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## K. NATURAL RESOURCES

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This section of the report outlines natural resources in the City of Berkeley, which encompass biological and energy resources. Setting information in Section 1 includes habitat, biological resources and energy, all of which have been used to inform the impacts discussion in Section 2, based on the significance criteria set forth in Section 2a.

A related topic, hydrology, is discussed in Section J, Hydrology and Water Quality. Solid waste reduction and recycling is described in Section C, Community Services.

### 1. Setting

a. Habitat and Biological Resources. The City of Berkeley is characterized by four major environmental habitat areas: urbanized Berkeley, the waterfront, the largely undeveloped upper hills, and the creek systems and riparian zones.

(1) Urbanized Berkeley. The urbanized portion of Berkeley extends from the waterfront on the west to the undeveloped Berkeley Hills on the east, and from the City limits on the north to the City limits on the south.

(a) *Vegetation*. Throughout the urbanized area, Berkeley is characterized by numerous street trees and other vegetation. The great variety and abundance of Berkeley's urban vegetation is mainly due to the mild Mediterranean climate and local interest in landscaping.

An inventory of Berkeley's street trees conducted in the late 1980s found ten tree species to be the most common street trees in Berkeley, including sycamore, purple leaf-plum, Liquidambar, camphor, Chinese elm, oriental cherry, Victorian box pittosporum, elm, and two species of ash. Most of these species are not native to the Berkeley area, but do well in Berkeley's climate and have characteristics suitable for street trees. Dominant tree species on the University central campus include eucalyptus, pines, oaks, redwoods, and plane trees.

(b) *Wildlife*. Berkeley's abundant urban landscaping attracts a variety of birds and other wildlife that have adapted to urbanized conditions, including opossum, skunk,

raccoon, deer, snakes, salamanders, and feral cats. During periods of drought, more wildlife species are found in central Berkeley, as species travel to lower elevations in search of water.

(2) The Berkeley Waterfront. The Waterfront area encompasses all of the property bordered by I-80 on the east, San Francisco Bay on the west, and the City limits to the north and south, plus the 33-acre Aquatic Park to the east of the freeway. As noted in Land Use, Section A of this Chapter of the EIR, the 170-acre area west of the I-80 freeway has been acquired by the EBRPD and is designated to become part of the East Bay Regional Shoreline Park.

As part of preparation of the Berkeley *Waterfront Specific Plan and Master Plan Amendment* (1986), a biological resources assessment was undertaken. This assessment found that the meadow area, located to the north of University Avenue between I-80 and the Marriott Hotel, and the brickyard area, located at the southwest corner of I-80 and University Avenue, contain seasonal ponds which are important habitat for migrating shore birds and water fowl. Other important vegetation/wildlife habitat types found at the waterfront include inter-tidal mudflat, submerged mudflat, beach area, and shorebird roosting sites. The location of these habitat types at the waterfront is shown in Figure IV.K-1, attached.

The Berkeley Waterfront contains suitable habitat for several listed, candidate or wildlife species of concern. Two of these species, the California brown pelican and California least tern, are State and Federal-listed as endangered. These species feed in off-shore areas of the Berkeley waterfront and may occasionally roost on piles or other off-shore platforms. The long-billed curlew, which is a state species of special concern and a federal migratory nongame species of management concern,<sup>1</sup> is potentially present at the waterfront.<sup>2</sup>

(3) The Upper Hills. Above the residentially developed lower hills of Berkeley rise the largely undeveloped, naturally vegetated upper hills. This area is mostly outside of the jurisdiction of the City and owned by Lawrence Berkeley Laboratories, the University, and the East Bay Regional Park District (EBRPD). The

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<sup>1</sup> Migratory non-game birds of management concern are species of migratory nongame birds that are considered to be of concern in the United States because of 1) documented or apparent population declines; 2) small or restricted populations; or 3) dependence on restricted or vulnerable habitats.

<sup>2</sup> Berkeley, City of, 1993. *Conditions, Trends and Issues*.

Figure IV.K-1 Waterfront Habitat

82 x 11

upper hills are used for recreation, ecological research, preservation, and institutional uses. Major uses in the area include the research institution campus of the Lawrence Berkeley Laboratories; the University's Strawberry Canyon Recreation Center, Botanical Garden, and Ecological Study Area; the undeveloped Claremont Canyon; and the EBRPD's Tilden Park.

(a) *Vegetation.* The vegetation/habitat types of the upper hills consist of a mixture of oak-bay woodland, annual grassland, baccharis brush land, north coastal scrub (soft chaparral), landscape plantings, and eucalyptus and Monterey pine plantations. During the 19th and early 20th centuries, portions of the upper hills were grazed, and a general successional pattern from grassland to baccharis brush land has occurred where grazing has been eliminated. Records indicate that this brush land will succeed into oak-bay woodland over a period of about 50 years, in the absence of wildfire.

Four special-status plant species are known to occur in the Berkeley Hills, including:

- § Presidio clarkia (*Clarkia franciscana*), State endangered and candidate for federal endangered status, near Skyline Boulevard and the Oakland border;
- § Alameda manzanita (*Arctostaphylos pallida*), State endangered and candidate for federal endangered status, found in the hills above the U.C. campus;
- § Diablo rock rose (*Helianthella castanea*), California Native Plant Society list 1B and federal species of concern, last seen at Leona Heights in the Berkeley-Oakland Hills in the 1920s; and
- § Santa Cruz tarplant (*Holocarpa macradenia*), State endangered and candidate for federal listing as threatened or endangered, presumed extinct in its natural state, but reestablished in Tilden Park.<sup>3</sup>

(b) *Wildlife.* Mammals found in the upper hills include black tailed deer, rabbit, black-tailed jackrabbit, ground squirrel, western gray squirrel, bobcat, Botta's pocket gopher, western harvest mouse, California vole, coyote, gray fox, striped skunk, and raccoon. Rare sightings of mountain lion have been reported in the oak-bay woodlands. Birds in the area include mourning dove, California quail, brown towhee, scrub and Stellar's jay, acorn woodpecker, common bushtit, yellow warbler, tree swallow, Anna's hummingbird, wren, great-horned owl, short-eared owl, red-tailed hawk, horned lark, western meadowlark. The annual grassland, brush land, and scrub provide important foraging habitat for turkey vulture, northern harrier, American kestrel, black-shouldered kite, and prairie falcon. Reptiles and amphibians in the area include California slender salamander, ensatina, California newt, common garter snake, aquatic

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<sup>3</sup> Ibid.

garter snake, western rattlesnake, western fence lizard, northern alligator lizard, and Pacific tree frog.

There are at least five special-status wildlife species that are known to occur or are potentially occurring in the upper hills. These include the following:

- \$ Bay checkerspot butterfly (*Euphydryas editha bayensis*), federally listed as threatened, which has been sighted in Joaquin Miller Park in the Oakland Hills;
- \$ Callippe silverspot butterfly (*Speyeria callippe callippe*), federally listed as endangered, which has been sighted in Joaquin Miller Park and Redwood Regional Park in the Oakland Hills;
- \$ San Francisco tree lupine moth (*Grapholita edwardsiana*), considered rare but has no special status, which has been found in Tilden Park above Berkeley;
- \$ Alameda whipsnake (*Masticophis lateralis euryxanthus*), State and federally listed as threatened, which has been found in Hamilton Gulch and Claremont Canyon of the Berkeley-Oakland Hills; and
- \$ Berkeley kangaroo rat (*Dipodomys heermanni berkelyensis*), federal species of concern, which has not been seen since the 1930s.

(4) Berkeley Creeks. The City of Berkeley contains five principal creeks: Derby, Potter, Strawberry, Schoolhouse, and Codornices, all of which flow west from the Berkeley Hills into San Francisco Bay. In addition, eight other creeks are at least partially within the City limits. Prior to urbanization, Berkeley's creek system provided a rich riparian habitat for aquatic and terrestrial plant and animal life. Urbanization has increased the amount of surface water runoff and flood peaks, which contributed to decisions to convert the natural watercourses into storm drain culverts. A discussion of the City's hydrologic regime and a figure showing existing and historic creek locations in Berkeley can be found in Section J, Hydrology and Water Quality in this Chapter of this EIR.

Only Strawberry and Codornices creeks have unculverted portions remaining. Rising interest in restoring streams to a more naturalistic form has led to the restoration of parts of Strawberry Creek and a proposal to restore the portion of Strawberry Creek located under downtown Berkeley. Important tree species growing along Strawberry Creek and other riparian areas in the City include California buckeye, coast live oak, California bay, coastal redwood, and several species of alder.

b. Tree Maintenance. The City of Berkeley Parks/Marina Division maintains 30,000 street trees and approximately 5,000 park trees. The Parks/Marina division maintains a pre-approved list of desirable street trees for all of Berkeley's streets. In 1984, the

*Berkeley Street Tree Guide* was prepared by the Parks/Marina Division in conjunction with the UC Berkeley Department of Landscape Architecture to provide a written guide for street tree characteristics and maintenance.

c. Energy Conservation. The City encourages energy conservation in all buildings by education efforts, providing financial incentives, enforcing minimum energy conservation standards, and a establishing a public/private corporation to implement energy conservation practices within the community.

(1) Regulatory Setting. In 1976, the Berkeley City Council created the country's first municipal Energy Commission to advise the City Council in advancing energy conservation and management. In 1980, the City of Berkeley, upon the Commission's recommendation, established the Energy Office to administer energy conservation programs. The City's energy conservation programs attempt to reduce energy consumption levels by emphasizing the lower costs and environmental benefits associated with conservation. The following is a summary of local regulations in the City of Berkeley

§ **Residential Energy Conservation Ordinance**. In 1981, the City adopted the *Residential Energy Conservation Ordinance* (RECO) to cut long-term energy costs and to promote energy resource conservation. This ordinance requires that minimum energy conservation standards be met when residential structures are sold.

§ **Commercial Energy Conservation Ordinance**. In 1993, the City adopted the *Commercial Energy Conservation Ordinance* (CECO). Similar to RECO, CECO requires all commercial buildings to install basic energy conservation measures at the time of sale or at the time of major improvements of over \$50,000.

§ **The Energy Office**. The Energy Office, a division of the Housing Department, administers and coordinates the wide variety of energy conservation services and programs offered by the City. The Energy Office also conducts program planning; acts as Secretary to the Energy Commission; assists in drafting legislation; and manages, schedules, and installs retrofits of energy-efficient measures into residential and commercial buildings.

(2) Global Warming Abatement Plan. City staff have developed a plan to address the relationship between global warming and energy consumption in the City of Berkeley, called the Resource Conservation and Global Warming Abatement Plan (Global Warming Abatement Plan). The Global Warming Abatement Plan was adopted in 1998.

d. Draft General Plan Policies. Policies included in the *Draft General Plan* that pertain to, could affect, or could be affected by natural resources include:

§ *Policy LU-44.* Implement the Waterfront Master Plan and take actions to achieve the five goals of the Plan:

1. Establish the waterfront as an area primarily for recreational, open space, and environmental uses, with preservation and enhancement of beaches, marshes, and other natural habitats.
2. Develop the waterfront as part of a continuous Eastbay shoreline open space system.
3. Provide for an appropriate amount and type of private development to make the waterfront part of Berkeley's vibrant urban community, attractive to and usable by Berkeleyans, neighboring bay area residents and other visitors.
4. Establish uses and activities that reflect and enhance the unique character of the waterfront and foster the community's relationship with the shoreline.

(See Appendix A: Waterfront Master Plan Goals and Policies)

§ *Policy LU-45.* Prepare and adopt a plan for the maintenance and improvement of the Berkeley Marina.

§ *Policy T-9: Ferry Service.* Work with the City of Albany, the racetrack owners, regional transportation agencies, and AC Transit to establish a ferry terminal and regular San Francisco ferry service from Berkeley at the foot of Gilman Street as an alternative to the Bay Bridge and as an essential recovery element following a significant seismic event.

§ *Policy H-12: Energy Efficiency.* Improve the safety and energy efficiency of new and existing homes and apartments.

§ *Policy OS-3: Maintenance.* Within the context of open space resource allocations, give highest priority to maintaining and improving the city's existing network of open space and recreation facilities.

The City's extensive open space network requires on-going maintenance. Due to funding constraints, required maintenance has often been deferred, which results in higher maintenance and replacement costs. Maintenance of existing resources consists of: ongoing maintenance (upkeep); restoration of resources (repair); and improvements to maximize or improve utilization of existing facilities (improvements).

§ *Policy OS-7: Serving the Underserved.* Within the context of open space resource allocations for new or expanded facilities, give high priority to providing additional facilities in areas of the city and for populations that are currently underserved.

- \$ *Policy OS-8: Access Improvements.* Improve transit, bicycle, disabled, and pedestrian access to and between open space and recreation facilities, including regional facilities such as the University of California open space, East Bay Regional Park lands, East Bay Shoreline State Park, and recreational facilities in other cities.
- \$ *Policy OS-10: Waterfront Open Space and Recreational Facilities.* Implement the 1986 Waterfront Plan policies to establish the waterfront as an area primarily for recreational, open space, and environmental uses, with preservation and enhancement of beaches, marshes, and other natural habitats.
- \$ *Policy EM-18: 15% Emission Reduction -- Global Warming Plan.* Make efforts to reduce local emissions by 15% by the year 2010.
- \$ *Policy EM-23: San Francisco Bay.* Take action to improve water quality in San Francisco Bay.
- \$ *Policy EM-24: Sewer System.* Protect and improve water quality by improving the citywide sewer system.
- \$ *Policy EM 25: Groundwater.* Protect local groundwater by promoting enforcement of state water quality laws that ensure non-degradation and beneficial use of groundwater.
- \$ *Policy EM-26: Water Conservation.* Promote water conservation through City programs and requirements.
- \$ *Policy EM-27: Creeks.* Whenever feasible, daylight creeks by removing culverts, underground pipes, and obstructions to fish and animal migrations.
- \$ *Policy EM-28: Fresh Water Supply.* Restore a healthy freshwater supply to creeks and the bay by eliminating conditions that pollute rainwater and by reducing impervious surfaces and encouraging swales, cisterns and other devices that increase infiltration of water and replenishment of underground water supplies that nourish creeks.
- \$ *Policy EM-29: Watersheds and Aquifers.* Increase public awareness of the value of promoting healthy watersheds and aquifers and work in cooperation with adjoining jurisdictions to jointly undertake watershed and creek restoration projects.
- \$ *Policy EM-30: Natural Habitat.* Restore and protect valuable, significant, or unique natural habitat areas.
- \$ *Policy EM-31: Street Trees.* Maintain, enhance, and preserve street and park trees to improve the environment and provide habitat.

*Action:*

- A. Develop a street and park tree management plan to create a vibrant and well-maintained tree population throughout the City. Wherever possible, tree replacement should emphasize native tree and plant species.
- \$ *Policy EM-32: Native Plants.* Use native tree and plant species to enhance ecological richness.
- \$ *Policy EM-33: Landscaping.* Encourage drought-resistant, rodent-resistant, and fire-resistant plants to reduce water use, prevent erosion of soils, improve habitat, lessen fire danger, and minimize degradation of resources.
- \$ *Policy EM-34: Inter-jurisdictional Coordination.* Encourage efforts by neighboring jurisdictions and agencies, such as the East Bay Regional Park District, University of California, Berkeley and the Lawrence Berkeley National Laboratory, to restore historic coastal grasslands in the hill area to provide natural habitat and reduce fire danger in the area.
- \$ *Policy EM-35: Citizen Efforts.* Encourage citizen efforts to restore ecological resources and open space areas, such as pathways and stairways.
- \$ *Policy EM-38: Energy Efficient Design.* Promote high efficiency design and technologies that provide cost-effective methods to conserve energy and use renewable energy sources.
- \$ *Policy EM-39: Energy Conservation.* Continue to implement energy conservation requirements for residential and commercial buildings at the time of sale and at time of major improvements.
- \$ *Policy EM-40: Partnerships.* Support public-private organizations established to implement energy conservation practices within the community.
- \$ *Policy EM-41: Alternative Sources.* Support efforts to produce energy through local alternative sources.
- \$ *Policy EM-42: Business Energy Conservation.* Encourage all businesses to implement energy conservation plans.
- \$ *Policy EM-43: Market Support.* Support the market for energy efficient technologies and services.
- \$ *Policy EM-44: Fossil Fuel.* Encourage and support efforts to reduce use of fossil fuel and other finite, non-renewable resources.

## 2 Impacts and Mitigation Measures

a0 Criteria of Significance. The proposed *Draft General Plan* would have a significant impact on natural resources if it would:

- \$ Result in substantial reduction in numbers of, restriction in range for, or loss of habitat (e.g., a ~~Ataking~~) for a population of special status species;
- \$ Create substantial interference with the movement of any resident or migratory fish or wildlife species;
- \$ Diminish the area or quality of any sensitive natural community, including jurisdictional wetlands and riparian communities;
- \$ Substantially diminish native habitat for wildlife or plants;
- \$ Conflict with the provisions of an approved local, regional or state plan for resource conservation; or
- \$ Use energy in a wasteful manner.

b0 Impacts and Mitigation Measures. This section describes potential impacts to natural resources that would result from implementation of the *Draft General Plan*, and suggests mitigation to address these impacts. Less-than-significant natural resource impacts are listed first, followed by significant impacts.

(1) Less-than-Significant Natural Resources Impacts. Implementation of the following policies relate to natural resources but would not be expected to result in environmental impacts: *Policy LU-44, LU-45, H-12, OS-3, OS-7, OS-10, EM-18, EM-23 through EM-30, EM-31A, EM-32 through EM-33, EM-35, EM-38 through EM-44*. The policies of the *Draft General Plan* would not create substantial interference with the movement of any resident or migratory fish or wildlife species, or use energy in a wasteful manner.

(2) Significant Natural Resources Impacts. Three potentially significant impacts to natural resources would occur with implementation of the *Draft General Plan*.

**Impact NAT-1: Implementation of Policy T-9 calls for the establishment of a ferry terminal in Berkeley, which could result in direct environmental impacts.**

(S)

Although it would likely result in long-term benefits to traffic and air quality, initiation of ferry service with a new terminal facility at the Berkeley waterfront has the potential to result in a number of direct environmental impacts, including local traffic and natural resource impacts at the waterfront. This policy could also potentially conflict with the provisions of the Bay Conservation and Development Commission's (BCDC's) Bay Plan. While Action C of Policy T-9 includes a provision to ensure that ferry services are less environmentally-detrimental than the automobile, and advocates for low emission, environmentally-sensitive ferries, the mechanism for environmental review of new ferry

terminal facilities is not well defined, and mitigation would be required to reduce this impact to a less-than-significant level.

Mitigation Measure NAT-1: Prior to initiation of ferry service, any new ferry terminal facility project shall undergo complete environmental review. The effects of the boats= wake, increased noise and potential water pollution on sensitive natural resources and habitats at the Berkeley waterfront and consistency with BCDC's Bay Plan shall be given special focus in the environmental review. (LTS)

**Impact NAT-2: Implementation of Policy OS-8 calls for the development and maintenance of a citywide pedestrian and bicycle network, which could potentially lead to degradation of sensitive riparian habitat. (S)**

*Policy OS-8* calls for the installation of bicycle and walking paths to improve access to and between open space and recreation facilities, including along creeks, but the policy does not specify the kinds of riparian habitat that would be appropriate for public access. Some areas adjacent to natural or restored creeks could contain sensitive wildlife and plant species, or could be especially prone to erosion. Excessive recreational use along creeks that are biologically or geologically sensitive could have biological impacts as well as impacts to water quality. While Action B of *Policy EM-27* includes a provision to establish pedestrian and bicycle paths where appropriate or feasible, this Action does not specifically address potential biological or geological impacts to sensitive creek areas.

Mitigation Measure NAT-2: Prior to the development of bicycle or walking paths along creeks, any new bicycle or walking paths shall undergo complete environmental review. The presence of biologically sensitive species or erosion-prone soils in riparian zones shall be evaluated in the environmental review. (LTS)

**Impact NAT-3: Implementation of Policy EM-35 encourages efforts to restore historic coastal grasslands in the hills, which could result in impacts to local habitat. (S)**

Restoration of historic coastal grasslands habitat in the hills would decrease fire danger and increase habitat for wildlife that live and forage in meadow environments, but could reduce habitat for other species. If scrub and woodland habitat are removed to create the meadow areas, it would impact those wildlife species currently using these areas for habitat. Potentially affected species could also include special status species. In addition, conversion of meadow into scrub and woodland is part of natural succession, and native species are adapted to this transition.

Mitigation Measure NAT -3: Before conversion of any natural area into historic coastal grasslands is initiated by the City, City staff shall consult with natural resource regulatory agencies (e.g., United States Fish and Wildlife Service, California Department of Fish and Game) to ensure that such conversion would not result in any take of any special status species, and to ensure that critical wildlife breeding or foraging habitat would not be lost. (LTS)