	ALA	
cbhs004	N/A	N/A	N/A	Neptune Beach Site	CB	ALA	
cbhs005	N/A	N/A	N/A	Dirigible Anchor/Maritime School	CB	ALA	
cchs001	P-01-002183	CA-ALA-579H	N/A	Fence	CC	ALA	
cchs002	P-01-000039	CA-ALA-019	N/A	Contemporary rockcarving	CC	ALA	
eshs001	P-07-002554	N/A	N/A	Point Fleming Pier	ES	ALA	P-07-002554 superceded by P-01-010617 (ALA County)
kehs001	N/A	N/A	N/A	Former CCC campsite	KG	CCO	
kghs002	N/A	N/A	N/A	Oakland/Orinda railroad bed	KG	CCO	Listed in California Inventory of Historic Resources; California Point of Historical Interest
lchs001	P-01-00039	CA-ALA-423H	N/A	Yema-Po	LC	ALA	Chinese village site
lchs002	N/A	N/A	N/A	Slate House	LC	ALA	
lchs003	N/A	N/A	N/A	Lake Chabot and Chabot Dam	LC	ALA	Listed in California Inventory of Historic Resources; California Point of Historical Interest; Historic Civil Engineering Landmark
lchs004	N/A	N/A	N/A	Cork oak tree	LC	ALA	

Table IV.E-1 *Continued*

EBRPD #	Primary #	Trinomial	HPD #	Resource Name/Description	Park ^a	County	Comments
lchs005	N/A	N/A	N/A	Nike missile silo	LC	ALA	
lchs006	N/A	N/A	N/A	Sand filter plant	LC	ALA	
lchs007	N/A	N/A	N/A	Tunnel no. 3	LC	ALA	
lchs008	N/A	N/A	N/A	Filter pond no. 1	LC	ALA	
lchs009	N/A	N/A	N/A	Filter pond no. 2	LC	ALA	
lchs010	N/A	N/A	N/A	Nike missile silo	LC	ALA	
lchs011	N/A	N/A	N/A	Nike site kennels	LC	ALA	
lchs012	N/A	N/A	N/A	Nike site bldg - carpentry shop	LC	ALA	
lchs013	N/A	N/A	N/A	Nike site bldg	LC	ALA	
lchs014	N/A	N/A	N/A	Nike site bldg - auto maintenance shop	LC	ALA	
lchs015	N/A	N/A	N/A	Nike site bldg - public safety	LC	ALA	
lchs016	N/A	N/A	N/A	Nike site bldg	LC	ALA	
lchs017	N/A	N/A	N/A	Nike site bldg - storage	LC	ALA	
lchs018	N/A	N/A	N/A	Nike site bldg - pump house	LC	ALA	
lchs019	N/A	N/A	N/A	Nike site bldg - Lake Chabot office	LC	ALA	
lchs105	N/A	N/A	N/A	Nike launch site	LC	ALA	
lchs106	N/A	N/A	N/A	Nike radar site	LC	ALA	
lehs001	P-01-002181	CA-ALA-577H	N/A	Hunting cabin	LCn	ALA	
lehs002	N/A	N/A	N/A	McKell Cottage	LCn	ALA	
mkhs001	N/A	N/A	N/A	Bernardi Residence	MK	CCO	
mkhs002	N/A	N/A	N/A	False gun emplacements	MK	CCO	
mkhs003	N/A	N/A	N/A	Nicholl Knob	MK	CCO	
mkhs004	N/A	N/A	N/A	Santa Fe bldgs, steam rooms, etc.	MK	CCO	
mkhs005	N/A	N/A	N/A	Ferry Pt. Pier	MK	CCO	
mkhs007	P-07-000785	N/A	N/A	Bray Property	MK	CCO	
mkna006	N/A	CA-CCO-285	N/A	[Shellmound]	MK	CCO	
mkna008	N/A	CA-CCO-287	N/A	[Shellmound]	MK	CCO	
mlhs001	N/A	N/A	N/A	Arrowhead Marsh	ML	ALA	
mlhs002	N/A	N/A	N/A	Damon Marsh	ML	ALA	
mlhs003	N/A	N/A	N/A	WWII sunken ships (3 Sites)	ML	ALA	
mlhs004	N/A	N/A	N/A	California's first migratory bird reserve	ML	ALA	
pphs001	N/A	N/A	N/A	Main office safe footing	PP	CCO	
pphs048	N/A	N/A	N/A	No. 1 Nitrating House	PP	CCO	
pphs061	N/A	N/A	N/A	"Site of Giant Powder Co." Monument	PP	CCO	
pphs066	N/A	N/A	N/A	Gelatine mix house	PP	CCO	
pphs077	N/A	N/A	N/A	No. 2 Hall Punch House	PP	CCO	
pphs083	N/A	N/A	N/A	Magazine area office	PP	CCO	
pphs084	N/A	N/A	N/A	Gelatine magazine	PP	CCO	
pphs085	N/A	N/A	N/A	Dynamite magazine	PP	CCO	
pphs088	N/A	N/A	N/A	Old wharf	PP	CCO	
pphs100	N/A	N/A	N/A	Giant Powder Site	PP	CCO	
pphs110	N/A	N/A	N/A	Export magazine	PP	CCO	
pphs128	N/A	N/A	N/A	Testing laboratory	PP	CCO	
pphs191	N/A	N/A	N/A	Hospital	PP	CCO	
pphs222	N/A	N/A	N/A	Recreation hall	PP	CCO	

Table IV.E-1 *Continued*

EBRPD #	Primary #	Trinomial	HPD #	Resource Name/Description	Park ^a	County	Comments
pphs317	N/A	N/A	N/A	Black powder rumbler	PP	CCO	
pphs340	N/A	N/A	N/A	No. 1 Hall Punch House	PP	CCO	
pphs425	N/A	N/A	N/A	Nitro di biazzi building	PP	CCO	
pphs500	N/A	N/A	N/A	Sobrante to Nitro rail spur	PP	CCO	
pphs501	N/A	N/A	N/A	Giant Station to "Old" Line spur	PP	CCO	
pphs502	N/A	N/A	N/A	Giant Station to warehouses spur	PP	CCO	
pphs504	N/A	N/A	N/A	Dynamite line	PP	CCO	
pphs505	N/A	N/A	N/A	Gelatin line	PP	CCO	
pphs506	N/A	N/A	N/A	"Old" Line	PP	CCO	
pphs507	N/A	N/A	N/A	Black powder line	PP	CCO	
pphs508	N/A	N/A	N/A	Magazine area lines	PP	CCO	
pphs510	N/A	N/A	N/A	Safety area line	PP	CCO	
pphs511	N/A	N/A	N/A	Powder line	PP	CCO	
pphs550	N/A	N/A	N/A	Giant Post Office	PP	CCO	
pphs551	N/A	N/A	N/A	Giant Station	PP	CCO	
pphs552	N/A	N/A	N/A	Sobrante Station	PP	CCO	
pphs605	N/A	N/A	N/A	[unnamed Black Powder]	PP	CCO	
pphs624	N/A	N/A	N/A	Boarding house	PP	CCO	
pphs629	N/A	N/A	N/A	Powder burn area	PP	CCO	
pphs630	N/A	N/A	N/A	Safety Nitro (1892)	PP	CCO	
pphs633	N/A	N/A	N/A	Steel water tank and tower	PP	CCO	
pphs704	N/A	N/A	N/A	"horseshoe" monument	PP	CCO	
pphs705	N/A	N/A	N/A	tenant house 3	PP	CCO	
pphs706	N/A	N/A	N/A	tenant house 2	PP	CCO	
pphs707	N/A	N/A	N/A	tenant house 1	PP	CCO	
pphs709	N/A	N/A	N/A	Bowling alley	PP	CCO	
pphs711	N/A	N/A	N/A	Petrich's Saloon	PP	CCO	
pphs712	N/A	N/A	N/A	Ethnic Lodge	PP	CCO	
pphs713	N/A	N/A	N/A	Foundation	PP	CCO	
pphs714	N/A	N/A	N/A	Ethnic lodge	PP	CCO	
pphs715	N/A	N/A	N/A	Dump	PP	CCO	
pphs716	N/A	N/A	N/A	Foundation & berm	PP	CCO	
pphs717	N/A	N/A	N/A	Foundation	PP	CCO	
pphs718	N/A	N/A	N/A	Kearny Ranch Site	PP	CCO	
pphs719	N/A	N/A	N/A	Foundation & berm	PP	CCO	
pphs720	N/A	N/A	N/A	Granite Powder Co.	PP	CCO	
pphs721	N/A	N/A	N/A	Randall Ranch (1860)	PP	CCO	
pphs722	N/A	N/A	N/A	Foundation	PP	CCO	
pphs723	N/A	N/A	N/A	Granite foun. & berm	PP	CCO	
pphs724	N/A	N/A	N/A	Granite foun. & berm	PP	CCO	
pphs725	N/A	N/A	N/A	Granite foun. & berm	PP	CCO	
pphs726	N/A	N/A	N/A	Granite Powder	PP	CCO	
pphs727	N/A	N/A	N/A	Foundation	PP	CCO	
pphs728	N/A	N/A	N/A	Foundation	PP	CCO	
pphs729	N/A	N/A	N/A	Foundation	PP	CCO	

Table IV.E-1 *Continued*

EBRPD #	Primary #	Trinomial	HPD #	Resource Name/Description	Park ^a	County	Comments
pphs730	N/A	N/A	N/A	Foundation	PP	CCO	
pphs731	N/A	N/A	N/A	Foundation	PP	CCO	
pphs732	N/A	N/A	N/A	Foundation	PP	CCO	
pphs733	N/A	N/A	N/A	Foundation	PP	CCO	
pphs734	N/A	N/A	N/A	Foundation	PP	CCO	
pphs735	N/A	N/A	N/A	Foundation	PP	CCO	
pphs737	N/A	N/A	N/A	Foundation	PP	CCO	
pphs738	N/A	N/A	N/A	Black Powder Press	PP	CCO	
pphs739	N/A	N/A	N/A	unknown	PP	CCO	
pphs740	N/A	N/A	N/A	Black Powder (?)	PP	CCO	
pphs741	N/A	N/A	N/A	Black Powder (?)	PP	CCO	
pphs742	N/A	N/A	N/A	[unknown]	PP	CCO	
pphs744	N/A	N/A	N/A	[unnamed Black Powder]	PP	CCO	
pphs745	N/A	N/A	N/A	Black Powder (?)	PP	CCO	
pphs747	N/A	N/A	N/A	[unknown]	PP	CCO	
pphs751	N/A	N/A	N/A	Large Shell Dynamite Hand Pack House	PP	CCO	
pphs757	N/A	N/A	N/A	Croatian Fishing Village-Sobrante	PP	CCO	
pphs758	N/A	N/A	N/A	Chinese Fishing Village-Site	PP	CCO	
pphs759	N/A	N/A	N/A	Gionochios Fishing Resort	PP	CCO	
pphs760	N/A	N/A	N/A	Giant Park/ Sobrante Park	PP	CCO	
pphs761	N/A	N/A	N/A	Trestle Bridge over RR	PP	CCO	
ppna862	P-07-000143	CA-CCO-264	N/A	[Shellmound]	PP	CCO	
ppna863	P-07-000144	CA-CCO-265	N/A	[Shellmound]	PP	CCO	
rdhs001	N/A	N/A	N/A	Blossom Rock redwoods tree site	RW	ALA	Listed in the California Register; California Historical Landmark
rdhs002	N/A	N/A	N/A	Rainbow Trout historic plaque	RW	ALA	Listed in the California Register; California Historical Landmark; CHRIS code: ICL
rdhs003	N/A	N/A	N/A	Redwood stump	RW	CCO	
rdhs004	N/A	N/A	N/A	Redwood stump	RW	CCO	
rdhs005	N/A	N/A	N/A	Redwood stump	RW	CCO	
rdhs006	N/A	N/A	N/A	Sulfur mine	RW	ALA	
rdhs007	N/A	N/A	N/A	Logging mill location	RW	CCO	
rdhs008	N/A	N/A	N/A	Church of the Woods	RW	ALA	
rdhs009	N/A	N/A	N/A	Homesite	RW	ALA	
rdhs010	N/A	N/A	N/A	Big Bear Tavern site	RW	ALA	
rdhs011	N/A	N/A	N/A	Gulch	RW	ALA	
rdhs012	N/A	N/A	N/A	Park residence	RW	ALA	
rdhs013	N/A	N/A	N/A	Orchard	RW	ALA	
rdhs014	N/A	N/A	N/A	Possible homesite	RW	ALA	
rdhs015	N/A	N/A	N/A	Possible mill location	RW	ALA	
rdhs016	P-01-002182	CA-ALA-578H	N/A	Huntfields equestrian area	RW	ALA	Rock/concrete wall enclosures
rdhs017	P-07-000800	N/A	N/A	Historic trash scatter	RW	CCO	
rdhs018	N/A	N/A	N/A	Redwood Peak gravesites	RW	CCO	Two grave stones
rdhs019	N/A	N/A	N/A	Redwood Canyon School	RW	ALA	
rdhs020	N/A	N/A	N/A	Redwood Inn	RW	ALA	
rdhs021	N/A	N/A	N/A	Logging mill locations	RW	ALA	

Table IV.E-1 *Continued*

EBRPD #	Primary #	Trinomial	HPD #	Resource Name/Description	Park ^a	County	Comments
srhs001	N/A	N/A	N/A	Conley House	SB	CCO	
srhs002	N/A	N/A	N/A	Cottage site	SB	CCO	
srhs003	N/A	N/A	N/A	Gas station site	SB	CCO	
srhs004	N/A	N/A	N/A	Quarry with labyrinth	SB	CCO	
srhs101	N/A	N/A	N/A	East Portal Old Claremont Tunnel	SB	CCO	
srna004	P-01-002186	CA-ALA-581	N/A	Isolate	SB	CCO	Chert flake
tihs001	N/A	N/A	N/A	Vollmer Peak rock wall	Tld	CCO	
tihs002			76000480	Merry-go-round	Tld	CCO	Listed in the National and California registers
tihs003	N/A	N/A	N/A	Brazil Building	Tld	CCO	
tihs004	N/A	N/A	N/A	Rotary Grove peace monument	Tld	CCO	
tihs005	N/A	N/A	N/A	Pozzulana Quarry Site	Tld	CCO	
tihs006	N/A	N/A	N/A	Turn-of-the-century water system remnant	Tld	CCO	
tihs007	N/A	N/A	N/A	Sweetbriar Dairy Site	Tld	CCO	
tihs008	N/A	N/A	N/A	Anti-aircraft installation	Tld	CCO	Constructed circa 1944
tihs009	N/A	N/A	N/A	Big Springs water distribution structure	Tld	CCO	
tihs010	N/A	N/A	N/A	Hopkins Property/Byrnes Ranch Site	Tld	CCO	
tihs011	N/A	N/A	N/A	WPA golf course	Tld	CCO	Constructed circa 1930s
tihs012	N/A	N/A	N/A	Old Observatory Site	Tld	CCO	
tihs013	N/A	N/A	N/A	Mineral Springs	Tld	CCO	
tihs014	N/A	N/A	N/A	Mrs. Mary Curran Ranch Site	Tld	CCO	
tihs015	N/A	N/A	N/A	CCC Camp Wildcat	Tld	CCO	Circa 1930s
tihs016	N/A	N/A	N/A	Spillway and dam	Tld	CCO	Circa 1921
tihs017	N/A	N/A	N/A	Ferndale/Sullivan Ranch	Tld	CCO	
tihs019	P-01-000799	N/A	N/A	Tilden steam trains	Tld	ALA	
tihs020	P-01-002254	N/A	N/A	Rock art	Tld	ALA	
tihs021	P-07-000801	N/A	N/A	Golf course pipeline	Tld	CCO	
tihs022	P-07-000802	N/A	N/A	Archery range foundation	Tld	CCO	
tihs023	n/a	N/A	N/A	Memorial grove/botanic gardens	Tld	CCO	
tihs024	n/a	N/A	N/A	Memorial grove	Tld	CCO	
tihs025	n/a	N/A	N/A	Nike radar site	Tld	CCO	
tina001	n/a	CA-CCO-024	N/A	Jewel Lake campsite	Tld	CCO	Midden, obsidian blade
tina018	N/A	CA-CCO-024	N/A	Jewel Lake campsite	Tld	CCO	Midden, isolate
tina020	P-01-002254	N/A	N/A	Lake Anza mortars	Tld	CCO	Bedrock mortars
				Pony Ride	Tld	CCO	
				Little Farm	Tld	CCO	
tmhs001	N/A	N/A	N/A	Beach House WPA Rock Work	TM	ALA	
tmhs002	N/A	N/A	N/A	Kiwanis Bldg WPA Rock Work/Play Site	TM	ALA	
tmhs003	N/A	N/A	N/A	Temescal Dam	TM	ALA	
wchs001	P-07-000323	CA-CCO-553H	92000313	Wildcat Cn	WC	CCO	
wchs022	P-07-000323	CA-CCO-553H	92000313	Alvarado Park	WC	CCO	Listed in National and California registers, and the Contra Costa County Historical Resource Inventory
wchs023	N/A	N/A	N/A	Belgum sanitarium site	WC	CCO	
wchs024	N/A	N/A	N/A	Nike radar site	WC	CCO	
wchs025	N/A	N/A	N/A	Homesite	WC	CCO	

Table IV.E-1 *Continued*

EBRPD #	Primary #	Trinomial	HPD #	Resource Name/Description	Park ^a	County	Comments
wchs026	N/A	N/A	N/A	Homesite	WC	CCO	
wchs027	N/A	N/A	N/A	Homesite	WC	CCO	
wchs028	N/A	N/A	N/A	Homesite	WC	CCO	
wchs029	N/A	N/A	N/A	Homesite	WC	CCO	
wchs030	N/A	CA-CCO-889	N/A	Contemporary rockcarving	WC	CCO	"Giacou" carved in rock*
wchs031	N/A	N/A	N/A	Nike Launch Site	WC	CCO	
wcna001	P-07-000323	CA-CCO-553H	92000313	Alvarado village site/WPA park features	WC	CCO	Village Site; see CCO-553H, 125, 274, 349, 353, 373
wcna002	N/A	CA-CCO-125	N/A	Midden	WC	CCO	
wcna003	N/A	CA-CCO-373	N/A	Midden	WC	CCO	
wcna004	N/A	CA-CCO-349	N/A	Bedrock mortars/cupules	WC	CCO	
wcna005	N/A	CA-CCO-274	N/A	Midden	WC	CCO	
wcna006	N/A	CA-CCO-553H	N/A	Wildcat Cn	WC	CCO	
wcna007	N/A	CA-CCO-553H	N/A	Wildcat Cn	WC	CCO	
wcna010	N/A	CA-CCO-578	N/A	Mortar	WC	CCO	Bedrock mortar
wcna011	P-07-000346	N/A	N/A	Amos Site	WC	CCO	Shellmound/petroglyph/bedrock mortar/cupule
wcna012	P-07-000347	CA-CCO-580	N/A	Amos Rock	WC	CCO	Cupule rock
wcna013	P-07-000348	CA-CCO-581	N/A	Star Rock	WC	CCO	Pleiades Petroglyph
N/A	P-01-002184	N/A	N/A	Fence	CC	ALA	
N/A	P-01-000235	CA-ALA-429H	N/A	Chinese work camp	LC	ALA	
N/A	P-07-002587	N/A	N/A	Rock wall	SB	CCO	
N/A	P-07-002717	N/A	N/A	Petroglyphs and bedrock mortars	Tld	CCO	
N/A	C-889 ^b	N/A	N/A	Isolate	WC	CCO	
N/A	P-07-002607	CA-CCO-762	N/A	Petroglyph	WC	CCO	
N/A	P-07-001171	N/A	12796	Brooks Island	BK	CCO	CHRIS code: 5S2
N/A	N/A	CA-CCO-301	N/A	Shellmound	ES	CCO	
N/A	P-07-002555	CA-CCO-754H	N/A	Stege Marsh Pier	ES	CCO	
N/A	P-01-005892	N/A	68815	Naval Supply Center	MH	ALA	CHRIS code: 2S2
N/A	P-01-010632	N/A	N/A	Western Pacific Railroad Ferry Slips	MH	ALA	Western Pacific Mole
N/A	P-01-000255	N/A	N/A	U.S. Army Air Corps Mechanics Training	ML	ALA	Mapped within park at NWIC
N/A	P-07-001374	N/A	74394	Giant Powder Company Site	PP	CCO	California Historical Landmark; CHRIS code: 7L
N/A	P-07-002569	N/A	N/A	Shell deposits	PP	CCO	Mapped within park at NWIC
N/A	P-01-009576	N/A	106353	Lake Temescal Bath House	TM	ALA	CHRIS code: 2S2

^a AC - Anthony Chabot, BK - Brooks Island, CB - Crown Beach, CC - Claremont Canyon, ES - East Bay Shoreline, KG - Kennedy Grove, LC - Lake Chabot, LCn - Leona Canyon, MH - Middle Harbor, MK - Miller/Knox, ML - Martin Luther King, Jr. Regional Shoreline, PP - Point Pinole, RW - Redwood, SB - Sobrante Ridge, Tld - Tilden, TM - Temescal, WC - Wildcat Canyon.

^b EBRP database lists C-889 as "CA-CCO-889." This resource is an isolate and has not been formally recorded

California Historical Resource Information System (CHRIS) Status Codes

ICL - Automatically listed in the California Register due to CA Landmark status, 2S2 - Determined eligible for separate listing in National and California registers, 5S2 - Ineligible for the National Register, but still of local interest, 7L - Evaluated for a register other than the National Register.

V. ALTERNATIVES (REVISED FROM DRAFT EIR)

The CEQA Guidelines require an analysis of a range of reasonable alternatives to the proposed project, or the location of the proposed project, which could feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the proposed project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.¹

The Wildfire Hazard Reduction and Resource Management Plan (Plan) has been described and analyzed in the previous chapters with an emphasis on potentially significant impacts and the guidelines, best management practices and performance standards included in the Plan and recommended mitigation measures to avoid these impacts. The following discussion is intended to inform the public and decision-makers of the potentially feasible alternatives to the proposed project.

This chapter is divided into three sections. The first section provides a brief discussion concerning alternatives that were considered but rejected. The second section briefly describes the principal characteristics of the alternatives considered in this section (i.e., the No Project alternative and the Mitigated alternative) and provides a qualitative comparison to the project. The last section discusses the environmentally-superior alternative. Table V-1 is a matrix that compares the impacts of the project to the impacts of alternatives evaluated in detail and alternatives rejected from detailed analysis. The comparison evaluates project and alternative impacts prior to mitigation.

Chapter III of this EIR describes the proposed Plan and identifies its purpose and lists the goals and objectives contained within the Plan. The Plan goals are listed below.

- Reduce fire hazards on District-owned lands in the East Bay's wildland-urban interface to an acceptable level.
- Maintain and enhance ecological values for plant and wildlife habitat consistent with fire reduction goals.
- Preserve aesthetic landscape values for park users and neighboring communities.
- Provide a vegetation management plan which is cost-effective and both financially and environmentally sustainable to EBRPD on an on-going basis.

The 12 Plan objectives (listed in Chapter III. Project Description) serve to more specifically direct wildfire hazard reduction and vegetation management actions. The purpose of these objectives and the policies and guidelines within the Plan is to provide guidance to District staff that will make a variety of informed, adaptive decisions according to site-specific information and will prepare annual fuel treatment plans that identify individual projects designed to meet the Plan goals over time (see Plan Chapter VI. Plan Implementation). The management goals and treatment recommendations included in the Plan focus on specific high wildfire hazard treatment areas and vegetation types. The treatment recommendations in the Plan are intended to be flexible and adaptable and provide

¹ CEQA Guidelines, 2008. Section 15126.6.

guidance to the District as it they prepares specific treatment prescriptions for individual areas in order to address changing needs and conditions over time. The individual fuel treatment plans will be based on site specific assessments and available information, including this EIR, background studies and the District's GIS database. Specific treatment guidelines, best management practices, and mitigations are included in the Plan and this EIR to address the fuel reduction methods, vegetation types, and environmental conditions likely to be encountered during implementation of the Plan recommendations (see Table III-2 in Chapter III. Project Description) and the vegetation management program. The vegetation management program (VMP) identifies and describes the various vegetation types found within the East Bay parklands, including their associated fuel characteristics; describes treatment considerations for invasive plants; outlines goals and objectives of vegetation management activities within the EBRPD's jurisdiction; and delineates recommended treatment performance standards for each vegetation type to meet EBRPD's vegetation management goals. Coupled with the information presented in Chapter IV. Fuel Reduction Methods, the VMP provides information to enable the District to determine and prepare the annual fuels treatment plan.

The evaluation of environmental topics contained in Chapter IV of this EIR assesses the potential impacts that could occur with implementation of the Plan. Based on the analyses, all potential impacts but one associated with implementation of the Plan can be reduced to less-than-significant levels with the implementation of Plan guidelines and the mitigation measures identified in this EIR. One significant and unavoidable impact associated with short term substantial adverse visual impacts to the scenic character of the Study Area was identified.

A. ALTERNATIVES THAT WERE CONSIDERED BUT REJECTED

The following section describes five alternatives to the proposed project that were considered but rejected for the reason(s) provided.

1. No Action Alternative

Under the No Action alternative, the District would not undertake any existing or new fuel reduction activities to either maintain the existing fuel reduction zone or to complete projects that have been authorized under the FEMA Environmental Assessment.² In the short term, no potential adverse effects associated with vegetation management activities and related to biological resources, soil loss, erosion, compaction, potential landslides, water resources, air quality, cultural resources, and visual resources would occur. However, none of the beneficial impacts of the Plan would occur, including: reducing the threat of property damage, personal injury, and other impacts to public health and safety caused by future fires; removing non-native, highly flammable, invasive plants, and ultimately converting park vegetation to low fire hazard primarily native plant species and habitat types. This alternative would not meet the objectives of Measure CC, which calls for the use of public funds to "...enhance public safety (police and wildfire protection..." and which is included in Appendix E. Additionally, this alternative would not meet the goals and objectives of the Plan or the District's Master Plan objectives and policies, and, therefore, has been removed from further consideration.

² URS Corporation, 2003. Final Environmental Assessment for the East Bay Regional Park District Vegetation Management Projects, Alameda and Contra Costa Counties, California. HMGP #919-515-24. Prepared for the Federal Emergency Management Agency. April.

2. Maximum Fuel Reduction Activities

Under the Maximum Fuel Reduction Activities alternative, the entire Study Area (approximately 19,000 acres) both within and outside the recommended treatment areas described in the Plan would be within the “area of impact” and considered and prioritized for fuel reduction activities. Under this alternative, the District would first treat all areas of high hazard fuels (as determined through the wildfire hazard assessment and FlamMap modeling, see Appendix C of the Plan) regardless of whether they were adjacent to homes and facilities outside of the parklands.

This alternative would ensure that the most hazardous fuels were treated within each park unit, environmental resources within the parks were considered, and park facilities at risk were protected. However, because no fuel hazard priorities would be identified under this alternative, as they are in the 3,000 acres that are the focus of management activities in the proposed project, the Maximum Fuel Reduction Activities~~this alternative would not meet the primary objective of protecting life and property, nor would it meet the goal of providing a cost-effective vegetation management plan that is both economically and environmentally sustainable on an on-going basis. This alternative would not significantly reduce or avoid the impacts identified in Chapter IV for biological resources, slope instability, cultural resources, noise and visual resources, as fuel reduction treatments and activities would continue to occur. In fact, the alternative would likely increase any potential impacts associated with the project proportional to the larger area affected by fuel reduction activities (19,000 acres would be affected under the alternative compared to 3,000 acres under the project). The Maximum Fuel Reduction Activities alternative would require substantially more ground-disturbing and vegetation removal activities than the proposed project. Although adverse effects associated with these activities would be mitigated under the proposed project, the Maximum Fuel Reduction Activities alternative would adversely affect aquatic habitats and nesting raptors and songbirds, could conflict with policies that protect biological resources, and could introduce non-native species to the area. Because this alternative would require more heavy equipment use than the proposed project and more high hazard fuels would be removed (including plants whose root systems stabilize hillsides) compared to the proposed project, the alternative could contribute to landslide hazards. Ground-disturbing activities could also result in greater adverse effects to buried archaeological resources than the proposed project. The increased level of operation of mechanical equipment as part of these ground-disturbing activities, including vegetation management activities, also has the potential to increase ambient noise and vibration levels. Lastly, the removal of vegetation associated with the alternative would change the scenic character of the area and its surroundings. For these reasons, this alternative was considered but rejected from detailed analysis for not meeting the basic goals and objectives of the project.~~

3. No Tree Removal

Under the No Tree Removal alternative, the fuel reduction and vegetation management activities identified in the Plan would be fully implemented, except that no trees would be removed as part of any fuel reduction activities. While this alternative would maintain ecological and landscape aesthetic values within the Study Area over the short-term, the increasing number of trees and overall density within tree stands of all types would contribute to increased wildfire hazards and would promote the spread of diseases within and across stands, such as sudden oak death and pine pitch canker. Furthermore, mature and young eucalyptus and Monterey pine forests are non-native plant species that were widely introduced in large plantations and pose significant fire hazards within the Study Area. Non-native eucalyptus and pine are some of the most dense and flammable plant communities

in the hills. Unmaintained eucalyptus groves can have 400 to 900 trees per acre with fuel ladders into the canopy and 50 to 100 tons of flammable fuel on the ground.³ 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. In addition, the ground vegetation and ladder fuels in these dense woodland communities are difficult to maintain in a cost-effective manner. Unmaintained pine groves are also extremely flammable with deep needle duff on the ground and dense pine seedling growth within and around the grove. Additionally, eucalyptus re-growth through stump sprouting of previously cut mature eucalyptus is a significant issue and fire hazard in the Study Area. The young eucalyptus forest (one to ten years of age) is dominated by trees with multiple trunks and a large amount of leaves at the lower levels, and is more hazardous than mature eucalyptus forest due to high tree density and the presence of multiple stems, which can suspend dead leaves and branches within these stems that act as an additional ladder fuel.

It should be noted that selective thinning, pruning and removal of ground and ladder fuels are the recommended actions for the majority of the approximately 1,370 ~~4,360~~ acres of eucalyptus stands within the identified treatment areas (see Table III-2 in the Project Description chapter of this EIR.) Removal of eucalyptus or pine stands is the recommended action when the eucalyptus or pines: (1) are located along a ridgeline close to homes to minimize ember production and distribution during a wildfire under Diablo wind conditions; (2) have heavy concentrations of understory fuels and are located adjacent to designated strategic fire routes or major roadways used for evacuation and emergency access; and (3) are located above a well-developed understory of native plant communities (e.g., oak-bay woodland). Even if most of the eucalyptus forests within the recommended treatment areas were removed (approximately 1,370 ~~4,360~~ acres of eucalyptus or 548,000 to 1,233,000 trees), there would still be thousands of acres of eucalyptus and Monterey Pine forests and other tree species remaining within the 19,000-acre Study Area and the remaining wildland areas under management by others such as EBMUD and UC Berkeley.

This alternative would not significantly reduce or avoid the impacts identified in Chapter IV for biological resources, cultural resources, noise and visual resources as fuel reduction treatments and activities within the RTAs would continue to occur. Although no mature trees would be removed as part of this alternative, ground and ladder fuels would be eliminated. The removal of these fuels would require actual removal of younger and/or low-profile vegetation and associated use of heavy machinery on the site. Therefore, the alternative has the potential to result in greater adverse effects to aquatic habitats and nesting raptors and songbirds than the proposed project, and could conflict with policies that protect biological resources. In addition, the alternative could introduce non-native species to the area. Similarly, because heavy equipment would operate on the site (although equipment use would be less than associated with the proposed project), the alternative could contribute to landslide hazards. Ground-disturbing activities could also result in adverse effects to buried archaeological resources (although these effects would be less than the proposed project). Mechanical equipment operated as part of these ground-disturbing activities, including vegetation management activities, also has the potential to increase ambient noise and vibration levels (although these increases would be less than associated with the proposed project). Lastly, the removal of vegetation associated with the alternative would change the scenic character of the area and its surroundings (although the alternative would not result in the removal of mature trees, the removal of other types of vegetation would still change the visual character of the area). Compared to the

³ Kent, Jerry. 2009. Non-published Draft Wildfire Discussion Paper to EBRPD and LSA Associates, Inc. January 21.

proposed project, this alternative could potentially reduce impacts associated with slope instability as trees, whose roots contribute to holding the soil in place, would not be removed. However, under the proposed project, stumps and roots would remain in place after tree removal. Other vegetation may be removed on steep slopes, and perhaps more understory vegetation would be required to be removed under this alternative to counter the increased hazard of leaving non-native eucalyptus and Monterey pines in place, which would lead to impacts associated with slope instability. Mitigation Measure GEO-1 has been identified to reduce the impacts of the Plan related to slope instability to a less-than-significant level, and would be applied to both the project and all alternatives that could adversely affect slope instability.

This alternative also would not meet the Plan's objective of furthering biologically rich and relatively low fire hazard native habitats such as bay-oak woodlands, native grasslands, and differing age groups of chaparral (and would not realize associated beneficial environmental effects, such as improved foraging habitat for raptors). Dense ground fuels, such as those that occur in young, dense groves of eucalyptus trees, are known to reduce biological diversity. Therefore, this alternative would not meet the primary objectives of protecting life and property, maintaining a network of strategic fire routes for evacuation and emergency access; and reducing and removing non-native invasive plants and converting park lands to viable, sustainable, and low hazard ecosystems. This alternative also would fail to meet both the goals and objectives of the project over the long-term. Because of these reasons, this alternative was considered but rejected.

4. Wildland-Urban Interface Management Only

To maximize the protection of homes and buildings outside of the parks, under the Wildland-Urban Interface Management Only alternative, the fuel reduction and vegetation management activities identified in the Plan would be fully implemented only on park lands within treatment areas that are within 200 feet of homes and other structures outside of the parks and along strategic fire routes. The eucalyptus stands that represent significant threats from torching and crown fires that can cause ember flight at great distances under a Diablo wind condition would not be treated, nor would any developed facility or facility at risk as defined in the Plan (see Table III-1 in Chapter III, Project Description). Similar to the No Tree Removal alternative, implementation of this alternative would not meet the Plan's primary objectives of protecting life and property as the fire threat associated with eucalyptus and Monterey pine on ridges producing embers and quickly spreading fire under a Diablo wind condition wildfire is significant. Additionally, ~~n~~Not managing certain areas of vegetation to protect facilities at risk, some of which are cultural resources, could create new significant impacts associated with this alternative. Additionally, this alternative would not avoid or reduce any of the potentially significant impacts associated with the Plan related to biological resources, slope instability, cultural resources, noise, and visual resources. Although this alternative would reduce fuel reduction and management activities compared to the project, such activities would still occur and would result in adverse short-term environmental effects. Although impacts associated with ground disturbance and vegetation removal would be reduced compared to the project, the alternative would result in similar types of associated impacts (although these impacts would be incrementally reduced compared to the project). Therefore, the alternative has the potential to adversely affect aquatic habitats and nesting raptors and songbirds, and could conflict with policies that protect biological resources. In addition, the alternative could introduce non-native species to the area. Because heavy equipment would operate on the site, the alternative could contribute to landslide hazards. Ground-disturbing activities could also adversely affect buried archaeological resources. Noise generated by these ground-disturbing activities, including vegetation management activities, also has the potential

to increase ambient noise and vibration levels. Lastly, the removal of vegetation associated with the alternative would change the scenic character of the area and its surroundings (although changes to the aesthetics of the area would mainly be confined to areas near existing structures and along strategic fire routes). Because this alternative would fail to reduce any significant impacts and would not meet the basic objectives of the Plan, it was removed from further consideration.

5. No Chemical Use Alternative

The No Chemical Use alternative proposes that all fuel treatment methods except chemical treatments would be included for consideration as part of fuel reduction and vegetation management activities covered under this EIR. The reader should note that ~~no significant~~ potentially significant impacts related to the use of chemicals for vegetation management activities were identified as a result of the analyses in this EIR. This alternative would not achieve the primary goal of the Plan, the reduction of wildfire hazards, because when eucalyptus trees are removed and no chemical treatment is provided, the regrowth of eucalyptus sprouts from the stump will create a mass of fuel and a level of fire hazard that will, over time, exceed the original, as has been documented by the District in the Study Area itself.⁴ The goals and objectives of the Plan associated with maintaining ecological values, and preserving aesthetic values would generally be achievable, under this alternative. However, this alternative would not meet the objective of providing a cost-effective and sustainable Plan, because with the exception that, where chemical treatments are considered to be ~~would otherwise be~~ the most economic and effective means of treatment ~~other treatment methods would be required and so may not provide the most cost effective or financially sustainable vegetation management plan possible.~~

The Marin Municipal Water District (MMWD) Board of Directors suspended the use of herbicides on their lands in August 2005. Prior to the suspension of herbicide use, MMWD staff estimate that broom had essentially been eradicated from the defined fuelbreak system. Since 2005, MMWD staff estimate that 1,000 acres, representing 5 percent of the watershed, is seriously infested with invasive plants, primarily broom (see www.marinwater.org and Plan Appendix H for additional detail). The other alternative methods tested by MMWD include: mechanical removal, hand removal, controlled burning, grazing, high intensity heat/flame, biological control, and water or foam (soap-based). Since 2005 MMWD has been preparing a risk assessment of herbicides (essentially the same as those allowed for use by EBRPD) and updating their Vegetation Management Plan. As of March 2010, MMWD's draft reports and analyses have shown no significant risk associated with the use of the chemicals studied on human health, animals or non-target plants, and a greatly increased average annual cost for eradicating 100 acres of the 750 acres of broom without the use of herbicides (\$2,810,625 per year) as compared to with the use of herbicides (\$823,250).⁵ MMWD watershed managers have determined that the use of chemicals is a cost-effective and safe method to reduce wildfire hazards on MMWD open space lands and control exotic weed invasions.

⁴ Kent, Jerry, Previous EBRPD Assistant Manager. 2010. Unpublished report concerning EBRPD eucalyptus removal projects from 1972 to 2004, Revised Draft, March 2, 2010.

University of California, Berkeley. Office of Emergency Preparedness. 2007. Fire Mitigation Program – Annual Report 2007, Large Projects.

⁵ Klein, Janet, MMWD Watershed Manager. 2010. Personal communication to LSA Associates Inc. March 17, 2010, Marin Municipal Water District. 2009. Vegetation Management Plan Update, Interim Background Report No. 7, Vegetation Management Plan Alternatives Report. February 13.

Following a deep freeze in 1972 that killed or damaged many eucalyptus trees, EBRPD employed a variety of vegetation management techniques to create a 13-mile fuel break along the crest of the East Bay Hills. The judicious application of chemicals (including 2,4-D and Roundup) was deemed to be most effective in reducing regeneration of eucalyptus trees from stumps; other techniques, such as logging without application of herbicides, were considered generally ineffective in the long-term at controlling eucalyptus-related fire hazards. In some smaller areas, the application of Roundup was determined to be highly effective at controlling regrowth from stumps. Therefore, the use of small quantities of herbicides, in a way that is protective of ecological values, is considered a necessary tool for controlling the regeneration of hazardous eucalyptus groves.⁶

The Plan proposes that the primary use of chemical treatment is to prevent the re-growth of cut vegetation, ~~particularly in areas which are inaccessible to heavy equipment and where soil disturbance is to be avoided,~~ and to control invasive non-native plant species that exacerbate wildfire risk (e.g., broom and eucalyptus resprouts). Per the Plan and as evaluated in Section IV.H, Hazards and Hazardous Materials of this EIR, chemical use is an efficient and cost-effective method that the District uses under the auspices of EBRPD's IPM policies and practices and in combination with other treatment measures (e.g., mowing, burning and hand removal). Recent studies conducted by the ~~Marin Municipal Water District (MMWD)~~ confirm this approach; the results of their studies on the use of non-chemical control methods for the control of invasive non-native plants indicated that non-chemical alternatives are ineffective for large-scale vegetation management projects. (see Appendix H of the Plan for additional information on these studies).⁷ The Plan contains guidelines and best management practices that would reduce potential adverse impacts related to chemical use to a less-than-significant level. The No Chemical Use alternative would, however, remove from consideration chemical treatments approved by the State and currently used by EBRPD to treat vegetation in an economic and environmentally sustainable manner, resulting in additional, potentially more-costly treatments being used. This change, over time, could result in some treatment actions being delayed or removed from consideration due to lack of funding, which in turn would result in increased wildfire hazards as areas are left untreated. Additionally, because chemical use is found in this EIR to result in a less-than-significant impact, this alternative would not avoid or reduce any of the significant impacts associated with the Plan related to biological resources, slope instability, cultural resources, noise, and visual resources. Since the significant impacts of the project are primarily related to ground-disturbing activities (including vegetation removal) and not chemical use, the alternative would not result in significant environmental gains. In particular, the alternative has the potential to adversely affect aquatic habitats and nesting raptors and songbirds, and could conflict with policies that protect biological resources, as weedy species would continue to expand and replace native species and habitat. These aforementioned impacts are those associated with ground disturbance (including the installation of culverts) and vegetation removal. In addition, the alternative could introduce non-native species to the area (the alternative could exacerbate this impact because it would not allow for the use of herbicides, which are a proven tool in managing non-native species). Similarly, because this alternative would require more heavy equipment use than the proposed project, the alternative could contribute to soil compaction, destabilization or landslide hazards that

⁶ Kent, Jerry, Previous EBRPD Assistant Manager. 2010. Personal communication with EBRPD. March 10.

⁷ The MMWD Board of Directors suspended the use of herbicides on their lands in August 2005. Since that time, the watershed staff has been "losing the battle against these non-native plants that exacerbate wildfire risk." MMWD estimates that 1,000 acres representing 5 percent of their watershed is seriously infested with invasive plants, primarily broom (www.marinwater.org). The other alternative methods tested by MMWD include: mechanical removal, hand removal, controlled burning, grazing, high intensity heat/flame, biological control, and water or foam (soap based).

would be more severe than the proposed project. Ground-disturbing activities could also result in greater adverse effects to buried archaeological resources than the proposed project. Mechanical equipment operated as part of these ground-disturbing activities, including vegetation management activities, also has the potential to increase ambient noise and vibration levels compared to the proposed project. Lastly, the removal of vegetation associated with the alternative would change the scenic character of the area and its surroundings. Because this alternative would not reduce any significant impacts, would not achieve the basic goals and objectives of the project and would not result in the creation of a vegetation management plan which is cost-effective and financially and environmentally sustainable to EBRPD on an on-going basis, it was removed from further consideration.

B. ALTERNATIVES TO THE PLAN

This section analyzes the following ~~two~~three alternatives:

- The CEQA-required **No Project alternative** assumes that the Plan would not be adopted or implemented and that existing conditions would remain.
- The **Mitigated alternative** assumes that the Plan would be revised to include additional guidelines and mitigation measures to mitigate the potential significant impacts identified in this EIR.
- The **Modified No Tree Removal and No Chemical Use alternative** assumes that the principal treatment for the approximately 1,370 acres of eucalyptus and 150 acres of Monterey pines in the Recommended Treatment Areas is to remove all understory fuels to bare ground (including leaf litter, all shrubs, and trees with a diameter at breast height (dbh) of less than 12 inches), remove diseased trees, and limb up all remaining trees to a minimum of 8 feet in height. In addition, no chemicals would be used to manage non-native vegetation.

For each alternative, a brief discussion of its principal characteristic(s) is followed by an analysis of the alternative. The emphasis of the analysis is on the alternative's relative adverse effects compared to the proposed project and a determination of whether or not the alternative would reduce, eliminate, or create new significant impacts.

1. No Project Alternative

The following provides a brief description and analysis of the CEQA-required No Project alternative.

a. Principal Characteristics. The No Project alternative assumes that the Plan would neither be adopted nor implemented and that existing conditions would remain in effect throughout the Study Area. Only those fuel reduction or vegetation management actions covered under the existing FEMA Environmental Assessment and ongoing maintenance activities would be conducted (i.e., no actions identified as Initial Treatments in Table III-1 of the Project Description would occur.)

b. Analysis of No Project Alternative. Under this alternative, none of the potential impacts identified in Chapter IV of this EIR would occur because no additional fuel treatment or vegetation management activities would occur outside those already covered under the FEMA Environmental Assessment or already being conducted as maintenance activities. While some potential impacts

would be avoided, the goals and objectives of the proposed project would not be achieved. Additionally, mitigation measures have been identified for all but one of the potential impacts associated with implementation of the Plan. The potential for increased catastrophic wildfire hazards within the Study Area and, specifically, within the wildland-urban interface would increase substantially over time under this alternative, which would be a new significant impact. The increasing rate in home losses in California from wildfires makes it clear that a dramatic change in fire-safe construction, combined with improved vegetation management practices to reduce available fuels for wildfires, should be made to protect human health and property from wildfire risks. East Bay communities have made some improvements since 2001 in residential and neighborhood safety and fire fighting capability; however the continued increase in development along the wildland-urban interface, sustained encroachment of communities into wildland areas, and the effects of global climate change put an ever-increasing number of people at risk from wildfires. In spite of concerted efforts at wildland vegetation management on public lands, fuel loads remain high and the most cost-effective ways for dealing with severe Diablo wind-related wildfires remains elusive. Under this alternative, the beneficial impacts of the Plan would not occur, including management programs undertaken in concert with fuel reduction actions that are focused on restoring and maintaining wildlife habitat and native plant communities would not be conducted, and invasive and non-native species would continue to spread into native plant communities and increase wildfire hazards.

2. Mitigated Alternative

The following provides a brief description of the Mitigated alternative and potential impacts associated with its implementation.

a. Principal Characteristics. The focus of the Mitigated alternative is to revise the Plan to include the additional mitigation measures identified in this EIR.

b. Analysis of Mitigated Alternative. Under this alternative, only the significant and unavoidable impact associated with short-term adverse impacts to the visual character of the Study Area would occur, and none of the other potentially significant impacts identified in Chapter IV of this EIR would occur because the mitigation measures proposed in this EIR would be included as required mitigations in the Plan. This alternative would enable the goals and objectives of the Plan to be achieved, and would further support implementation of the identified fuel treatment and vegetation management activities included in the Plan.

3. Modified No Tree Removal and No Chemical Use Alternative

The following provides a brief description of the Modified No Tree Removal and No Chemical Use alternative and potential impacts associated with its implementation.

a. Principal Characteristics. Under the Modified No Tree Removal and No Chemical Use alternative the principal treatment for the approximately 1,370 acres of eucalyptus and 150 acres of Monterey Pines in the Recommended Treatment Areas is to remove all understory fuels to bare ground (including leaf litter, all shrubs, and trees with a diameter at breast height (dbh) of less than 2 inches), remove diseased trees, and limb up all remaining trees to a minimum of 8 feet in height creating managed monoculture groves of primarily eucalyptus trees similar to Kennedy Grove or the eucalyptus grove on the main UC Berkeley campus. Additionally, under this alternative no herbicides could be used to keep any cut eucalyptus (those with a dbh of less than 6 inches) from resprouting or

incursions of broom or other invasive plant species from colonizing the disturbed area of approximately 1,520 acres.

b. Analysis Modified No Tree Removal and No Chemical Use Alternative. This alternative differs from the proposed project in that the removal of eucalyptus and Monterey Pine trees is further limited, no herbicides can be used to maintain the groves of trees in a low fire hazard state and stop the colonization of invasive understory plants, and all understory fuels would be removed to forestall the regeneration of native habitats (e.g., oak bay woodlands or native grasslands). As stated above, under the proposed Plan, selective thinning, pruning and removal of ground and ladder fuels are the recommended actions for the majority of eucalyptus stands, and complete removal of trees is the recommended action in a select number of circumstances determined necessary to meet the goal of protecting the public's health and welfare from wildfire hazard.

This alternative would not reduce to a less-than-significant level or avoid any of the potentially significant impacts associated with the Project (note that all these impacts except for one would be reduced to a less-than-significant level with identified mitigation measures), and could create new significant impacts associated with the removal of understory vegetation that could impact special-status plants and animals and their habitats. Biological resource impacts associated with the replacement of culverts, disturbance to nesting birds, construction of a new strategic fire route, and conflict with other policies and regulations would still continue to occur (although these impacts would be reduced with the implementation of identified mitigation measures). However, impacts to nesting birds and conflicts with policies and regulations protecting biological resources would likely be substantially lessened under the Modified No Tree Removal and No Chemical Use alternative because removal of mature trees that contain nesting sites for birds and other protected animals would be avoided. The small trees that would be removed are less likely to contain important bird nesting sites. However birds, including raptors, could use younger and smaller vegetation and thus could be adversely affected by the alternative. Therefore, associated impacts would not be completely avoided. It should be noted that the alternative would not realize long-term benefits to bird habitat (and wildlife habitat in general) associated with the restoration of native plant communities. In addition, the alternative could result in greater impacts to wildlife associated with understory vegetation since such vegetation would be removed en masse in the treatment areas and not in the customized way that would be made possible through judicious use of herbicides. The spot treatment of vegetation through herbicide application, which would occur as part of the project, is expected to be more protective of wildlife than total removal of understory vegetation.

The types of slope instability impacts would be similar to the proposed project under this alternative as would significant impacts associated with cultural resources and short-term noise, because other fuel reduction activities would occur. However, the severity of these impacts would also be substantially lessened compared to the proposed project (although not to a less-than-significant level) because major ground disturbance associated with removal of large trees would not occur. Slope stability would not be compromised to the extent of the proposed project. Similarly, because less ground disturbance would occur, potential impacts to unidentified cultural resources would be reduced and management activities would likely generate less noise. Under this alternative, the significant and unavoidable impact associated with short-term adverse impacts to the visual character of the Study Area would also occur related to fuel reduction activities that are similar to the project and would occur under this alternative. Removal of large amounts of vegetation – even if mature trees are retained – would substantially change the aesthetic character of the Study Area. Again, since

mature trees would be retained as part of the alternative, the visual character of the area would be less altered than under the project. However, it should also be noted that this alternative would not be as successful in restoring native landscapes to the site, which is considered a beneficial impact to visual resources. Other beneficial impacts that would not be realized by this alternative include the restoration of scrub and grassland communities, which provide improved foraging habitat for raptors.

The primary goal of reducing fire hazards on District-owned land to an acceptable level would be somewhat met under this alternative because ground and ladder fuels would be removed. However, significant fire hazards associated with eucalyptus and Monterey pine trees located along a ridgeline close to homes would still occur and ember production and distribution during a wildfire under Diablo wind conditions would not be minimized under this alternative.

In summary, the Modified No Tree Removal and No Chemical Use alternative would reduce impacts to biological resources, slope instability, cultural resources, noise, and scenic character, but would not significantly reduce (to a less-than-significant level) or avoid these impacts, and might cause new significant impacts related to removal of special-status plants and animal species. This alternative also would only partially meet the primary goals and objectives of the proposed project.

C. ENVIRONMENTALLY-SUPERIOR ALTERNATIVE

CEQA requires that an environmentally-superior alternative be identified in the EIR. Based on the analysis provided above, the Mitigated alternative is considered the environmentally-superior alternative because it would incorporate into the Plan the additional mitigation measures included in this EIR to reduce impacts to a less-than-significant level, except for the one significant and unavoidable impact related to visual resources.

Both the proposed project and the Mitigated alternative would provide the least amount of potentially-significant impacts resulting from fuel treatment and vegetation management activities within the Study Area. Both the proposed project and the Mitigated alternative would also provide sufficient guidelines, recommendations, and mitigation measures necessary to reduce potential impacts. Therefore, the Mitigated alternative is the environmentally-superior alternative.

Table V-1, below, is a matrix that compares the impacts of the project to the impacts of alternatives evaluated in detail and alternatives rejected from detailed analysis. The comparison evaluates project and alternative impacts prior to mitigation. This matrix summarizes the impact analysis contained in this chapter. Please refer to the previous discussion for additional detail.

Table V-1: Comparison of Project Alternatives Evaluated in Detail

<u>Environmental Topics</u>	<u>Proposed Project</u>	<u>Alternatives Analyzed in Detail¹</u>			<u>Alternatives Rejected From Detailed Analysis¹</u>					
	<u>Significant Impact</u>	<u>Level of Significance Without/With Mitigation</u>	<u>No Project Alternative</u>	<u>Mitigated Alternative</u>	<u>No Tree Removal and No Chemical Use Alternative</u>	<u>No Action</u>	<u>Maximum Fuel Reduction</u>	<u>No Tree Removal</u>	<u>Wildland-Urban Interface Management Only</u>	<u>No Chemical Use</u>
<u>Biological Resources</u>	<u>BIO-1 (disturbance to aquatic habitats)</u>	<u>S/LTS</u>	≤	≤	≡	≤	≡	≥	≡	=
	<u>BIO-2 (disturbance to nesting raptors and songbirds)</u>	<u>S/LTS</u>	≤	≤	≤ ²	≤	≥	≤	≤	>
	<u>BIO-3 (serve as conduit for non-native plants)</u>	<u>S/LTS</u>	≤	≤	≡	≤	≡	≡	≡	=
	<u>BIO-4 (conflict with local policies/ordinances/regulations)</u>	<u>S/LTS</u>	≤	≤	≤	≤	≥	≡	≤	=
<u>Geology, Soils, and Seismicity</u>	<u>GEO-1 (increased slope stability)</u>	<u>S/LTS</u>	≤	≤	≤	≤	≥	≤	≤	>
<u>Cultural and Paleontological Resources</u>	<u>CULT-1 (impacts to human remains)</u>	<u>S/LTS</u>	≤	≤	≤	≤	≥	≤	≤	=
	<u>CULT-2 (impacts to unique paleontological resources)</u>	<u>S/LTS</u>	≤	≤	≤	≤	≥	≤	≤	>
	<u>CULT-3 (exclusion of cultural resources from long-range planning)</u>	<u>S/LTS</u>	≤	≤	≤	≤	≥	≤	≤	=
<u>Noise</u>	<u>NOI-1 (short-term generation of noise and vibration)</u>	<u>S/LTS</u>	≤	≤	≤	≤	≥	≤	≡	>
<u>Visual Resources</u>	<u>VIS-1 (impacts to scenic character)</u>	<u>S/SU</u>	≤	≡	≤	≤	≥	≤	≤	=

Notes:

SU = Significant and Unavoidable impact(s) = the impact is similar to the proposed project

LTS = Less Than Significant impact(s) < the impact is less than proposed project

> the impact is greater than proposed project

¹ These impact findings represent a comparison of the (unmitigated) impacts associated with each alternative to the (unmitigated/mitigated) impacts of the project.

² While this alternative would result in slightly reduced impacts to nesting raptors and songbirds because removal of mature trees would be avoided, this alternative would potentially result in a new significant impact related to removal of special-status plant and animal species because understory vegetation would not be removed in the customized way that would be made possible through the judicious use of herbicides.

Source: LSA Associates, Inc. 2010.

VI. CEQA-REQUIRED ASSESSMENT CONCLUSIONS (REVISED FROM DRAFT EIR)

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; cumulative impacts; effects found not to be significant; and unavoidable significant effects.

A. GROWTH-INDUCING IMPACTS

A project is considered growth-inducing if it would directly or indirectly foster economic or population growth or the construction of additional housing.¹ Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand or the development of new residential subdivisions or industrial parks in areas that are currently only sparsely developed or are undeveloped.

The purpose of the East Bay Regional Park District's (EBRPD's) Wildfire Hazard Reduction and Resource Management Plan (Plan) is to reduce the risk of a wildfire in identified high hazard areas on EBRPD parklands through fuel reduction actions that are conducted in a manner that reduces adverse environmental effects and implements resource and habitat management goals. The Plan is not intended to be used as a technical manual for habitat restoration, but rather provides basic guidelines for protecting environmental values, enhancing habitat and restoring native vegetation while reducing wildfire hazards. The Plan provides specific goals, objectives, guidelines, and best management practices (BMPs) to guide wildfire hazard reduction and resource management activities that will be carried out by EBRPD and its contractors over time and in a manner that blends ecological and resource considerations with current fire science methodology and practices to achieve the desired results.

The Plan does not include, nor would its implementation require, the expansion of infrastructure (e.g., construction of new public roads or sewer lines) or the construction of new facilities which would directly or indirectly foster economic or population growth in the vicinity of the Plan's Study Area; therefore, implementation of the Plan would not induce unanticipated growth.

B. SIGNIFICANT IRREVERSIBLE CHANGES

An EIR must identify any significant irreversible environmental changes that could result from the implementation of a proposed project. These may include current or future uses of non-renewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA dictates that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.² The *CEQA Guidelines* describe three distinct categories of signifi-

¹ *CEQA Guidelines*, 2008, Section 15126.2(d).

² *CEQA Guidelines*, 2008, Section 15126.2(c).

cant irreversible changes: 1) changes in land use which would commit future generations; 2) irreversible changes from environmental actions; and 3) consumption of non-renewable resources.

1. Changes in Land Use Which Would Commit Future Generations

The Study Area comprises 13 hillside and 7 shoreline parks under the jurisdiction of EBRPD. These parks are individually classified according to park type and land use designations to indicate various levels of resource protection and recreational intensity in each park. EBRPD also identifies areas needing special protection or management as Special Protection Features or Special Management Features, respectively. In addition to this internal classification, EBRPD has also adopted specific Land Use Development Plans for a number of parks to direct future park land development by outlining expected levels of use and development, delineating general park land character, planning access points and circulation systems, and dividing the park land into zoning units which will preserve the natural resources of the specified park land.

The recommendations, guidelines, and fuel treatment actions identified in the Plan are consistent with the intent of EBRPD's park type and land use designations, and are horizontally consistent with the existing Land Use Development Plans for those parks where these plans have been adopted. Further, the Plan includes recommendations, guidelines, and BMPs designed to reduce wildfire hazards and conduct resource management activities at the parks included in the Study Area; no development is included that would require the additional use of non-renewable resources or the commitment of future generations to their use. Because all activities included as part of the Plan's implementation would be consistent with existing land uses, future generations would not be committed to a substantial change in land uses.

2. Irreversible Changes from Environmental Actions

Implementation of the Plan would reduce the risk of a wildfire in identified high hazard areas on EBRPD parklands through fuel reduction actions that are conducted in a manner that reduces adverse environmental effects and implements resource and habitat management goals.

Treatment methods included for consideration as part of the Plan include the thinning or removal of selected trees and shrubs determined to be non-native or highly flammable in the event of a wildfire, prescribed burning to reduce total fuel loads in areas where otherwise an excessive amount of available fuels would exist, chemical applications, and the use of grazing animals to reduce the amount of vegetation in treatment areas to low-hazard levels. While each of these actions would affect the amounts and types of vegetation within treatment areas, their application would not result in permanent or irreversible changes to the treated areas. Because only minimal use of herbicides is anticipated within the Study Area and then only through focused, highly-controlled, and regulated application of approved herbicides, and the Plan includes guidelines and best management practices associated with the use of chemicals, irreversible changes to the physical environment from the accidental release of hazardous materials associated with herbicide application to meet fuel reduction goals is extremely unlikely. Additionally, concerns regarding the use of forestry herbicides and their risk to water quality and other environmental impacts that might occur can be allayed by published environmental fate studies. These studies demonstrate that these chemicals do not leach through soils, but instead degrade rapidly by interaction with sunlight, water, and soil microorganisms into carbon

dioxide and water. These herbicides do not volatilize, and the directed spot application method eliminates the potential for drift to non-targeted plants.³

Because this Plan is a maintenance plan, it addresses vegetation management within the Study Area to reduce the risk of wildfires and to improve resources and habitat. Where feasible, the District would seek to improve, not degrade, environmental conditions in the Study Area during the performance of any fuel treatment actions included as part of the Plan. The intent of the Plan is to reduce or “thin” fuel to a sustainable, low-hazard condition. Further, the nature of vegetation is such that its continued re-growth despite initial treatments necessitates the continued maintenance of vegetation and other fuels after initial treatments have occurred. As a result, no irreversible changes are expected to result from the adoption and implementation of the Plan.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes the conversion of agricultural lands to urban uses, lost access to mineral reserves, and use of non-renewable energy sources. The Plan does not include the conversion of any land to other uses, nor does it impact access to mineral reserves.

Implementation of the Plan would include the limited use of petroleum products as needed for the operation and maintenance of mechanical equipment used to treat vegetation. The amount of non-renewable resources used, however, would be significantly less than those required for consumption were a major wildfire and firefighting response to occur within the Study Area. As a result, implementation of the Plan would not result in the inefficient use of non-renewable energy resources.

C. CUMULATIVE IMPACTS

CEQA defines cumulative impacts as “two or more individual effects, which, when considered together, are considerable, or which can compound or increase other environmental impacts.” Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts that are individually limited but cumulatively significant. These impacts could result from the proposed project alone or together with other projects.

1. Methodology

When evaluating cumulative impacts, CEQA envisions the use of either a list of past, present, and probable future projects, including projects outside the control of the lead agency, or a summary of projections in an adopted planning document. This cumulative analysis uses the summary of treatment considerations and recommended treatment areas in the Plan, as well as those projects identified in related wildfire and planning documents pertaining to lands in the vicinity of the Study Area. In addition to the Land Use Development Plans prepared for specific EBRPD parks as identified in Section IV.A, Land Use and Planning Policy, the following summarizes other projects or adopted planning documents used to determine cumulative impacts from implementation of the Plan:

- *Annual Vegetation Management Plan for the Wildfire Prevention Assessment District, 2006*. City of Oakland, Oakland Fire Department, Fire Prevention Bureau.

³ Brownfield, Nancy. IPM Specialist, East Bay Regional Park District. 2009. Personal Communication with LSA Associates Inc. February 6.

- *2020 Hill Area Fire Fuel Management Program, 2003.* University of California, Berkeley.
- *2006 Long Range Development Plan.* Lawrence Berkeley National Laboratory.
- *East Bay Watershed Master Plan, 1996.* East Bay Municipal Utility District.
- *Fire Management Plan, 2000.* East Bay Municipal Utility District.
- *Low Effect East Bay Habitat Conservation Plan, 2008.* East Bay Municipal Utility District.
- *2003 Final Environmental Assessment for the East Bay Regional Park District Vegetation Management Projects.* East Bay Regional Park District.

The City of Oakland's *Annual Vegetation Management Plan for the Wildfire Prevention Assessment District* includes vegetation management activities utilizing similar treatment methods and considerations as those described in the Plan. This document also includes standards for achieving compliance with applicable land use and environmental regulations when conducting vegetation management activities.

The *2020 Hill Area Fire Fuel Management Program* describes fire fuel risk management objectives, strategies for implementation, and methodologies for treatment and compliance that include mitigations for reducing potential environmental effects. This document provides treatment prescriptions by vegetation type and addresses similar concerns to those identified in the Plan. Also included in this document are projects for consideration, which include:

- Creating a 100-foot sheltered fuel break along the border of the Panoramic residential area.
- Removing all eucalyptus trees that are not in areas of erosion concern.
- Removing all Monterey pine, cypress, and other plantation trees as they become senescent.
- Creating a ridgetop fuel break along the entire reach of Grizzly Peak, connecting with fuel breaks of the other major property holders such as the East Bay Regional Park District and East Bay Municipal Utility District.
- Removing or thinning trees and shrubs to a distance of 200 feet from either side of the roadway.
- Re-introducing domestic grazing animals for short-term controlled grazing over the larger tracts of scrub.
- As air quality permits, re-introducing broadcast prescribed burning into the ecosystem.
- Continuing annual work along Priority 1 and 2 areas.⁴
- Continuing working with local interest groups, such as the Claremont Canyon Conservancy, that share a common vision.

Subsequent to the preparation of the *2020 Hill Area Fire Fuel Management Program*, the Regents of the University of California have applied for a funding grant (PDMC-PJ-09-CA-2005-011) from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) to implement

⁴ The University of California, Berkeley's *2020 Hill Area Fire Fuel Management Program* defines Priority 1 areas as those requiring fuel reduction actions within 30 feet of the walls or property line of any neighboring private properties or structures to create defensible space. Priority 2 areas are those requiring fuel reduction actions within 30 feet of the walls or edges of Campus-owned public facilities and hardscape to create defensible space.

a fire mitigation project at UC Berkeley on a 58-acre parcel in Strawberry Canyon that is at high risk to produce or conduct a devastating wildfire. UC believes that action is needed to reduce the risk of fire to the campus, nearby residents and the City of Berkeley. FEMA requested consultation with the U.S. Fish and Wildlife Service for this project which resulted in a Biological Opinion dated August 3, 2007 (1-1-07-F-0259). FEMA has prepared a Draft Environmental Assessment (DEA) for this project pursuant to the National Environmental Policy Act (NEPA). Two other UC projects that are continuing in the planning, review and funding processes are the Claremont Canyon Fuel Management Project (PDMC-PJ-09-CA-2005-003) a eucalyptus tree removal project on 45-acres; and the FEMA 2006 PDM Grant Program: UC Subcontract to the City of Oakland for the Frowning Ridge Polygon, a vegetation reduction project on 84 acres.

The *2006 Long Range Development Plan* for the Lawrence Berkeley National Laboratory includes vegetation management activities consistent with the Laboratory's fire-safe vegetation management measures. These actions include annually removing tree limbs a minimum of ~~six~~ to ~~eight~~ feet from the ground, mowing or allowing grazing of grasses, removing brush from most vegetated areas of the site, and planting ornamental species near buildings for fire safety. This document's landscape management approach is consistent with urban forestry practices that ensure long-term health of trees and tree stands, and encourages native plants and removal of invasive exotic species, including French broom, artichoke thistle, Cape ivy, and pampas grass. Eucalyptus and other non-native tree stands across the site would continue to be removed or thinned. A Draft EIR was prepared on the *Long Range Development Plan* and was published in January of 2007.

The East Bay Municipal Utility District (EBMUD) adopted the *East Bay Watershed Master Plan* (WMP) in 1996 to define long-term management of the approximately 28,200 acres of EBMUD lands. The WMP was prepared to establish long-term management direction for District-owned lands and reservoirs that will ensure the protection of the District's water resources and preserve environmental resources on those lands. To ensure regional coordination in fire and fuels management planning, the WMP incorporates those elements of the 1995 *Fire Hazard Mitigation Program & Fuel Management Plan for the East Bay Hills* (a document upon which the proposed project – the draft Wildfire Hazard Reduction and Resource Management Plan – builds and implements) that are consistent with EBMUD's water quality and natural resource management goals.

EBMUD's *Fire Management Plan (2000)*, an implementation document for the EBMUD WMP, includes activities conducted to protect human life and property, provide for public safety, and protect and enhance water quality and other natural resources including watershed land uses on EBMUD land and adjacent properties. This document summarizes environmental protections and stipulates BMPs to be included during construction and management of fuel treatment areas and fuel breaks. EBMUD's *Fire Management Plan* includes actions to reduce wildfire hazards through prescribed burning, maintaining fire roads, and encouraging native vegetation on EBMUD lands.

EBMUD subsequently prepared the *Low Effect East Bay Habitat Conservation Plan*, (HCP) published in April of 2008 to implement the WMP. Specific WMP programs addressed in the HCP include water quality, forestry, livestock grazing, fire and fuels management and recreation and developed trails. The Habitat Conservation Plan was prepared in support of the pursuit of an Incidental Take Permit under Section 10(a)(1)(B) of the federal Endangered Species Act.

The 2003 *Final Environmental Assessment for the East Bay Regional Park District Vegetation Management Projects* (2003 EA) is another document that has been taken into account as part of the ongoing fuel management projects being proposed or undertaken. As stated previously in this EIR, over the past several years, the EBRPD Fire Department has been planning for and undertaking individual fuel reduction activities in specific areas within the hillside parks under an annual Fuels Treatment Plan. These ongoing fuel reduction activities have been primarily funded by FEMA grants, and were identified and evaluated for environmental effects under the National Environmental Policy Act (NEPA) in the 2003 EA.

An important agency that is involved in the consideration and coordination of regional fire management planning is the East Bay Hills Emergency Forum (HEF), which was created following the Oakland-Berkeley Firestorm of 1991. The HEF coordinates the collection, assessment, and sharing of information on East Bay Hills fire hazards, and provides a forum for building interagency consensus on developing fire safety standards and codes, incident response and management protocols, public education programs, multi-jurisdictional training, and fuel reduction strategies. The HEF currently includes members from the Cities of Berkeley, El Cerrito, and Oakland; the California Department of Forestry and Fire Protection; the Moraga Orinda Fire District; EBRPD; the East Bay Municipal Utility District; Lawrence Berkeley National Laboratory; and the University of California, Berkeley. The HEF created the Vegetation Management Consortium (VMC) that developed the 1995 *Fire Hazard Mitigation Program & Fuel Management Plan for the East Bay Hills*. After a full review and considerable public debate, the EBRPD board accepted the principles described in the VMC Plan in 1996.

2. Cumulative Effects of the Proposed Wildfire Hazard Reduction and Resource Management Plan

The following analysis examines the cumulative effects of the Plan and other proposed wildfire fuel management plans for the East Bay Hills, as described above. The potential cumulative effects of the Plan and plans for adjacent wildlands are summarized below for each of the topics analyzed in Chapter IV of this EIR.

a. Land Use. Implementation of all of the vegetation management plans to reduce wildfire risks within and in the vicinity of the Study Area would not change land uses within the parks or within the East Bay from current uses. All lands within the Study Area are currently used as open space and recreation areas consistent with each park's designation by EBRPD as a regional park, regional preserve, regional recreation area, or regional shoreline. Further, the Plan is consistent with and supports the objectives and policies of the District's Master Plan and existing land use plans for the Study Area parks. Therefore, no cumulative adverse effect on land use would occur as a result of implementing the Plan. No mitigation would be required.

b. Biological Resources. The East Bay Hills, which encompass the Plan Area and cumulative projects, are a mosaic of plant communities, including grassland, chaparral, and woodland communities. These communities have been substantially altered over time due to human activity, including the suppression of fires and the introduction of non-native species. Fire suppression in particular has adversely affected the ecological health of communities dominated by native shrubs, many of which cannot reproduce without fire. The exclusion of fire has reduced the biodiversity of chaparral and north coastal scrub communities, and has diminished the diversity of plant

communities, as grasslands (including native coastal prairie) have been invaded by coyote brush and other species.

Sensitive plant communities in the East Bay Hills include coastal prairie, which is a remnant of the original native perennial grasslands that covered the hills and valleys in much of the coastal zone in central and northern California. Coastal prairie has been largely displaced by non-native annual grassland due to the introduction of non-native grasses, heavy livestock grazing, fire suppression, and other factors. Many wildlife species forage in grasslands, such as gopher snake (*Pituophis catenifer*) and red-tailed hawk (*Bufo jamaicensis*). North coastal scrub supports a high level of diversity because of a complex structure and an abundance of food sources for wildlife. Species found in this community include California quail (*Callipepla californica*), dusky-footed woodrat (*Neotoma fuscipes*), and California slender salamander (*Batrachoseps attenuatus*). Riparian woodland occurs along streams and on the edges of seeps, ponds, and freshwater marshes. Riparian woodlands that form corridors along stream courses in open environments like grasslands are especially attractive to wildlife due to the presence of perch sites, shelter, foraging, or dispersal habitat. Other sensitive communities, such as serpentine bunchgrass grassland, are rare in the East Bay Hills due to the spread of non-native species and other factors. In the region, many of the communities listed above are threatened by the spread of annual grassland, eucalyptus woodland, and other communities dominated by non-native species. The cumulative projects listed above are generally intended to protect native plant communities, and in some cases to restore native plant communities, where feasible.

Implementation of the vegetation management plans identified above would reduce the risk of a wildfire in identified high hazard areas within the East Bay Hills and especially along the wildland-urban interface. The fuel reduction actions identified in these plans would include the treatment of vegetation at defined treatment areas, including the thinning or removal of selected trees and tree stands, thinning or removal of shrubs and understory vegetation, mowing or grazing of grasses and shrubs, and clearing excessive residual dry matter to reduce ladder fuels and total fuel loads within treatment areas.

The impacts to biological resources associated with each of the cumulative projects are summarized as follows. However, it should be noted that these projects are generally programmatic in nature, and specific impacts – including the acreage of affected plant and animal communities – and specific timing of management activities have not been identified in most cases.

- Annual Vegetation Management Plan for the Wildfire Prevention Assessment District, 2006. Specific impacts to plant and animal communities are not quantified, but adverse effects to vegetation, wildlife, and special-status species would be mitigated by the preparation of pre-construction surveys and adherence to timing/avoidance measures, best management practices, and post-treatment monitoring, maintenance, and vegetation management.
- 2020 Hill Area Fire Fuel Management Program, 2003. Fuel management activities would be focused on approximately 10 percent of the Hill Area wildlands (comprising a total of approximately 70 acres). Short-term impacts to critical biological resources would be mitigated to a less-than-significant level through the use of treatment methods that avoid protected plant and wildlife species (e.g., reducing fuel volume without eliminating individuals), maintaining open grasslands, speeding succession towards woodland communities, and implementing protection measures for specific species. According to the 2020 Hill Area Fuel Management Program: “Because the Program would remove predominantly exotic, high-hazard vegetation and

encourage lower-fire hazard, native plant species composition, long-term impacts to Program area vegetation and wildlife would be beneficial.” No known wetlands, marshes, riparian habitat, or vernal pools are identified in the 2020 Hill Area Fire Fuel Management Program for fuel management activities. Therefore, no significant impacts to these communities are anticipated.

- 2006 Long Range Development Plan. According to the EIR for the Long Range Development Plan (LRDP), all of the impacts of the LRDP on biological resources would be reduced to a less-than-significant level through implementation of mitigation measures. These mitigation measures include:
 - Avoidance of raptor and special-status bird species nests using the findings of pre-construction surveys;
 - Avoidance of special-status bat roosts using the findings of pre-construction surveys;
 - Changes to the schedule, setting, and design of specific projects or management plans using a habitat assessment;
 - Implementation of the Campus Specimen Tree Program;
 - Replacement of lost trees, as specified in the Landscape Master Plan and other existing policy documents;
 - Stewardship of existing landscaping and use of native vegetation;
 - Continued revision and implementation of the Strawberry Creek Management Plan; and
 - Design of specific projects to avoid wetlands, riparian zones, and wildlife corridors.
- East Bay Watershed Master Plan, 1996. A key goal of the East Bay Watershed Master Plan is to “[m]aintain and enhance biological resource values on District lands through active management and careful coordination with other resource management programs.” The East Bay Watershed Master Plan contains guidelines that to reduce impacts to biological resources to a less-than-significant level including: enhancement of habitat for threatened and endangered species; designing management activities to limit habitat fragmentation; and coordinating with other agencies to improve biodiversity.
- Fire Management Plan, 2000. This plan covers approximately 28,000 acres of land and water surface in the Bay Area. Specific impacts to biological resources associated with the Fire Management Plan are expected to be minimized through compliance with EBMUD’s “Biodiversity Guidelines,” which were developed by EBMUD Fisheries and Wildlife staff. The Biodiversity Guidelines provide strategies to ensure the following activities are protective of biological values (including, in particular, effects to native bird species and biodiversity hotspots): bulldozer use; application of retardants; prescribed burning; disking; mowing; plowing; brush rake use; and logging.
- Low Effect East Bay Habitat Conservation Plan, 2008. The Low Effect East Bay Habitat Conservation Plan could result in the clearing of creek channels (up to 30 acres over the term of the permit); the management of spillways such that California red-legged frog habitat (0.62 acre) and 0.62 acre of western pond turtle habitat would be adversely affected; and other activities that would adversely affect protected species and could result in the introduction of non-native species. However, the implementation of avoidance and minimization measures identified in Section 5 of the plan would reduce impacts to protected species and other biological resources to a less-than-significant level.

- 2003 Final Environmental Assessment for the East Bay Regional Park District Vegetation Management Projects. The Vegetation Management Projects comprise approximately 831 acres; eucalyptus forest comprises 298 acres, or 36 percent of this area. The Environmental Assessment prepared for the project does not quantify impacts to specific plant and animal communities. However, the Environmental Assessment states that the project could adversely affect vegetation, wildlife, and special status species. These impacts would be avoided or minimized through the implementation of management activities according to “well-defined, site-specific plans” and follow-up with “maintenance, monitoring, and revegetation.”

As summarized above, due to the presence of special-status plant and animal species within the region, implementation of treatment actions has the potential to negatively impact these species. To comply with federal, State and local laws and to ensure the Plan does not result in significant biological impacts, all of the vegetation management plans contain specific BMPs and treatment guidelines to minimize potential impacts on special-status species. In general, these BMPs and treatment guidelines would require resources to be treated in a customized way so that impacts are reduced. For instance, the 2006 LRDP would impose a series of mitigation measures on future development activities, including measures that require pre-construction surveys to be conducted for protected animal species, and modification of disturbance patterns associated with specific projects to avoid these animals. In general, the other cumulative projects include similar resource protection measures, including the use of low-disturbance vegetation removal methods (e.g., the removal by hand of individual tree specimens) such that wildlife would be protected. Incorporation of these BMPs in treatment actions, implementation of the mitigation measures identified in required environmental documents prepared under CEQA and NEPA associated with these regional programs, meeting the requirement that these programs receive necessary permits and approvals, and regional coordination (primarily through the HEF) regarding wildfire management planning and projects would reduce potential impacts to biological resources to a less-than-significant level. Taking into account that each of the cumulative projects would include stringent resource protection measures, the vegetation management projects, when considered together, would not result in cumulative biological impacts. Moreover, the environmental effect of the EBRPD Plan, when viewed in connection with the other vegetation management plan, is not significant, and the Plan would not be expected to make a significant contribution to cumulative adverse impacts to biological resources, as summarized below:

- Grasslands. A relatively small portion of total grassland vegetation in the Study Area would be subject to treatment (415 acres out of a total of 2,652 total acres of grassland vegetation). Adverse impacts to this natural community would be reduced through the implementation of guidelines, best management practices, and other considerations outlined in the Plan, including: the incorporation of performance standards into grazing leases and management plans that address considerations such as sensitive areas (e.g., riparian zones); invasive plants; and carrying capacity of livestock; identification, flagging, and avoidance of special-status plant species; and timing of treatment to avoid breeding periods of protected species. In addition, certain non-native communities would likely be converted to native grasslands as part of the Plan (resulting in a net gain of grassland habitat). Because in the long-term the Plan would be likely to increase grassland coverage, the Plan would make a less-than-significant contribution to cumulative grassland loss.
- Maritime Chaparral. The Plan would affect approximately 7.7 acres of maritime chaparral habitat. However, adverse impacts to this community would be minimized through the implementation of measures such as: the retention of a minimum percentage of shrub cover; the

use of low-impact, site-specific treatments such as hand-cutting; and treating flammable vegetation after seed set, so that native species can continue to reproduce. The adverse impacts of the Plan on maritime chaparral would be confined to the Study Area and would be short-term in nature (native species would replace removed non-native species over time). Therefore, the Plan would make a less-than-significant contribution to the cumulative loss of maritime chaparral.

- *North Coast Scrub and Coyote Brush Scrub.* The Plan would affect approximately 312.6 acres of north coast scrub and approximately 309.7 acres of coyote brush scrub. However, adverse impacts to these communities would be reduced through the implementation of guidelines, best management practices, and other considerations from the Plan, including: the identification of Alameda whipsnake habitat and the implementation of avoidance measures, and monitoring of activities that may result in disturbance to the habitat of protected species. Similar to the other cumulative projects, the Plan would not be expected to result in a significant decline in the population of Alameda whipsnake or other protected species associated with north coast scrub and coyote brush scrub. Therefore, impacts to protected species associated with north coast scrub and coyote brush scrub would be minimized and the Plan's potential impacts would not be cumulatively considerable.
- *Oak-Bay Woodland.* The Plan would affect approximately 399.7 acres of oak-bay woodland habitat. However, adverse impacts to this community would be reduced through the implementation of guidelines, best management practices, and other considerations from the Plan, such as using pre-treatment surveys to identify protected species, and felling trees in a way that reduces the spread of sudden oak death (SOD). In addition, the Plan envisions the conversion of non-native habitat types to oak-bay woodland; thus, the habitat type could expand in size and quality with implementation of the Plan. Because adverse impacts to oak-bay woodland would be short-term and the Plan would likely increase the coverage of the habitat type in the region, the Plan would make a less-than-significant contribution to the cumulative loss of oak-bay woodland.
- *Riparian Woodland and Aquatic Habitat.* The Plan would result in direct impacts to approximately 19 acres of willow riparian habitat and would indirectly affect aquatic habitat. Adverse impacts to these communities would be reduced through the implementation of guidelines, best management practices, other considerations, and mitigation measures, including avoiding management activities in healthy stands of riparian forest and extremely limited use of pesticides in areas with California red-legged frog habitat. Culverts would be replaced such that erosion and other adverse effects to aquatic habitat would be minimized. Because the impacts to these communities would be short-term (i.e., they would only include temporary impacts such as erosion and pesticide application), they would not combine with similar impacts associated with other projects to create a cumulatively considerable impact.
- *Nesting Birds.* As required by Mitigation Measure BIO-2, nest surveys would be conducted within 15 days of treatment activities and protected nesting birds would be avoided. Other cumulative projects would be required to implement similar measures. Therefore, the impact of the Plan on nesting birds would not be cumulatively considerable.
- *Non-native Plant Species.* The new strategic fire road could introduce exotic plants into the area. However, such introduction would be minimized through implementation of Mitigation Measure BIO-3, which would require revegetation of the road shoulders with a native grass seed mix and the monitoring of non-native species. Therefore, non-native species would not be expected to spread to adjacent areas and the Plan's contribution to the cumulative spread of invasive species would be less than significant.

- Endangered Species Act. Mitigation Measure BIO-4 would require EBRPD to coordinate with the USFWS to ensure that the Plan would meet Endangered Species Act requirements. Complying with all terms of incidental take permits granted by USFWS, together with the implementation of the measures described above, would ensure that the Plan's impacts to endangered species would not be cumulatively considerable. ~~, and no significant cumulative impacts relative to biological resources are expected to result.~~

c. Geology, Soils, and Seismicity. The analysis of geology, soils, and seismicity (Section IV.C of this EIR) addresses cumulative impacts that could result from implementation of the Plan and other wildfire risk reduction programs. Impacts related to geotechnical issues tend to be relatively site specific and mitigated on a case-by-case basis. As noted in that section, implementation of the Plan would not expose an increased number of people or structures to seismic hazards because the project would not build new structures or draw more people to the seismically-active East Bay region. The project would not affect, or be affected by, expansive soils because no new structures or infrastructure would be constructed that could be affected by these soils. The proposed project would not include construction of new on-site waste water disposal systems, and therefore potential impacts related to soil capability to support septic systems would not be applicable. Where vegetation is removed to reduce wildfire hazards, these fuel reduction activities could result in increased slope instability. However, slope instabilities would be localized in that they would not combine with instabilities associated with the cumulative projects. Implementation of the BMPs identified in the Plan for vegetation treatments as well as mitigation measure GEO-1 included in Section IV.C would reduce these site-specific impacts to a less-than-significant level. As a result, no cumulative impacts to geology, soils, and seismicity would result from implementation of the Plan.

d. Hydrology and Water Quality. The analysis of hydrology and water quality in Section IV.D addresses the potential cumulative impacts that could result from vegetation treatment actions where erosion and sedimentation into creeks and other water bodies could occur. Cumulative projects outside the Study Area would result in similar types of impacts. Implementation of the Plan would not deplete groundwater supplies or place housing within a 100-year flood hazard area because no new development is included as part of the Plan. The Plan also does not propose construction of any facilities in the shoreline parks that would be at risk for coastal hazards such as a tsunami, seiche, or mudflow or sea level rise and extreme high tide.

The vegetation management programs for fuel reduction considered in this cumulative analysis include different treatment options to reduce fuel loads. Some of the treatment options involve actions that will result in ground disturbance, and therefore there may be localized effects to hydrological features and water quality as a result of these treatment actions. Localized effects, such as erosion would likely be reduced both spatially (as sediments and other pollutants travel away from the source) and over time (as areas are revegetated and sediment release is reduced). Maintaining the hydrologic and water quality conditions that distinguish EBRPD lands was a consideration, however, and each program and subsequent environmental analysis document, includes goals, objectives, BMPs and mitigation measures designed to avoid or minimize potential impacts to hydrology and water quality resources. The inclusion of these policies and BMPs would ensure the Plan does not have a significant contribution to any ~~reduce~~ cumulative hydrology and water quality impacts ~~to a less than significant level.~~

The treatment approaches included in the Plan and as part of the cumulative projects could entail the use, where necessary, of carefully-controlled quantities of herbicides. Chemical use would be subject to the stringent controls listed under “Best Management Practices for Chemical Treatment” (see page 203), including the reporting and monitoring of chemical use data; performance of chemical treatment in accordance with EBRPD integrated pest management policies; and adhering to State rules regarding application of herbicides near waterways. Because the Plan and the cumulative projects would use limited quantities of chemicals, and any chemicals would be applied judiciously in accordance with best management practices aimed at preventing contamination of waterways, the Plan’s cumulative contribution to water pollution associated with chemical use would be less than significant. In addition, all chemicals used to manage vegetation would be expected to bio-remediate over time.

It should be noted that wildfire accelerates erosion rates to the degree that post-fire erosion is considered a major factor in overall sediment production.⁵ If these vegetation management plans were not implemented to prevent and/or minimize wildfires, overall erosion rates could increase due to accelerated post-fire erosion and sedimentation. Therefore, the cumulative effects of the Plan would also be less than that which could potentially occur in the event of significant wildfires in the Study Area.

e. Hazards and Hazardous Substances. Section IV.H, Hazards and Hazardous Substances, evaluates cumulative effects of the use, storage, and disposal of hazardous materials (including pesticides) in the Study Area. Vegetation management activities identified in other adopted planning documents applicable to lands in the vicinity of the Study Area contain similar guidelines and recommendations regarding the storage, use, and disposal of pesticides to those contained in the Plan, as required by State law. If not properly used, stored, and disposed, these chemicals can have potentially harmful effects on flora, fauna, and aquatic resources in the area. Therefore, the Plan includes policies and BMPs regarding pesticide storage, use, and disposal, including requirements designed to protect worker health and safety. Coupled with EBRPD’s Integrated Pest Management Program, the policies and BMPs included in the Plan and other planning documents would reduce potential cumulative impacts from pesticide use to a less-than-significant level. Any spills that occur in the Plan Area would likely be minor and contained by best management practices identified in the Plan such that they would not combine with spills in other areas and would not be cumulatively considerable.

Section IV.H also addresses potential hazards from wildfires in the Study Area. The purpose of the plans as considered for their cumulative effect on reducing the risk of a wildfire in identified high hazard areas through fuel reduction actions. Therefore, the beneficial cumulative impact of the Plan would be to reduce wildfire risks. Potential risks from wildfires would only increase if the Plan were not implemented, due to the nature of the vegetation types found in the Study Area and the current high hazard conditions found throughout the Study Area. Therefore, implementation of the Plan and other planning programs aimed at reducing wildfire threats would not contribute to any significant cumulative hazards and hazardous substances impacts.

⁵ Forrest, C.L., Harding, M.V., 1996. Erosion and Sediment Control: Preventing Additional Disasters after the Southern California Fires, in US Environmental Protection Agency Proceedings, Watershed 96.

f. Cultural and Paleontological Resources. Analysis of cultural and paleontological resources identified in Chapter IV.F, Cultural and Paleontological Resources, considers the potential impacts to these resources that could result from implementation of the Plan and other wildfire management plans. The programs considered for cumulative effects include different treatment options for fuels reduction and vegetation management. Some of the treatment options involve actions that will result in a greater level of ground disturbance than others. Archaeological deposits, built environment buildings and structures, human remains, or paleontological resources may be adversely impacted as a result of treatment actions. Examples of such impacts could include destruction of archaeological deposits, damage to buildings or structures, displacement of fossil resources, or the disturbance of human remains. Identifying and protecting cultural resources is required by State law during implementation of a project as defined by CEQA. Accordingly, the programs and plans and their associated environmental assessment documents contain policies and mitigation measures for avoiding or minimizing potential impacts to cultural and paleontological resources. Resource identification and avoidance is the preferred approach for determining potential treatment options for the Plan's recommended treatment areas. The selection of recommended treatment areas includes a cross-check for possible conflicts with cultural resources in the EBRPD database. The BMPs are implemented in concert with the cross-check to provide for the identification and protection of cultural resources.

Because potentially-significant impacts to cultural and paleontological resource could occur as a result of treatment actions, this EIR includes mitigation measures intended to reduce the Plan's incremental contribution to any such ~~these~~ impacts to a less-than-significant level. The inclusion of these mitigation measures, coupled with the BMPs and guidelines included in the Plan (such as requirements to exclude cultural resources from treatment areas), would reduce any adverse effect on cultural and paleontological resources within the Study Area. Similar adopted planning documents for vegetation management and their environmental analysis documents include similar provisions for the protection of cultural and paleontological resources consistent with applicable regulations. Implementation of the plans and programs are expected to yield long-term beneficial effects to cultural resources as the potential for destructive wildfire is reduced. Therefore, cumulative impacts to these resources resulting from implementation of vegetation management plans would not be significant.

g. Noise. Certain vegetation management treatment methods, such as the use of mechanical treatments and hand-operated machinery, could contribute to noise levels in the vicinity of those treatments. Treatment actions would be short term (i.e., they would typically only last for a few days or a week) and ~~would need to comply with the noise standards and ordinances of the jurisdictions associated with the location of the activities~~ would generally occur at a sufficient distance away from residential zones such that sensitive receptors would not be exposed to unacceptable noise levels. Users of open space could also be intermittently exposed to high noise levels when heavy equipment is being used. However, EBRPD has established protocols for diverting foot traffic away from areas subject to vegetation removal activities that would reduce the exposure of open space users to high noise levels (including associated cumulative effects associated with high noise levels.) In addition, the East Bay Hills Emergency Forum is an organization that allows for the coordination and sharing of information of agencies that conduct vegetation management activities in the East Bay Hills. The coordination of noise-producing activities would reduce short-term noise levels by allowing for the staggering of high noise-generating operations. Guidelines and BMPs are generally included in the programs and/or CEQA/NEPA documents of the cumulative projects to limit the operational periods

in which such activities would take place. ~~Similarly, short-term vibration impacts could occur during the operation of heavy equipment to conduct vegetation treatment activities.~~ The Plan and all the cumulative projects would intermittently generate high levels of noise when vegetation treatment activities require the use of motorized equipment. However, such activities would be short-term in nature, would occur at different times, and would be isolated over the landscape; thus they would not combine to create significant long-term increases in ambient noise levels. ~~However, these effects would be short-term and localized in nature (because they would generally not combine with other nearby vegetation management activities to create high noise levels)~~ and would not cumulatively contribute significantly to the ambient noise level of the East Bay.

No additional construction is included as part of the Plan. Therefore, noise impacts associated with construction activities would not occur. Cumulatively, only the Lawrence Berkeley National Laboratory's *Long-Range Development Plan* includes proposed construction activities; implementation of the vegetation management programs would not contribute any additional cumulative noise impacts beyond that which has already been accounted for and mitigated in the *Long-Range Development Plan* and its associated EIR. As a result, implementation of the Plan would not contribute to any cumulative adverse noise effects related to construction.

h. ~~Air Quality and Global Climate Change.~~ According to guidelines published by the Bay Area Air Quality Management District (BAAQMD), the determination of a significant cumulative air quality impact should be based on an evaluation of the consistency of the project with the local general plan, and of the general plan with the regional air quality plan.⁶ Vegetation management activities associated with the Plan and the cumulative projects could result in significant impacts to air quality resulting from prescribed burning, specifically the generation of suspended particulate matter (PM₁₀) over a 24-hour period and the exposure of sensitive receptors to substantial pollutant concentrations.

While certain vegetation management activities, such as prescribed burning and mechanical treatments to reduce wildfire risks, are likely to produce short-term elevations in regional pollutant levels the BAAQMD requires planning and management protocols for prescribed burning activities be implemented prior to, during, or following execution of prescribed burning to reduce the potential ~~for~~ elevated levels of pollution that may result from these activities and ensure the Plan does not significantly contribute to any cumulative air quality impacts associated with prescribed burns (see section IV.F in this EIR). These protocols include the following:

- Preparation of a smoke management plan that includes information such as: location and specific objectives of each burn; volume and arrangement of vegetation to be burned; fuel conditions; specifications for disseminating information to the public; particulate matter estimates; and certification by a qualified resource professional that the proposed burning is necessary to achieve the specific management objectives of the plan.
- Receive written approval of a smoke management plan.
- Conduct burns only on a permitted burn day.
- Notification on day of burn.
- Provide a written post-burn evaluation.

⁶ BAAQMD *CEQA Guidelines*, December 1999

In addition, the potential for conducting prescribed burns in the Plan Area is severely limited by safety, ecological, and air quality considerations. Because burns are only permitted when climatological conditions are appropriate (and when protected plant and animal species would not be harmed), they would likely occur infrequently in the Plan Area. As noted by the UC Office of Emergency Preparedness on their website, “Additionally, prescribed fire is also available as a tool that may be used as conditions warrant.”⁷ In addition, the potential pollution levels produced by such activities are significantly less, and are of a shorter duration, than the levels of pollution likely to be created in the event of a wildfire. The vegetation management activity selection process identified in the Plan further reduces the potential for elevated levels of pollution to occur when such activities are conducted by requiring EBRPD to undergo a rigorous selection process that takes into consideration the potential air pollution created by the various vegetation management and fuel reduction activities available for selection at each recommended treatment area. To further reduce these potential effects, EBRPD and any other agency, must only conduct certain activities, such as prescribed burns, according to stringent guidelines set forth by BAAQMD to ensure minimal creation of and exposure to any pollution generated by these activities.

Based on the above discussion, the potential for an individual plan or project to significantly deteriorate regional air quality or contribute to a significant health risk is small, even if the emission thresholds are exceeded. Because of the overall improvement trend on air quality in the air basin, it is unlikely the regional air quality or health risk would worsen from the current condition due to emissions from an individual vegetation management or fuel reduction activity conducted as part of implementing the Plan. Cumulatively, these vegetation management and fuel reduction activities will be dispersed across the calendar year according to the required conditions of the targeted vegetation, surrounding habitat requirements, and BAAQMD requirements, and as such would not substantially contribute to a net increase in any criteria pollutant in the region. As a result, any potential cumulative impacts on air quality ~~and global climate change~~ would be considered less-than-significant. The Draft EIR includes a discussion of cumulative air quality impacts on page 262.

i. Global Climate Change. The Forest sector is unique in that forests both emit greenhouse gases and uptake carbon dioxide (CO₂) to sequester it over the short and long term.⁸ Carbon sequestration is the process by which atmospheric carbon dioxide is absorbed by trees through photosynthesis and stored as carbon in trunks, branches, foliage, roots and soils. Several factors, such as large wildfires and forest land conversion, may cause a decline in the amount of carbon removed from the atmosphere.⁹

Accounting for changes in forest carbon is still a matter of some debate. Impacts of global climate change can worsen existing wildfire and insect disturbances in the Forest sector, creating new uncertainties in reducing emissions and maintaining sequestration levels over the long-term.¹⁰ In addition, the diversity of forest types and widespread disputes over the carbon consequences of various practices make it difficult to generalize about the opportunities to mitigate global climate

⁷ UC Berkeley, Office of Emergency Preparedness Website:
http://oep.berkeley.edu/programs/fire_mitigation/index.html

⁸ California Air Resources Board. 2008. *Climate Change Scoping Plan: a framework for change*. December.

⁹ Ibid.

¹⁰ Ibid.

change through forest carbon sequestration.¹¹ For example, foresters often cut vegetation to enhance growth of desired trees, which would store more carbon. However, cut vegetation releases CO₂, and the net effect depends on many factors, such as subsequent growth rates and the quantity and disposal of cut vegetation.¹²

Forestry is based on a biological system which may respond slowly to management measures. Trees store carbon at the fastest rates from around 10 to between 40 and 80 years of age, at which point they continue to store carbon but at a slower rate. The ARB Scoping Plan strategy to assist the State in meeting the goals of AB 32 is a “No Net Loss” strategy, which would maintain the 5 million metric tons (MMT) of CO₂eq emissions of sequestration through sustainable management practices, potentially including reducing the risk of catastrophic wildfire, and the avoidance or mitigation of land-use changes that reduce carbon storage.¹³ According to a study prepared by ICF Jones & Stokes for EBRPD evaluating the carbon sequestration potential on EBRPD lands, the average amount of CO₂ sequestered annually by the EBRPD’s lands is estimated to be 91,157 metric tons.¹⁴ By preserving natural land in perpetuity, the natural communities on EBRPD lands represent an important permanent carbon stock of 2.76 MMT of carbon.¹⁵

The potential occurrence of wildfire is probably the largest risk to any carbon sequestration activity in California.¹⁶ Fires are a natural part of the California landscape, yet there has been an increase in the extent of forest fires across the State in recent years. The rolling five year average for acres burned by wildfires on all jurisdictions increased in the past two decades from 250,000 to 350,000 acres (1987 to 1996) to 400,000 to 600,000 acres (1997 to 2006).¹⁷ An increase in wildfire frequency may mean an increase in GHG emissions.¹⁸ Fuel management activities leading to reductions in the potential for or risk of catastrophic wildfires would therefore reduce carbon and non-CO₂ GHG emissions from burning.¹⁹

Quantification of the specific GHG benefits associated with avoiding wildfire is difficult because of the unpredictable nature of fire and uncertainties concerning the future implementation of various fuel treatment methods and recommendations in the Plan. For example, the Plan is a long-term program for the reduction of fuels using different treatment methods depending on the vegetation types and habitats to be treated on over 3,000 acres of differing topography and other geographic, and environmental resource features. A key part of Draft Plan program, including fuel and biomass reduction to address wildfire risk, is the concept of adaptive management, which includes monitoring

¹¹ Congressional Research Service, 2007. Carbon Sequestration in Forests. RL31432. March 29.

¹² Ibid.

¹³ California Air Resources Board, 2008. *Climate Change Scoping Plan: a framework for change*. December.

¹⁴ ICF Jones & Stokes, 2008. Final Draft. East Bay Regional Park District Carbon Sequestration Evaluation. December.

¹⁵ Ibid.

¹⁶ California Energy Commission, 2004. Carbon Supply from Changes in Management of Forest, Range, and Agricultural Lands in California. CE-500-04-068F. March.

¹⁷ California, State of. Department of Forestry and Fire Protection, 2008. An Adaptation Plan for California’s Forest Sector and Rangelands. December 11.

¹⁸ Ibid.

¹⁹ California Energy Commission, 2004. Carbon Supply from Changes in Management of Forest, Range, and Agricultural Lands in California. CE-500-04-068F. March.

outcomes related to implementation of measures and programs in the Plan. Regardless of vegetation type, each treatment area must be assessed by a team of qualified personnel before finalizing prescriptions for specific treatment areas.²⁰ The treatment cycle continues with the monitoring phase and repetition of the process until the vegetation management goals identified in the fuel treatment plan for the treatment area have been met.

The Plan provides policies, guidelines and recommendations to manage fuels and protect lands in a manner consistent with State strategies and long-term climate goals. The activities identified in the Plan are intended to reduce the frequency and severity of wildfires, and as a result, reduce related CO₂ emissions in the cumulative condition. The effects of fire on carbon stocks are dependent on the intensity of the fire. An intense fire will destroy biomass (and anything else in its path including homes) and release a great proportion of the carbon to the atmosphere, while a less intense fire will fail to kill the majority of the trees.²¹ Carbon has several potential destinations during and after a fire: (1) surviving the fire to continue as live vegetation, (2) being volatilized during the fire and immediately released to the atmosphere, and (3) being divided between the pools of dead wood, soot, and charcoal. Soot and charcoal are stable forms of carbon and can remain unchanged for many years, while dead wood will decompose over time.²² The proportion of carbon volatilized versus surviving as vegetation varies with the fire intensity (see Table VI-1). For example, following intense fires, 60 percent of the affected carbon volatilizes and 15 percent survives as vegetation. For low intensity fires, 20 percent of the affected carbon volatilizes and 72 percent survives as vegetation.²³

Table VI.-1: Carbon Destination Assumptions for Various Fire Intensities

<u>Destination</u>	<u>High (Percent)</u>	<u>Mid (Percent)</u>	<u>Low (Percent)</u>
<u>Volatilized</u>	<u>60</u>	<u>40</u>	<u>20</u>
<u>Not Volatilized</u>	<u>25</u>	<u>15</u>	<u>08</u>
<u>Charcoal</u>	<u>06</u>	<u>03</u>	<u>02</u>
<u>Soot</u>	<u>11</u>	<u>07</u>	<u>04</u>
<u>Dead wood</u>	<u>08</u>	<u>05</u>	<u>03</u>
<u>Surviving vegetation</u>	<u>15</u>	<u>45</u>	<u>72</u>

Source: CEC, 2004. Baseline Greenhouse Gas Emissions for Forest, Range, Agricultural Lands in California. March.

Future wildfire frequency and size is unknown over the life of the Plan. Exact details of the treatment prescriptions and vegetation management goals for each treatment area will be determined with the pre-treatment site assessment to meet the Plan’s goals, objectives, guidelines and performance standards in the Vegetation Management Program (Chapter V of the Plan). As the Plan is a long-term management tool, the specific timing of vegetation removal, including the size, dimension, and number of trees, is not available at this time. Vegetation growth and vegetation type changes would

²⁰ LSA Associates, Inc., 2009. Wildfire Hazard Reduction and Resource Management Plan. July.

²¹ California Energy Commission, 2004. Baseline Greenhouse Gas Emissions for Forest, Range, Agricultural Lands in California. CE-500-04-069. March.

²² Ibid.

²³ ARB, 2009. Technical Support Document for California’s 1990-2004 Greenhouse Gas Emissions Inventory and 1990 Emissions Level. April 21.

also occur over the lifetime of the Plan in a manner that is difficult to predict. Therefore, specific calculations of the loss in carbon sequestration and related GHG emission calculations require a number of assumptions. Carbon sequestration and GHG estimates are provided herein for informational purposes only, as there is not yet an established quantified GHG emissions threshold.²⁴

(1) Existing Conditions. Table VI-2 shows the existing carbon storage and sequestration for the recommended treatment areas (RTA) in the Plan. These estimates are based on the methodology from the 2008 carbon sequestration study for 98,600 acres of EBRPD lands (which overlaps with but does not correspond exactly with the Study Area for the Plan).²⁵ The area for each vegetation type within the RTAs is measured in acres. “Current mean flux density” is the amount of carbon sequestered by each acre per year (measured in megagrams of carbon [Mg C]). “Current flux” is the average amount of carbon sequestered on an annual basis by each vegetation type calculated by multiplying the number of acres by the “current mean flux density”. “Mean carbon stocks” is the average amount of carbon (metric tons of carbon [MT C]) stored in the biomass of each vegetation type per acre. “Carbon stocks” is the average amount of carbon “permanently” stored in the biomass of each vegetation type.

Table VI-2: Existing Carbon Storage by Vegetation Type in the Recommended Treatment Areas

Vegetation Type	Area (acres)	Current Mean Flux Density (Mg C per acre per year)	Current Flux (MT C per year)	Mean Carbon Stocks (MT C per acre)	Carbon Stocks (MT C)
Non-native Coniferous Forest	144.1	0.7	101	123	17,720
Redwood Forest	17.9	1.0	18	223	3,987
Oak-Bay Woodland/Forest	325.2	0.4	130	61	19,838
Scrub	593.7	0.1	59	15	8,906
Grassland	424.7	0.1	42	1	425
Aquatic/Open Water	0.1	0	0	0	-
Freshwater Marsh	0.2	0.1	0	15	3
Eucalyptus Forest/Plantation	1,367.9	0.4	547	63	86,178
Riparian Woodland	16.0	0.1	2	15	240
Total	2,889.8	2.9	899	516	137,296

Source: LSA Associates, Inc., February 2010.

Notes: Mg C = Megagrams of carbon

MT C = Metric Tons of carbon

The RTAs include approximately 3,000 acres of which 2,890 acres are covered with a vegetation type (the remaining acres are covered by landscaped plants, impervious surfaces, or structures), or 2.9 percent of the total EBRPD lands evaluated in the ICF Jones & Stokes 2008 study.²⁶ Vegetation types within the RTAs sequester approximately 899 metric tons of carbon per year and have approximately 137,296 metric tons in carbon stocks. Carbon sequestration can be expressed in terms of CO₂

²⁴ While BAAQMD is currently in development of specific quantified thresholds for various project- and plan-level analyses, those thresholds would not be applicable to an analysis of forest management activities (e.g., prescribed burns), wildfires, and carbon sequestration.

²⁵ ICF Jones & Stokes, 2008. Final Draft. East Bay Regional Park District Carbon Sequestration Evaluation. December.

²⁶ For the purpose of this analysis, the acreage total for the RTAs presented in this section does not include approximately 63 acres of developed or landscaped areas.

emissions by converting each metric ton of carbon to CO₂ by a factor of 3.66. Therefore, the total annual sequestration of CO₂ is approximately 3,292 metric tons. This factor does not account for any loss by disturbance to vegetation, such as wildfire or severe infestation.

(2) Current Maintenance Activities. According to District staff,²⁷ on an annual basis, EBRPD treats fuels on 400 to 700 acres. Within the EBRPD lands, approximately 100 to 500 acres are treated each year by hand labor or mechanical treatment techniques, including the use of contractors, handcrews and neighborhood volunteer groups. These treatment efforts include tree removal on 50 to 250 acres through clearcutting of all trees, heavy thinning/selective removal, light thinning/selective removal, occasional selective tree removal, and stump-sprout maintenance removal. The sizes of trees removed vary dramatically and are largely dependent on the type of treatment activities. For example, heavy thinning would typically remove 300 to 700 trees per acre with sizes that vary from 2 to 24 inches diameter at breast height (dbh). During stump-sprout removal, approximately 20 to 200 trees per acre that vary from 1 to 3 inches dbh would be removed. Another 200 to 250 acres of EBRPD lands are treated by goat grazing to reduce fuels.

Prescribed and controlled burns reduce the volume of fuel through combustion; fires are conducted under specific regulations when air quality and climate conditions permit both adequate combustion and proper control. This technique can be used to burn piles of cut brush or trees (pile burns), or over a designated prepared area (broadcast burn). Both broadcast and pile burning are often used in conjunction with hand labor and mechanical treatment methods as a means of removing excess debris. Approximately 50 to 100 acres of EBRPD lands have the fuels piled, then the piles are burned under favorable weather and air quality conditions. EBRPD burns about 150 brush piles per year with each pile containing 6 to 8 cubic yards of brush; this totals 1,200 cubic yards, or 324 tons per year. Methane (CH₄) emission factors for burning are based on the vegetation type and can range from 3.7 to 12.2 pounds per ton of material burned.²⁸ Using the most conservative estimates of 12.2 pounds per ton for temperate forests, current brush pile activities result in 1.8 metric tons of CH₄ emissions per year. EBRPD “broadcast burns” another 15 to 70 acres for resource management purposes.

(3) Potential Plan Cumulative Effects. Existing and future disturbances, such as wildfire, create uncertainties in reducing emissions and maintaining carbon sequestration levels over the long-term, requiring more creative strategies for adapting to these changes. As mentioned in the Plan, there were a total of 11 Diablo wind-driven fires during the 75-year period between 1923 and 1998 that burned a total of 9,840 acres. On a cumulative basis, fuel management strategies conducted by EBRPD and the other open space land managers identified above (e.g., UC Berkeley, EBMUD, the City of Oakland) have the potential to reduce the risk of catastrophic wildfires and associated carbon emissions.²⁹

While not all areas will experience the same or maximum reduction of vegetation as evaluated in this EIR on the Plan, this analysis focuses on the Plan’s effect on carbon sequestration and storage associated with the reduction in Monterey pine and eucalyptus trees. As indicated in Table VI-3, the annual sequestration and carbon stocks with removal of vegetation would initially be lower than the

²⁷ Swanson, John. Assistant Fire Chief, EBRPD. 2010. Personal communication with LSA Associates, Inc. March.

²⁸ Environmental Protection Agency. 1996. AP-42. Chapter 13: Miscellaneous Sources. Wildfires and Prescribed Burning. October.

²⁹ California Air Resources Board. 2008. *Climate Change Scoping Plan: a framework for change*. December.

existing conditions in the RTAs. Annual sequestration and carbon storage were estimated by calculating the percent reduction that would occur in Monterey pine and eucalyptus trees as a result of thinning tree stocks to 25 foot spacing per the performance standards contained in Plan Chapter V, Vegetation Management Program. This percent reduction was applied to the total acreage of each vegetation type to calculate the revised amounts of carbon sequestration and storage in the RTAs. Table VI-3 shows that the annual sequestration could be reduced from 3,295 metric tons of CO₂ to 1,113 metric tons of CO₂. Overall carbon storage could also be reduced from 137,411 metric tons of carbon to 41,825 metric tons.

Table VI-3: Future Carbon Storage and Sequestration in the Recommended Treatment Areas

	<u>Acres</u>	<u>Annual Sequestration (MT CO₂)</u>	<u>Carbon Stock (MT C)</u>
<u>Total EBRPD Lands in ICF 2008 Study</u>	<u>98,600</u>	<u>91,157</u>	<u>2,759,206</u>
<u>RTAs – No Treatment</u>	<u>2,897</u>	<u>3,295</u>	<u>137,411</u>
<u>Percent of Total</u>	<u>2.94</u>	<u>3.61</u>	<u>4.98</u>
<u>RTAs - Plan</u>	<u>1,506</u>	<u>1,113</u>	<u>41,825</u>
<u>Percent of Total</u>	<u>1.53</u>	<u>1.22</u>	<u>1.52</u>

Source: LSA Associates, Inc., 2010. and ICF Jones & Stokes, 2008. Final Draft. East Bay Regional Park District Carbon Sequestration Evaluation. December.

Notes: MT = Metric Tons

However, simply considering the loss in vegetation does not present a complete picture of the impacts of the Plan. Therefore, this analysis (and the premise and goals of the Wildfire Hazard Reduction and Resource Management Plan) also assumes that a reduction in fuels (i.e., high hazard vegetation) will result in a reduction of fire intensity and the risk of a wildfire being uncontrollable. As discussed earlier, the effects of fire on carbon stocks are dependent on the intensity of the fire. Table VI-4 compares the anticipated changes in sequestration and carbon stocks assuming that a high intensity fire will affect the RTAs with existing vegetation patterns, but reduced fuel loads from implementation of the Plan would result in a low-intensity fire affecting the RTAs.

The estimated loss in surviving vegetation and net remaining carbon stock after high- and low-intensity wildfires indicate that reduction in fuels associated with the Plan would result in lower initial carbon stocks; carbon storage would decrease to approximately 33,457 metric tons. However, the amount of surviving vegetation after a wildfire would be higher with implementation of the fuel treatments recommended in the Plan. This analysis and these estimates do not include improvements to vegetation health after treatments, including the potential for an increase in growth of remaining vegetation or regrowth of new vegetation that could occur as a result of the fuel reduction strategies (e.g., growth of oak/bay woodland trees after thinning of Monterey pine and eucalyptus trees), which would further increase carbon sequestration and storage.

Table VI-4: Carbon Stocks after Wildfire Scenario

	<u>Carbon Stock (MT C)</u>	<u>Loss in Carbon Stock from Wildfire (MT C)</u>	<u>Net Remaining Carbon Stock (MT C)</u>	<u>Carbon in Surviving Vegetation (MT C)</u>
RTAs – No Treatment	137,411	82,474	54,937	20,612
RTAs – Implementation of Plan	41,825	8,368	33,457	30,114

Source: LSA Associates, Inc., 2010.

Notes: Assumes High Intensity Fire affects "Existing" conditions and Low-Intensity Fire affects "Plan" conditions with reduction in fuel loads. Carbon loss includes volatilized carbon and carbon loss from decay of dead wood. Carbon will continue to be stored in charcoal and soot. MT C = Metric Tons of carbon

(4) Future Maintenance Activities. As discussed above, the EBRPD annually treats fuels on 400 to 700 acres, including hand labor or mechanical treatment techniques, goat grazing to reduce fuels, and prescribed burning. According to District staff,³⁰ because no additional funding or staffing has been identified in association with implementation of the Plan, the District expects that the current level and intensity of the fuel reduction activities currently taking place on an average annual basis will continue during Plan implementation. EBRPD estimates that the number of planned burns will continue at approximately 150 brush piles per year. Emission factors for burning do not change over time; therefore, estimated CH₄ emissions will continue to be 1.8 metric tons per year over the life of the Plan. GHG emissions from ongoing project operations and maintenance for the District and the other open space land managers are unlikely to be significantly different from existing levels, and would therefore not be cumulatively significant.

On December 30, 2009, the California Natural Resources Agency adopted CEQA Guidelines Amendments related to Climate Change. These amendments become effective on March 18, 2010, and state that the “lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project...and/or (2) Rely on a qualitative analysis or performance based standards.” The qualitative analysis here considers the Plan’s consistency with the State goals and plans, including fuel reduction, to minimize the frequency and magnitude of catastrophic fires and associated GHG emissions.

In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE has identified five forestry strategies for reducing or mitigating greenhouse gas emissions:³¹

- Reforestation to sequester more carbon,
- Forestland conservation to avoid forest loss to development,

³⁰ Wiese, Brian. 2010. Chief of Stewardship and Planning, EBRPD. Personal communication with LSA Associates, Inc. March.

³¹ California, State of. Department of Forestry and Fire Protection. CAL FIRE Climate Change Program. Available at http://www.fire.ca.gov/resource_mgt/resource_mgt_EPRP_Climate/climate_change.php.

- Fuels reduction to reduce wildfire emissions and utilization of those materials for renewable energy.
- Urban forestry to reduce energy demand through shading, increase sequestration, and contribute biomass for energy generation, and
- Improved management to increase carbon sequestration benefits and protect forest health.

Climate change may modify the natural fire regimes in ways that could have social, economic and ecological consequences. The size, severity, duration, and frequency of fires are greatly influenced by climate. Due to decades of fire suppression activities, sustained drought, and increasing pest infestations, large, episodic, and unnaturally hot fires are an increasing trend on California's wildlands.³² Reduced winter precipitation and earlier spring snowmelt deplete the moisture in soils and vegetation, leading to longer growing seasons and drought. These increasingly dry conditions create more favorable conditions for ignition and are believed to be the main reason for the increased trend in wildfire risk. Higher temperatures also increase evaporative water loss from vegetation, increasing the risk of rapidly spreading and large fires.³³

There is an emerging view among scientists that fire hazard mitigation (e.g., through vegetation treatments or prescribed fire) may be able to play a beneficial role in long-term forest carbon sequestration, emissions reductions, and climate change mitigation. For example, recent studies have concluded that widespread prescribed burns can reduce fire emissions of carbon dioxide in the West by an average of 18 to 25 percent.³⁴ However, the specifics of where and how this can achieve the greatest effect are still open questions. The CAL FIRE strategies were recognized by the Governor's Climate Action Team reports and by the Air Resources Board in the AB 32 Scoping Plan. The Plan is consistent with CAL FIRE Forestry strategies and will reduce greenhouse gases in the long term consistent with AB32. The Plan would not conflict with any applicable regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Therefore, the Plan's contribution to cumulative GHG emissions would be less than significant.

j. Visual Resources. The purpose of the vegetation management programs considered in this analysis is to reduce the risk of a wildfire in the East Bay region. These fuel reduction actions would include the treatment of vegetation at defined treatment areas, including the thinning or removal of selected trees and tree stands, thinning or removal of shrubs and understory vegetation, mowing or grazing of grasses and shrubs, and clearing excessive residual dry matter to reduce ladder fuels and total fuel loads within treatment areas.

The majority of the landscape in the recommended treatment areas is composed of large stands of blue and red gum eucalyptus trees and Monterey pines, limiting the overall visual variety of those specific areas and often blocking scenic vistas. The vegetation management activities likely to occur

³² California Environmental Protection Agency. 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

³³ California Energy Commission. 2008. *The Future Is Now. An Update on Climate Change Science, Impacts, and Response Options for California*. September.

³⁴ University Corporation for Atmospheric Research. 2009. *Prescribed burns may help reduce U.S. carbon footprint*. March 16. Available at <http://www2.ucar.edu/news/prescribed-burns-may-help-reduce-us-carbon-footprint>.

at recommended treatment areas within the Study Area would consist of a number of various treatment methods, including hand labor, mechanical, and chemical treatment as well as grazing of selected areas by livestock or the prescribed burning of brush or leaf litter. Because the vegetative cover of the hillside within the East Bay Hills and shoreline parks varies significantly across hillsides, within canyons, and along the shore, the likelihood of any one vegetation management activity occurring over a sufficiently large area to substantially adversely affect a scenic vista is minimal. For example, prescribed burns have the potential to temporarily but adversely impact the visual quality or character of a large expanse of area, but also have the potential to substantially improve the visual quality of a scenic vista by removing the younger specimens within the understory and thinning the overall density of tree stands and brush-laden areas. Prescribed burns also provide the beneficial impacts of promoting new growth, particularly native grass, forbs and wildflowers.

While there will be short term visual changes related to vegetation management to reduce wildfire risks, and especially changes related to tree clearing, wildland landscapes are dynamic, and the open space within each planning entity's jurisdiction (e.g., UC Regents EBMUD, City of Oakland) will be managed according to the stated goals and objectives of that particular agency after treatment to support a low fire hazard mix of vegetation types. Additionally, there are potential beneficial effects from vegetation removal related to opening up scenic views and vistas to viewers both within and outside the Study Area. Considered alongside vegetation treatment actions included in the adopted planning documents described above, cumulative, permanent, adverse visual effects of treatment actions diffused across the entirety of the East Bay hills would be less-than-significant given the total size and expanse of the area that might actually be treated at any one time.

D. EFFECTS FOUND NOT TO BE SIGNIFICANT

Meetings among EBRPD staff and the project team involved in the development and processing of the Plan determined the preliminary scope of this EIR. In addition to these meetings, a Notice of Preparation (NOP) was circulated on April 16, 2008, and a public scoping meeting was held on May 7, 2008, to solicit comments from the public about the scope of this EIR. Written comments received on the NOP are provided in Appendix A and were considered in the preparation of the final scope for this document and evaluation of the Plan throughout this EIR.

The environmental topics analyzed in Chapter IV, Setting, Impacts, and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts among the project team and members of the public, even though it was determined that many would not experience significant adverse impacts. The following topics were excluded from further analysis because it was determined during the scoping phase and through preparation of an Initial Study contained in Appendix A of this EIR that these impacts would be less-than-significant: Agricultural Resources, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation, and Utilities. ~~Each of these topics scoped out of this EIR is discussed in more detail in Chapter I, Introduction.~~

The Plan and cumulative projects would result in a temporary disruption to recreational facilities, including trails in the East Bay Hills open space network. For instance, users may be diverted from certain trail segments when hazardous vegetation removal activities (such as prescribed burns) are conducted, or when herbicides have been applied. Cumulatively, impacts to recreational facilities would be less than significant for the following reasons: 1) closure of recreational facilities would be

temporary and would occur for short durations (generally a few days to 1 week); 2) EBRPD and other land management agencies are adept at undertaking vegetation management activities in a way that avoids or minimizes disruption to recreational users; and 3) the area offers a wealth of recreational opportunities, and if a particular trail or park zone is temporarily closed, a nearby area will likely function as a reasonable substitute.

The Plan and cumulative projects could also result in indirect impacts to recreational opportunities, including the introduction of smoke to open space areas and reduced shade (if eucalyptus and pine trees are removed in favor of native vegetation). Indirect impacts associated with smoke would be infrequent and geographically dispersed, and would likely not result in park-wide closures. Therefore, such indirect effects would not be considered significant. Although Plan implementation would result in the removal of trees (potentially resulting in less shade in some areas), this would not be considered an adverse effect on recreational opportunities. The open space in the Plan Area would continue to offer many opportunities to enjoy shade, and recreation would likely be enhanced by the restoration of native vegetation, which has the potential to create new views and better expose landscape contours.

Please refer to the Initial Study included in Appendix A for additional detail about the other topics scoped out of detailed analysis in this EIR.

E. SIGNIFICANT UNAVOIDABLE IMPACTS

As discussed in Chapter IV of this EIR, the proposed project would result in one significant unavoidable impact, as follows:

- Implementation of activities under the proposed Plan (such as vegetation clearing or thinning or prescribed burning) could result in temporary substantial adverse visual effects on the scenic character of the Study Area and its surroundings.