CHAPTER IV
Environmental Setting, Impacts, and Mitigation Measures

IV.A. Aesthetics and Visual Quality

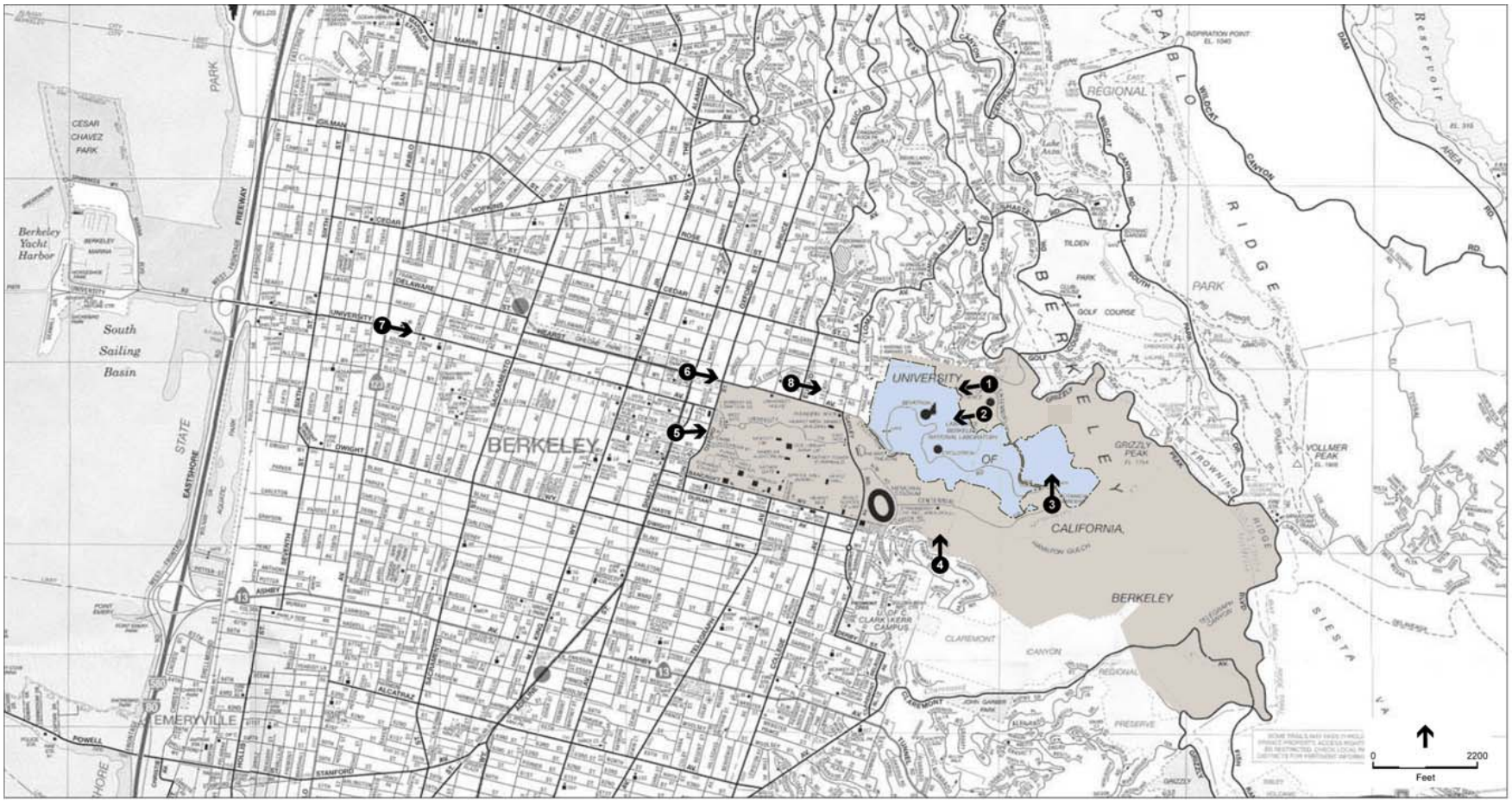
IV.A.1 Introduction

This section identifies existing visual resources at the LBNL hill site and analyzes the potential for implementation of the 2006 LRDP to affect those resources. Information presented in the discussion and subsequent analysis was drawn from site visits, LBNL's 1987 LRDP and associated environmental impact reports, surveys and environmental documents associated with specific LBNL projects, and the Illustrative Development Scenario prepared by LBNL to illustrate a single iteration (of many possible iterations) of future Lab development under the 2006 LRDP. The physical characteristics of the site and surrounding areas are discussed briefly. For a more detailed description of the land uses mentioned below, refer to Section IV.H, Land Use and Planning.

Eight computer-generated visual simulations illustrating "before" (current) and illustrative "after" visual conditions from representative public vantage points near the LBNL site are presented as part of this analysis. The locations of the visual simulation vantage points were selected in consultation with visual resources professionals and LBNL staff and were chosen to represent viewpoints that are both highly accessible to the public and that provide the most direct views of potential site changes as illustrated in the Illustrative Development Scenario. These viewpoints are indexed to a Viewpoint Location Map (see Figure IV.A-1) included in this section.

IV.A.2 Setting

Portions of LBNL adjoin urban neighborhoods, and various areas within the site are visible from a number of the surrounding uses. However, as discussed below, due to the presence of on-site and off-site landforms, structures, and vegetation, and due to the site's relative elevation, the project site is partially screened from a variety of public vantage points. While many views of portions of the project site and of individual buildings or groups of buildings are available from such vantage points as Memorial Stadium, the Lawrence Hall of Science, Grizzly Peak Road, and downtown Berkeley, the site as a whole cannot be viewed from a single on-the-ground vantage point.



Viewpoint Key

1. Lawrence Hall of Science north parking area, Berkeley
2. Lawrence Hall of Science outdoor exhibition area, Berkeley
3. Crosswalk at UC Botanical Garden, Berkeley
4. Panoramic Way, Berkeley
5. Shattuck Avenue at Center Street, Berkeley
6. Hearst Avenue at Shattuck Avenue, Berkeley
7. University Avenue at San Pablo Avenue, Berkeley
8. Ridge Road at Euclid Avenue, Berkeley

SOURCE: Environmental Vision

Figure IV.A-1
Viewpoint Location Map

IV.A.2.1 Visual Quality

The assessment of existing visual quality is organized according to the following general descriptive categories: site location and landform, land use and building design, and vegetation.

Site Location and Landform

The project site is located on the steeply sloping hillsides of the Oakland-Berkeley hills. Site topography rises from an elevation of approximately 500 feet near the main visitor entrance at the Blackberry Canyon Gate to approximately 1,100 feet near Building 71 at the northern border of the hill site.

Because of its varied topography and upland location, the LBNL site was constructed as a series of buildings clustered together on interlinked terraces, separated by rustic landscaped areas. Permanent buildings are generally located adjacent to surface parking lots; temporary one-story trailers are often located between the site's permanent buildings and on-site roadways. The steep topography of the LBNL site influences its visual character by separating structures vertically, and it reinforces the clustered pattern of development. Buildings located quite close together in plan (overhead) view are seen as discrete elements in the landscape in mid- and long-range views of the site.

Land Use and Building Design

The LBNL hill site is occupied by approximately 110 conventionally constructed buildings, along with approximately 90 on-site trailers, utility buildings, and other miscellaneous structures. The greatest density of both on-site development and activity is concentrated in two adjoining clusters: the Building 50 complex and the area surrounding the Advanced Light Source (Building 6). With the exception of the eight-story Building 50 complex, the majority of the Laboratory's buildings range in height from one to four stories, with taller buildings stepped into the hillside, reducing apparent building height. Other areas on the hilltop site, such as the Life Sciences Cluster in the eastern portion of LBNL near the Strawberry Canyon Gate on Centennial Drive, are less densely developed.

The visual character of LBNL's built environment is eclectic. Many buildings display an industrial look and utilitarian quality due to the type of building materials (e.g., poured-in-place concrete, corrugated metal siding, etc.) and the visible mechanical equipment (exposed pipes, vents, panels, and tanks) related to the activities occurring in the buildings. Many LBNL buildings are painted in neutral colors (grey, beige) to blend with the natural setting. Some of the site's newer buildings depict somewhat livelier hues (light green, powder blue), such as Building 84 in the Life Sciences Cluster near the eastern edge of the hill site. A few LBNL buildings are recognizable landmarks, including Building 50 and the Advanced Light Source, both of which are visible from off-site locations. (The Bevatron is also recognizable from some higher-elevation viewpoints. See discussion of views, below.) However, eucalyptus and pine trees along with oak and bay laurel are interspersed throughout the site and adjoining areas; these trees contribute to screening of many views to the site from the UC Berkeley campus and from adjacent streets and neighborhoods. Nevertheless, current views of the Laboratory from nearby areas are not of pristine natural settings, even where trees predominate. Instead, human intrusion

is widespread, with evidence of built forms—buildings; roadways, sidewalks, and hillside stairways; bus shelters; fencing; signage; and streetlights and other utilities—nearly omnipresent.

Much of the built environment on the hilltop site lacks a strong overall sense of visual hierarchy. Structures were often built on an "as-needed" basis and are generally not related in ways that support interaction or optimal use of the developed areas. Permanent buildings are typically connected directly to parking areas, and many contain little (or no) open space to buffer pedestrian entrances from adjacent surface parking or other temporary structures. With the exception of painted numbers on the sides of most of the buildings, the majority of LBNL buildings are not identified with highly noticeable signage to indicate the building's name or function, as might be typically found with commercial or publicly accessible institutional buildings. Temporary buildings and trailers are often indistinguishable from each other and provide limited visual interest. Many of the site's pathways and gathering areas encroach on service areas, loading zones, parking, and utility corridors, which detract from a cohesive image of the Laboratory site.

Vegetation

Annual grasses are the dominant vegetation type on the LBNL site, extending over about one-third of the site. Eucalyptus is the predominant tree, with more than 10 percent of the site covered by stands of blue gum eucalyptus, planted here as elsewhere in the Oakland-Berkeley hills beginning in the late 1800s. More than 25 acres of the site are covered by wooded areas that support coast live oak, California bay, and big-leaf maple trees, and another approximately 7 acres are planted with coast redwood, Monterey pine, Torrey pine, and Canary Island pine. The large areas of native and non-native trees and shrubs give the Lab an aesthetic that is sometimes described as "buildings in nature," as the site structures are, for the most part, scattered amid trees and other vegetation. Although LBNL manages on-site vegetation to reduce the risk of wildland fire, vegetated areas are typically dense enough to visually separate the Laboratory from adjacent residential properties and to serve as a transitional element between the Lab and more rural surroundings to the east. For this reason, vegetated areas are visually compatible with the larger landscape from off-site viewpoints.

The 2006 LRDP distinguishes between the more intensively managed Perimeter Open Space Areas and the less altered Fixed Constraint Areas. However, it is unlikely that an off-site viewer could visually differentiate these areas, as the viewer would likely perceive that both types of undeveloped Lab areas have a similar park-like character.

IV.A.2.2 Views

The Lab is situated near the northeastern perimeter of the UC Berkeley campus in a scenic area that encompasses the Oakland-Berkeley hills and Strawberry and Blackberry Canyons.[1] The hills provide a semi-natural, vegetated open space backdrop to the LBNL hill site. Most areas of the western slopes of these hills are wooded with native stands of oak and California bay or with introduced eucalyptus or conifers. Geographic features, most notably the steep slopes that make

[1] This analysis uses true compass directions.

up Strawberry Canyon, define the site's visual setting, and stands of tall trees provide cover for the site from most potential viewpoints in the surrounding region.

The LBNL site is intermittently visible from surrounding short-, medium-, and long-range viewpoints. For purposes of analysis in this EIR, short-range views are those from vantage points on the site, with limited view corridors to or across the site; medium-range views are those from public vantage points up to approximately one mile from the hill site boundary; and long-range views are those from public vantage points greater than one mile away from the hill site.

Medium- and long-range viewing opportunities of and across the site are generally not available due to topographic variation and intervening vegetation. Short-range views are generally available only from on-site roadways and parking areas as well as from within Laboratory buildings. Short-range views include the surrounding hillsides, vegetation, and other LBNL buildings. Because LBNL is a controlled-access site, short-range views are observed primarily by Lab employees and authorized visitors. There are limited opportunities for short-range public views of the site, except for views from locations at the Lawrence Hall of Science upslope from the LBNL site.

The LBNL site is visible in medium-range views from nearby elevated off-site locations, including residential neighborhoods to the north and northwest in the city of Berkeley, such as from Parnassus Road and Hilgard Avenue, and Le Conte Avenue and Ridge Road in the North Side or "Seminary Hill" neighborhood. Nearby and adjacent buildings include several office and research buildings associated with LBNL's Central Research and Administration Area (Buildings 50, 50A-F, 70, 70A) as well as several small office buildings and trailers (Buildings 65, 65A, 65B). Many buildings, walkways, and landscaped areas within the Central Research and Administration Area offer dramatic long-range views of the adjacent communities, San Francisco, and the Bay.

Long-range views of the site are available from locations in downtown Berkeley and from points farther west, such as the Berkeley Marina. Long-range views within the LBNL site are available from locations along north-south axis streets such as Cyclotron Road, from locations with higher elevations to the east of the site along East Road, and from traffic turnouts. These vantage points afford views westward toward the Bay of historic landmarks such as the Golden Gate Bridge and Alcatraz Island, as well as the urban landscape of the adjacent Berkeley and UC campus development.

Due to the site's considerable size and the intervention of buildings, vegetation, and geographical features, the entire LBNL site – or even the majority of the site – is not visible from any single viewpoint (except from overhead by aircraft).

IV.A.2.3 Light and Glare

Sources of light and glare around the hill site are generally limited to the interior and exterior lights associated with development at LBNL, including buildings, parking lots, and access roads. Existing buildings on the hill site can also be considered sources of glare, as some windows and building materials can reflect natural light or nighttime exterior lighting. All on-site buildings and parking areas are equipped with outdoor, downward-directed light fixtures for nighttime lighting

and security. In addition, cars and trucks traveling to and from the site represent a source of glare. The LBNL site comprises an internal roadway and circulation network (e.g., Cyclotron Road and East Road) where street lighting causes light and glare effects during early morning and evening hours.

IV.A.2.4 Local Plans and Policies

LBNL is a federal facility operated by the University of California and conducting work within the University's mission on land that is owned by The Regents of the University of California. As such, LBNL is generally exempted by the federal and state constitutions from compliance with local land use regulations, including general plans and zoning. However, LBNL seeks to cooperate with local jurisdictions to reduce any physical consequences of potential land use conflicts to the extent feasible. The western part of the LBNL site is within the Berkeley city limits, and the eastern part is within the Oakland city limits. This section summarizes relevant policies contained in the Berkeley and Oakland general plans.

Berkeley General Plan

The Urban Design and Preservation Element of the City of Berkeley Draft General Plan contains few policies related specifically to visual quality that would apply to the proposed 2006 LRDP. Policies relevant to the LBNL include:

> Policy UD-10 The University of California: The City of Berkeley strongly supports actions by the University to maintain and retrofit its historic buildings, and strongly opposes any University projects that would diminish the historic character of the campus or off-campus historic buildings. (Also see Land Use Policies LU-36 and LU-37)
>
> Policy UD-31 Views: Construction should avoid blocking significant views, especially ones toward the Bay, the hills, and significant landmarks such as the Campanile, Golden Gate Bridge, and Alcatraz Island. Whenever possible, new buildings should enhance a vista or punctuate or clarify the urban pattern.
>
> Policy UD-32 Shadow: New buildings should be designed to minimize impacts on solar access and minimize detrimental shadows.

Oakland General Plan

The Open Space, Conservation, and Recreation (OSCAR) Element of the City of Oakland's General Plan was adopted in 1996. OSCAR policies pertaining to aesthetics and visual resources with relevance to implementation of the LBNL LRDP include the following:

> Policy OS-10.1: Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.
>
> Policy OS-10.2: Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.

IV.A.3 Impacts and Mitigation Measures

IV.A.3.1 Significance Criteria

For the purposes of this EIR, implementation of the 2006 LBNL LRDP may have a significant effect on visual resources if it would exceed the following Standards of Significance, based on Appendix G of the CEQA Guidelines and the UC CEQA Handbook:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, or historic buildings within a scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

IV.A.3.2 Impact Methodology

Evaluation of potential impacts on the existing visual character of the LBNL site and surroundings requires analysis of the proposed LRDP components that would be introduced. Those new components are then evaluated (separately or collectively) for how they would affect site character and views. Visual simulations illustrating potential future development on the site from eight representative public locations have been prepared and are presented in this section.

The visual simulations are based on an Illustrative Development Scenario illustrated in Figure III-9 in Chapter III, Project Description. This Scenario is intended to provide a conservative basis for the analysis of environmental impacts. Actual overall development that is approved and constructed pursuant to the LRDP would be less intense than portrayed in the scenario. The scenario was developed before the proposed 2006 LRDP was reduced in scope in response to comments from the City of Berkeley, and thus the scenario includes an overall level of potential development that is greater than is being proposed in the 2006 LRDP. At any particular site, however, the level of development may approach the intensity that is portrayed in the scenario, so the scenario remains an appropriate and conservative basis for evaluating the potential aesthetic impacts of the proposed 2006 LRDP. Also, the actual locations of buildings, configurations, uses, and the like may vary as specific projects are considered and approved in the future, but based on current knowledge the scenario represents a reasonable outcome for the Lab under the LRDP term based on current conditions and needs and best planning. The Laboratory's needs and opportunities will change over time, however, and the scenario is not intended to be a precise representation of the actual development program that would take place over the 20-year planning horizon of the LRDP.

The visual impact analysis is based on field observations of the project site and vicinity conducted in February 2004 and visual simulations completed in April 2006, and a review of aerial and ground-level photography of the project area, U.S. Geological Survey topographic

maps, and site plans, architectural drawings, and the landscaping/fire management plan. Photographs used for the visual simulations were taken from public vantage points with a 35-millimeter camera with a 50-millimeter lens.

Before approving any later activity under the LRDP as being within the scope of the project covered by this program EIR, the Lab will evaluate whether the aesthetic impacts of that later activity implemented pursuant to the LRDP were examined in the program EIR. However, as stated in the Introduction to this EIR, as a result of the reduction in scope of the proposed project in response to comments from the City of Berkeley, this EIR (including the Illustrative Development Scenario) will not be used as a first-tier EIR for, or to reduce or streamline the subsequent CEQA processing of, any project that, when added to other construction pursuant to this LRDP, exceeds a net total of 980,000 gross square feet of new occupiable space construction or 320,000 gross square feet of demolition. If specific project differences from the presentation of the Illustrative Development Scenario and the 2006 LRDP EIR are such that the project is not within the scope of the LRDP EIR or the specific impact statements and mitigation measures do not cover the individual project pursuant to CEQA Guidelines Sections 15168(c)(2) and 15168(c)(5), then appropriate, project-specific CEQA analysis will be tiered from this 2006 LRDP EIR in accordance with CEQA Guidelines Section 15168(d)(1-3).

IV.A.3.3 2006 LRDP Principles, Strategies, and LBNL Design Guidelines

2006 LRDP Principles and Strategies

The "Vision" section of the 2006 LRDP proposes four fundamental principles that form the basis for the LRDP's development strategies. The two principles most applicable to aesthetic aspects of new development are to "Preserve and enhance the environmental qualities of the site as a model of resource conservation and environmental stewardship" and to "Build a more campus-like research environment." (LRDP, Section 2 – "Vision.")

Development strategies provided by the 2006 LRDP are intended to minimize potential environmental impacts that could result from implementation of the 2006 LRDP. (See Chapter III, Project Description, for further discussion, and see Appendix B for a full listing of principles, strategies, and design guidelines.) Development strategies set forth in the 2006 LRDP that are applicable to aesthetics include the following:

- Protect and enhance the site's natural and visual resources, including native habitats, streams and mature tree stands by focusing future development primarily within the already developed areas of the site;

- Increase development densities within areas corresponding to existing cluster of development to preserve open space, enhance operational efficiencies and access;

- To the extent possible site new projects to replace existing outdated facilities and ensure the best use of limited land resources;

- To the extent possible site new projects adjacent to existing development where existing utility and access infrastructure may be utilized;
- Create a more "collegial" environment that encourages and facilitates interaction among the variety of Berkeley Lab employees and guests;
- Site and design new facilities in accordance with University of California energy efficiency and sustainability policy to reduce energy, water and material consumption and provide improved occupant health, comfort and productivity;
- Exhibit the best practices of modern sustainable development in new projects as a way to foster a greater appreciation of sustainable practices at the Laboratory;
- Eliminate parking from the sides of major roadways, thereby improving safety and allowing one-way roads to be converted to two-way traffic;
- Maintain or reduce the percentage of parking spaces relative to the adjusted daily population;
- Consolidate parking into larger lots and/or parking structures, locate these facilities near Laboratory entrances to reduce traffic within the main site;
- Remove parking from areas targeted for outdoor social spaces and service areas;
- Preserve and enhance the native rustic landscape and protect sensitive habitats;
- Consolidate service functions wherever possible in the Corporation Yard;
- Improve the pedestrian spaces at the heart of the research clusters and adjacent to research facilities so as to support interaction among Laboratory users;
- Retain and improve walkways as appropriate throughout the open space portions of the site, carefully integrating these pathways to minimize intrusion in the natural environment;
- Improve wayfinding for visitors in particular through a comprehensive and coordinated signage system and through the naming of buildings and research clusters;
- Develop new campus-like outdoor spaces such as plazas within clusters of facilities and improve those that already exist;
- Maintain and enhance tree stands to reduce the visibility of Laboratory buildings from significant public areas in neighboring communities;
- Improve the overall appearance and experience of the Laboratory through improvements to the main entry gates, and the landscape areas associated with roadways, parking lots, and pedestrian pathways;
- Continue to use sustainable practices in selection of plant materials and maintenance procedures;
- Develop all new landscape improvements in accordance with the Laboratory's vegetation management program to minimize the threat of wildland fire damage to facilities and personnel;

- Utilize native, drought-tolerant plant materials to reduce water consumption; focus shade trees and ornamental plantings at special outdoor use areas; and
- Minimize impervious surfaces to reduce storm water run-off and provide landscape elements and planting to stabilize slopes, reduce erosion and sedimentation.

LBNL Design Guidelines

The LBNL Design Guidelines were developed in parallel with the LRDP and provide specific guidelines for site planning, landscape and building design as a means to implement the LRDP's development principles as each new project is developed. Specific design guidelines are organized by a set of design objectives that essentially correspond to the strategies provided in the LRDP. The LBNL Design Guidelines provide the following specific planning and design guidance for the aesthetic aspects of new development to achieve these design objectives.

The design guidelines would be applied to all new applicable projects constructed at the LBNL main site under the 2006 LRDP program. As part of the design review and approval process, new projects would be evaluated for adherence to the LRDP Land Use Map, the design guidelines, the Building Heights Map, and any other relevant plans and policies. Approvals would be subject to satisfactory compliance with these provisions. Design objectives that are contained within the design guidelines and applicable to the aesthetics analysis include the following:

- Provide screening landscape elements to visually screen large buildings;
- Create landform elements consistent with design on the Hill;
- Mass and site buildings to minimize their visibility;
- Screen roofscapes;
- Respect view corridors;
- Integrate buildings into the overall landscape using appropriate materials;
- Create a cohesive identity across the Lab as a whole by following established precedents for new landscape elements;
- Provide appropriate site lighting for safety and security;
- Create new commons spaces in clusters that currently lack them;
- Allow sunlight to reach the commons spaces;
- Create as high a density and critical mass around commons spaces as possible;
- Create new keystone structures in clusters that currently lack them;
- Utilize artifacts to create identity and add interest to each cluster;
- Create consistency between buildings in individual clusters;
- Develop research clusters in a way that is mindful of future expansion;

- Design pathway layouts that support pedestrian flow and encourage casual interaction;
- Construct new walkway structures such as stairs, bridges, slope retention for walkways and guardrails of materials compatible with the surrounding landscape;
- Minimize visual and environmental impacts of new parking lots;
- Site and design parking structures to integrate with the natural surroundings; and
- Organize service functions to minimize conflicts and visual impacts.

IV.A.3.4 Impacts and Mitigation Measures

Construction[2]-Related Visual Impacts

Impact VIS-1: Construction of the proposed LRDP buildings would create temporary aesthetic nuisances for adjacent land uses. (Less than Significant)

Excavation, grading, and construction activities, including demolition of existing buildings, could create short-term adverse effects on the visual quality of a particular development project site. These activities would occur mostly within developed areas at the hill site but also in undeveloped or vacant areas and would occur during a relatively short period of time – generally 18 to 24 months for a typical building. Grading and excavation, where required, could result in short-term changes in visual conditions, particularly for future projects on relatively steep sites, which could result in an unnatural or engineered appearance where substantial cuts and/or fill are required. These effects normally would be of limited duration, until building construction is underway and/or new or replacement landscaping is installed.

The aesthetic environment during future construction periods would consist of elements typical of a construction site such as bulldozers, trucks, loaders, and excavators, as well as disturbed hillside land and surfaces. Severe angular cuts and/or filling that result in an unnatural or engineered appearance would be avoided where feasible. In addition, graded slopes would be feathered and rounded where feasible to provide a natural transition between the graded site and adjacent un-graded areas. Furthermore, grading would be minimized though the use of retaining walls where compatible with building design.

Removal of trees on future development sites could also cause noticeable changes in the visual environment. The Lab strives to retain mature vegetation where feasible and to plant replacement landscaping as part of all new construction. Where trees were removed, replacement trees would typically be planted or transplanted and positioned to maximize screening benefits. In general, newly built structures tend to stand out in their environment until materials begin to weather and landscaping takes hold.

[2] For the purposes of this EIR, the term "construction," unless specifically indicated otherwise, includes activities that involve construction of new facilities, major rehabilitation or modification of existing facilities, and demolition of existing facilities.

As a new building was constructed, the aesthetic environment of the development site would shift from one dominated by excavation and grading to one focused on construction activity, including erection of the structural framing and, ultimately, exterior finishes. During this time, which would make up the bulk of the 18- to 24-month construction period, activity at the individual project site would be noticeable from short-range viewpoints.

Demolition activities would generally not take as long as construction of new facilities (although they could occur consecutively with construction where new buildings would replace existing ones). Demolition typically would result in lesser visual effects than those described for new construction, because demolition does not generally involve extensive removal of vegetation or grading, and because demolition involves removal of elements of the built environment rather than the introduction of a new structure.

Because of the limited duration and limited geographical extent of demolition and construction projects, and because the hill site's existing vegetation and topographic contours already limit views from off-site, construction activities would be unlikely to adversely affect scenic views, damage scenic resources, or degrade the existing visual character or quality of the hill site, and its surroundings, and therefore construction effects on visual quality would be less than significant.

Mitigation: None required.

Project Variant. The project variant would alter the on-site adjusted daily population but would not result in any change in demolition or new construction compared to what is contemplated under the LRDP. Therefore, visual effects associated with the project variant would be the same as those described for the LRDP.

Individual Future Projects/ Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of potential development under the LRDP. The Illustrative Development Scenario includes demolition of certain existing buildings and new construction, and such demolition and construction is consistent with the changes in visual character that would result from implementation of the LRDP. Individual projects identified in the Illustrative Development Scenario would alter existing visual character of the Lab site in the same manner as described above with respect to construction pursuant to the LRDP. Thus, the impact of such construction activities would be less than significant.

Long-Term Visual Impacts

No potentially significant aesthetic impacts are anticipated from Lab activity at sites other than on the main hill site, because no change is proposed at off-site locations. Although periodic fluctuations in the off-site leasing of office or research space would continue to occur over the 2006 LRDP planning period, such leasing has always been conducted in existing buildings, and thus represents use of an existing facility without any aesthetic change. Furthermore, such leasing would occur in building space permitted (and analyzed under CEQA, if applicable) by other entities. Therefore, the following analysis focuses on the LBNL hill site.

Impact VIS-2: The proposed project could alter views of the LBNL site, and could result in a substantial adverse effect to a scenic vista or substantially damage scenic resources. (Significant and Unavoidable)

Overall, implementation of the proposed 2006 LRDP would alter views of the LBNL site from nearby areas, including the Lawrence Hall of Science and residential neighborhoods and commercial areas in the cities of Berkeley and Oakland. This analysis includes views of the site from representative public vantage points, and corresponding conceptual simulations and view diagrams that illustrate how the LBNL site could look after elements of the LRDP's building program are constructed. The simulations are based on buildings identified in the Illustrative Development Scenario, which is a conceptual portrayal of potential development that could occur at particular locations under the 2006 LRDP. This scenario is not a definitive representation of buildout under the LRDP. Rather, the simulations are intended to represent potential visual changes to the LBNL main hill site.

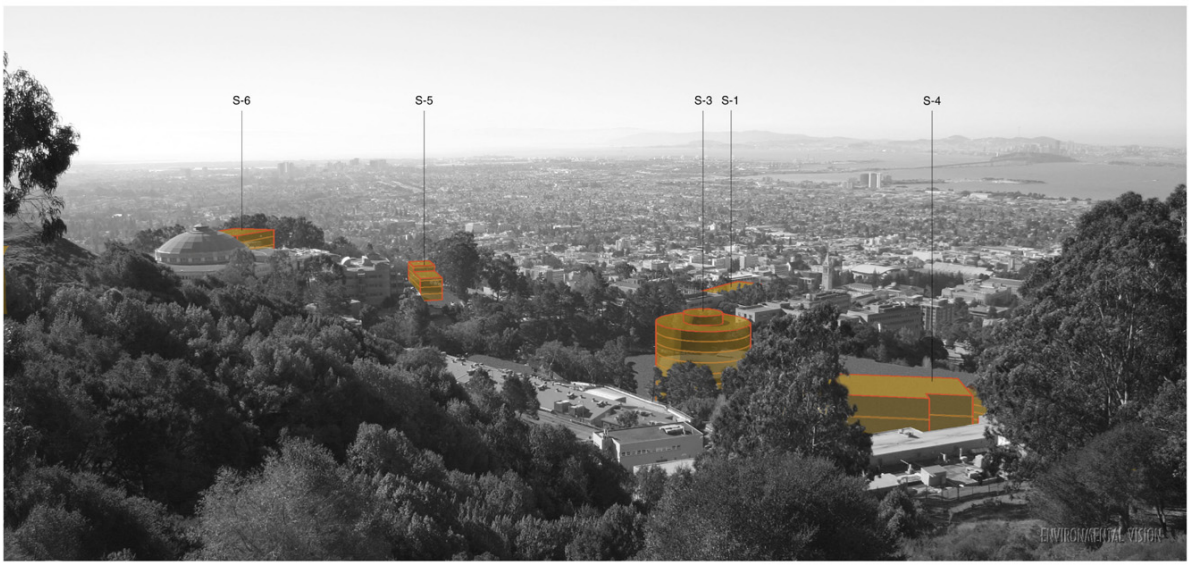
Figure IV.A-1 (p. IV.A-2) illustrates the locations of the viewpoints included in this analysis.

Figures IV.A-2 and IV.A-3 depict existing views from two locations at the Lawrence Hall of Science: the north parking lot and the outdoor exhibit area, respectively. Both views are looking west-southwest. For purposes of this EIR, these views are considered short-range views because they provide wide views of the hill site from publicly accessible locations north of the site. Foreground views consist of sloping hillsides covered in shrubbery and trees. Breaks in the vegetation give way to mid-ground views of the LBNL site. From this perspective, the most prominent visible element on the LBNL skyline is the dome of the Advanced Light Source (Building 6) to the south (at left in Figure IV.A-2 and in the center of Figure IV.A-3). Adjacent to the Advanced Light Source, Buildings 80 and 2 are visible. In the middle of the mid-ground views, the rooftops of Buildings 58, 47, and 46 are visible as a flat surface tucked against the hillside. To the west in Figure IV.A-2, the smaller dome of the Bevatron (Building 51) and the top of Building 54 are discernible. Background views include the UC Berkeley campus; the cityscapes of Oakland, Berkeley, and San Francisco; San Francisco Bay, the Bay Bridge, and Treasure Island; and wide expanses of sky "panoramic views." New construction would be in conformance with height zones delineated in the Building Heights Map to assure that long-range or panoramic views from these vantage points would not be obstructed.

Under LRDP conditions, views from these vantage points would change. Foreground views in Figure IV.A-2 would continue to comprise the hillside sloping southwestward to the developed terrace portion of the LBNL hill site. In mid-ground views, additional buildings anticipated under the proposed project would be visible; some of these new buildings would be built adjacent to existing structures, while others would replace existing structures. As shown in the simulation, these buildings would generally be clustered near the Advanced Light Source and also at the current location of the Bevatron, although the rooftop of a new building (Building S-4) west of this cluster of buildings would also be visible. (For a list of potential new buildings under the Illustrative Development Scenario, see Table III-6 in Chapter III, Project Description.) The western portion of this view is proposed to be altered by demolition of the Bevatron (Building 51) and new replacement construction. Certification of the Building 51 (Bevatron) EIR and approval

Existing view from Lawrence Hall of Science North Parking Area (below Summit Road residences)

Conceptual visual simulation of Proposed Project



View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-2
Site Photo and Simulation

Existing view from Lawrence Hall of Science outdoor exhibit area

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-3
Site Photo and Simulation

of the demolition project are anticipated to be considered in early 2007. In the simulation in Figure IV.A-3, from a vantage point slightly to the south, the foreground view would be dominated by the new Building S-7 which would be situated between the viewpoint and the Advanced Light Source, and which would replace many of the existing buildings in the Lab's Old Town area. Limited portions of two additional buildings would also be visible, generally to the southwest and west of Building S-7. No change would occur in long-range scenic views (i.e., of San Francisco Bay) from these viewpoints, and no scenic resources would be damaged.

Figures IV.A-4 and IV.A-5 illustrate long-range views of the LBNL hill site from downtown Berkeley, looking east. In Figure IV.A-4, the intersection of Shattuck Avenue and Center Street dominates the foreground, while existing buildings in Berkeley and extensive tree canopies occupy the mid-ground. In the background, a portion of the LBNL hill site is visible between more proximate buildings and trees. Portions of several existing Lab buildings can be seen scattered among the trees on the hillside, although none is readily identifiable because of the extensive vegetation on the hill site. From the vantage point in Figure IV.A-5, at Hearst and Shattuck Avenues, foreground views include expanses of paved roadway (Hearst Avenue) framed by low- to medium-density buildings. Mid-ground views are also of buildings along Hearst Avenue. In the background, the view corridor terminates at the rising hills of the LBNL site. Several LBNL buildings are visible from this location, in some cases more clearly defined than in Figure IV.A-4. Most notable are Building 50 and the dome of the Advanced Light Source. Building 90 (to the northeast on the top of the hill) and Building 88 are partially visible; however, much of the hillside is screened or obscured by existing vegetation.

The simulations in both Figures IV.A-4 and IV.A-5 depict several new buildings included in the Illustrative Development Scenario, although, as under existing conditions, most would be largely obscured by trees and other vegetation. The most notable new structures in the simulations are the two buildings apparent in Figure IV.A-4, Parking Garage PS-1, which would be constructed at the site of an existing surface parking lot at the head of Blackberry Canyon, and Building S-4, farther upslope, behind the existing Bevatron site. Most of the buildings depicted in the simulation in Figure IV.A-5 are visible only as incomplete facades, partially hidden by existing vegetation and existing structures. Building S-1 would be the most prominent new structure and the upper portion of the building's western façade would be visible from this vantage point. In general, views of the Lab hill site would be incrementally intensified because additional buildings would be visible. In most instances, however, direct views of any one specific building would not be possible. No buildings would be constructed of a height and/or without sufficient screening such that they would dramatically stand out from existing Lab development in long-range views of the hillside. Under the 2006 LRDP, evaluation of building height and landscaping would be instituted as an integral part of the design review process. It is noted that reproduction of the photographs and visual simulations limits to some degree the clarity of the image portrayed. Therefore, while the views and visual simulations depicted in Figures IV.A-4 and IV.A-5 and the other visual simulations in this section are intended to illustrate potential visual changes, the degree of change perceived by observers will vary. For example, some observers could be more keenly aware of any increase in building intensity on the Lab's main hill site, and these observers could find the changes depicted in Figures IV.A-4 and IV.A-5 to be substantially disruptive.

Existing view from Shattuck Avenue at Center Street

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-4
Site Photo and Simulation

Existing view from Hearst Avenue at Shattuck Avenue

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-5
Site Photo and Simulation

Figure IV.A-6 illustrates a long-range view of the hill site from University Avenue and San Pablo Avenue looking east. From this location, foreground views are dominated by the street and mainly low-rise commercial/mixed-use buildings. Mid-ground views are of vegetation strips in the traffic island located in the center of University Avenue. In the background, the dome of the Advanced Light Source and other building forms are visible. As illustrated in the simulation, a number of future LRDP buildings included in the Illustrative Development Scenario would be visible. New buildings shown in the simulation would range between two and eight stories in height and the visual change associated with construction of new buildings would be apparent because, in this viewpoint, existing development on the LBNL hill site comprises only a small fraction of the visible setting, and because there is less dense vegetation in the setting than is the case from some other viewpoints. Nevertheless, with the buildings shown in the simulation, the developed portion of the LBNL hill site would continue to be less extensive than the vegetated areas of the hill site, and new buildings would be partially obscured by vegetation and topography, similar to present conditions. As with the views shown in Figures IV.A-4 and IV.A-5, the project would affect a scenic vista and scenic resources, to varying degrees, depending on the observer, and some observers could find the changes disruptive.

As described above, most new development under the 2006 LRDP as described by the Illustrative Development Scenario would be partially or largely obscured by existing vegetation and topography. Additionally, the Lab would continue to implement its existing policies for revegetation and landscaping, with an emphasis on the use of native plants and trees. Guidance in the LRDP and the Design Guidelines call for, among other things, clustering new development primarily in existing developed areas and providing screening landscape elements to visually screen large buildings and to mass and site buildings to minimize their visibility.

Given that the Lab's hill site would continue to appear as a vegetated hillside with buildings among trees and shrubs, that the natural and manmade topography of the site limits views from any one vantage point to a relatively small portion of the hill site, and that development under the LRDP would be guided by the LRDP principles and strategies and LBNL Design Guidelines, it is likely that many observers would not consider the changes in the existing visual setting to be substantial. Also, many individual projects or buildings that could be constructed pursuant to the LRDP would not result in a substantial change. As noted previously, however, visual quality is subjective, and different observers may have different reactions to changes in long-range views of the Lab's hill site, with some people likely to find some of the increases in building density, even though partially screened, to be disruptive or even offensive. Even though the changes to the site would occur in the context of existing development and not affect pristine views, some of the visual impacts would appear substantial to at least some viewers. In other instances, while the overall visual character of the site may remain similar, there may be substantial new buildings included in the vista. Given that aesthetic impacts are inherently somewhat subjective, and given the totality of potential development even though many individual buildings would not have a substantial effect, and also to provide a conservative analysis that avoids any possible under-estimation of impacts, this EIR concludes that the proposed LRDP, as described by the Illustrative Development Scenario shown in the visual simulations, would potentially have a substantial adverse effect on scenic vistas, and might be found by some observers to substantially

Existing view from University Avenue at San Pablo Avenue

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-6
Site Photo and Simulation

damage scenic resources. In light of the above, the project's effect on aesthetics and visual quality is determined to be significant.

Mitigation: No mitigation is identified beyond the implementation of the LBNL Design Guidelines and the accompanying policy direction in the draft LRDP, and this impact is considered significant and unavoidable. However, Chapter V of this EIR includes the Reduced Growth 1 Alternative, which would result in lesser changes in the visual environment by constructing less overall building square footage and buildings of reduced height and mass. This alternative would result in lesser aesthetic impacts than would the proposed project.

Project Variant. The project variant would alter the on-site adjusted daily population but would not result in any change in buildings or structures developed, compared to what is contemplated under the LRDP. Therefore, effects on scenic vistas and scenic resources would be the same as those described for the proposed LRDP and would be considered significant.

Individual Future Projects/ Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of development under the LRDP. The Illustrative Development Scenario includes demolition of certain existing buildings and new construction, and such demolition and construction are consistent with the changes in visual character that would result from implementation of the LRDP. Individual projects identified in the Illustrative Development Scenario would alter existing scenic vistas and resources in the same manner as described above with respect to construction pursuant to the LRDP. Thus, while the impact of many of the individual buildings in the Illustrative Development Scenario would not be substantial or significant, overall the aesthetic impact of such construction activities would be significant.

Impact VIS-3: The proposed project would alter the existing visual character of the Lab site and could substantially degrade the existing visual character and quality of the site and its surroundings. (Significant and Unavoidable)

Implementation of the 2006 LRDP would result in visual and aesthetic changes at the LBNL hill site and could alter the site's character visible from certain public vantage points. Changes would be associated with (1) demolition of specific existing buildings, (2) development of new buildings, (3) proposed landscaping and other on-site improvements, and (4) the pattern of clustered development.

The Illustrative Development Scenario upon which the visual simulations are based assumes demolition of approximately 440,000 square feet of existing building space on the hill site over a period of about 20 years to accommodate future uses. Aesthetic changes are expected to be the greatest within the Old Town area, adjacent to the Advanced Light Source (Building 6), where the demolition of about 30 buildings and structures and replacement with new structures are proposed. Redevelopment of this area would remove low-profile, temporary trailers and other low-rise structures of moderate to low visual quality and allow for the eventual construction of contemporary lab/office buildings with improved amenities tailored to LBNL's future research needs.

Project-related changes to the hill site would be based on development patterns that generally follow the Illustrative Development Scenario, which provides a conceptual portrayal of potential development under the LRDP. The photo simulations in Figures IV.A-7 through IV.A-9, discussed below, illustrate possible building massing, height and approximate placement that could be developed under the 2006 LRDP. The photo simulations are taken from representative public vantage points and are intended to reflect the worst-case visual impact; that is, the locations from which the greatest change would be visible to the public from off-site locations. The actual locations of new buildings, configurations, uses, and other development features may vary, and other potential scenarios for development under the LRDP would be possible, but they would likely involve the same intensity of development (i.e., essentially the same amount of building space) and therefore effects on the visual character of the site would be expected to be similar. Proposed building demolition and new construction, as well as proposed parking lots and structures, are presented in Chapter III, Project Description (see Tables III-6 and III-7).

Individual projects identified at this time have not undergone detailed design, although it is anticipated that future buildings on the LBNL site would be developed based on the 2006 LRDP's development cluster concept, in which research and academic uses would be constructed in close proximity. Each research or academic cluster would consist of a group of buildings around open space such as a plaza or quad, and distinctly bounded by discernible edges, generally in the form of undeveloped parts of the Lab site. As proposed by the LRDP, each cluster would consist of a "keystone" or signature building that would serve as a visual landmark and would be the principal reflection of the design concept of all buildings within that cluster. Six development clusters have been identified in the LRDP; these would be organized around existing facilities (see Figure III-7 in Chapter III, Project Description). The cluster concept would guide development at other areas on the site and result in an alteration of visual quality and character.

The 2006 LRDP calls for the demolition of some buildings and the amalgamation of existing and future uses into a select number of new buildings that would be constructed in already developed portions of the site. While the building envelopes of future structures could be larger than the smaller, temporary structures they would replace, it is anticipated that future buildings would be designed to avoid adverse impacts on the character of the site. The heights of future buildings could range from one to eight stories, although future projects would typically be two to four stories, consistent with the site's existing permanent buildings. Figure III-6 in Chapter III, Project Description, illustrates the proposed height districts on the hill site, which are part of the LBNL Design Guidelines, a companion document to the LRDP and a required consideration under the design review process for future projects. While future buildings would be generally in scale with buildings they would surround and within already developed portions of the site to allow for more efficient site planning, some buildings would be larger than existing structures or would be constructed in areas that are predominately undeveloped. These changes could substantially alter the site's character as depicted in Figures IV.A-7 through IV.A-9.

Figure IV.A-7 shows an existing view into the LBNL East Canyon area, looking north from approximately the easternmost extent of Centennial Drive, where an existing crosswalk provides access to the UC Berkeley Botanical Garden. The existing view from this location, near the

Existing view from Centenial Drive crosswalk at Botanical Garden

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-7
Site Photo and Simulation

Existing view from Panoramic Way

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-8
Site Photo and Simulation

Existing view from Ridge Road at Euclid Avenue

Conceptual visual simulation of Proposed Project

View Diagram of Proposed Project

SOURCE: Environmental Vision

LBNL 2006 Long Range Development Plan . 201074

Figure IV.A-9
Site Photo and Simulation

LBNL Strawberry Canyon Gate, is primarily of utilitarian structures including stairs and a ramp that provide pedestrian access to LBNL; a number of light standards; signage, including a bus stop sign and a bench; utility infrastructure; and some small buildings. While trees and other vegetation are dominant elements in the view, along with the open sky, the scene is not one of an undeveloped, natural environment, but rather of a built environment within the wooded East Bay hills.

The simulation in this figure depicts potential major new LBNL development in the East Canyon, where the Lab's Life Sciences cluster currently exists, and therefore represents one of the most dramatic potential visual changes under the 2006 LRDP. Two relatively large buildings depicted in the simulation (S-13 and S-14) are identified in the Illustrative Development Scenario, which represents a conceptual portrayal of development under the LRDP. The introduction of the new buildings to this area would represent a relatively substantial change to the visual character. As noted above, the change would occur in an already developed area, and both existing vegetation and open sky would continue to be prominent elements in the resulting scene. Moreover, the simulation presents only an illustration of the potential massing of the new buildings, without fenestration (windows), articulation, or other architectural detail, and the incorporation of the guidance within the LRDP and the LBNL Design Guidelines would be expected to minimize the impact of new buildings when the final design is developed. Although development pursuant to the LRDP would occur within the already substantially developed Lab hill site, adjacent to and in proximity to existing buildings and other manmade elements, the visual change would likely be considered by some observers to adversely affect the visual character of the site or its surroundings. Also, while many of the individual buildings that could be constructed pursuant to the 2006 LRDP would not result in a substantial visual change, the total amount of visual alteration under the 2006 LRDP could be perceived as substantial. Therefore, for purposes of a conservative assessment, the impact is considered significant.

Figure IV.A-8 shows an existing view into the LBNL site from the Panoramic Hill neighborhood on the Berkeley-Oakland border, looking north from Panoramic Way. Foreground views are composed of vegetation and the roofs of a single-family home fronting Panoramic Way.[3] Mid-ground views are of Lawrence Drive and trailers on the LBNL site. The existing Building 31 is visible, as is a portion of Building 77A, farther up the hillside and largely obscured by trees. The simulation in this figure depicts a three-story building (S-9) (identified in the Illustrative Development Scenario) that steps up the sloping hillside, a small portion of a proposed retaining wall situated below and to the east of Building S-9, and very small portions of other potential new buildings (S-10, S-11 and S-13) in the East Canyon area partially visible through the trees to the right. This view of this site, considered a fleeting view through a small break in existing vegetation, is generally not available to the public, although it could be noticeable to Panoramic Hill residents. New development at the LBNL site illustrated in this simulation would be apparent and would alter the site's character by increasing the intensity of the built environment. The new development could be found by some people (especially area residents) to adversely affect the visual character of the site and its surroundings, given that the development would result in

[3] The photograph depicting this view was shot through a small break in the vegetation along Panoramic Way and depicts one of the few publicly accessible viewpoints of Berkeley Lab from the Panoramic Hill neighborhood. Dense vegetation screens most views toward the Lab from public streets .

additional building volume and footprint within this view. In light of the above, for purposes of a conservative assessment, the impact is considered to be significant.

The view in Figure IV.A-9 is from the Northside residential neighborhood of Berkeley, looking east into the Lab hill site along Ridge Road from Euclid Avenue. Foreground and mid-ground views are of tree-lined, moderate-density residential streets. Existing Lab buildings clearly visible include Building 71 atop the ridgeline and portions of the Building 50 complex to the right (immediately left of the telephone pole in the foreground). This view is clearly of a developed area; existing residences, streets and sidewalks, vehicles, and utility structures are the dominant elements in the scene. The Lab's hill site forms the background in this view, along with open sky.

In the simulation from this viewpoint, several new LBNL buildings included in the Illustrative Development Scenario are visible, and the Parking Garage PS-1 and Building S-4, farther upslope, are prominent. The upper portion of Building S-3 peeks out from the trees at the upper right. Because of its location at the head of Blackberry Canyon, Parking Garage PS-1 would be readily visible from this viewpoint. Other new LBNL development would be somewhat obscured by existing vegetation, as is shown in all of the simulations for most new development on the hill site. The new structures would increase the intensity of the built environment on the hillside and alter the character of the hillside. As in the other views discussed above, the change is anticipated to be perceived by some observers as an intrusive one that could substantially alter background elements in the scene, reducing the amount of hillside vegetation and replacing some of the greenery with new development on the Lab site. Therefore, the visual change is considered to result in a significant adverse impact.

New development would not necessarily result in a substantial change in the site's character, either from all viewpoints illustrated in Figures IV.A-2 through IV.A-6 or in the opinion of all observers. While the site's character would continue to appear as a primarily vegetated hillside with buildings among trees and shrubs, and while implementation of the LRDP Principles and Strategies and the LBNL Design Guidelines would be expected to reduce potential effects on visual character, some new buildings allowable under the LRDP could be more visually intrusive than under existing conditions, particularly to some observers. As a result, it is anticipated that some observers would perceive a substantial adverse change in the on-site visual character from construction of individual buildings. Even though the changes to the site would occur in the context of existing development and not affect pristine views, some of the visual impacts of some buildings would appear substantial to at least some viewers. For example, potential development shown in Figure IV.A-7 would introduce substantial building massing in front of an existing tree line viewed from a public street. In other instances, while the overall visual character of the site may remain similar, there may be substantial new buildings included in the vista. Given that aesthetic impacts are inherently somewhat subjective, and also to provide a conservative analysis that avoids any possible under-estimation of impacts, this EIR concludes that the change in visual character that could result from overall development under the 2006 LRDP, as described by the Illustrative Development Scenario and the representative visual simulations, could potentially alter the site's character in a substantial and adverse manner. Thus, for purposes of a conservative assessment, and even though many of the buildings that could be constructed pursuant to the 2006

LRDP would not result in a significant impact, this EIR concludes that the project's impact on visual character would be significant.

Mitigation: No mitigation is identified beyond the implementation of the LBNL Design Guidelines and the accompanying policy direction in the draft LRDP, and this impact is considered significant and unavoidable. However, Chapter V of this EIR includes the Reduced Growth 1 Alternative, which would result in lesser changes in the visual environment by constructing less overall building square footage and buildings of reduced height and mass. This alternative would result in lesser aesthetic impacts than would the proposed project.

Project Variant. The project variant would alter the on-site adjusted daily population but would not result in any change in buildings or structures developed compared to what is contemplated under the LRDP. Therefore, visual character impacts would be the same as those described for the proposed LRDP and would be significant.

Individual Future Projects/ Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of development under the LRDP. The Illustrative Development Scenario includes demolition of certain existing buildings and new construction, and such demolition and construction are consistent with the changes in visual character that would result from implementation of the LRDP. Individual projects identified in the Illustrative Development Scenario would alter the existing visual character of the Lab site in the same manner as described above with respect to construction pursuant to the LRDP. The impact would be considered significant for the same reasons stated above.

Light and Glare Impacts

Impact VIS-4: Implementation of the LRDP would introduce new sources of light and glare into the LBNL site and increase the overall level of ambient light in the site vicinity. (Significant; Less than Significant with Mitigation)

Implementation of the 2006 LRDP would result in construction of new buildings that would incrementally increase existing lighting levels on the hill site. The LRDP proposes future buildings in portions of the developed hillside terrace area of LBNL that include other buildings that are themselves sources of light and glare.

Anticipated new buildings would generate additional light in several ways. First, light from the interior of the building would be visible through building windows. Second, lighting fixtures would be affixed to outdoor areas at the building entry for safety and security. Finally, lighting fixtures may also be placed around building perimeters for safety and security.

> **Mitigation Measure VIS-4a:** All new buildings on the LBNL hill site constructed pursuant to the 2006 LRDP shall incorporate design standards that ensure lighting would be designed to confine illumination to its specific site, in order to minimize light spillage to adjacent LBNL buildings and open space areas. Consistent with safety considerations,

LBNL project buildings shall shield and orient light sources so that they are not directly visible from outside their immediate surroundings.

Mitigation Measure VIS-4b: New exterior lighting fixtures shall be compatible with existing lighting fixtures and installations in the vicinity of the new building, and will have an individual photocell. In general, and consistent with safety considerations, exterior lighting at building entrances, along walkways and streets, and at parking lots shall maintain an illumination level of not more than 20 Lux (approximately 2 foot-candles).

Mitigation Measure VIS-4c: All new buildings on the LBNL hill site constructed pursuant to the 2006 LRDP shall incorporate design standards that preclude or limit the use of reflective exterior wall materials or reflective glass, or the use of white surfaces for roofs, roads, and parking lots, except in specific instances when required for energy conservation.

Significance after Mitigation: Less than significant.

Project Variant. The project variant would alter the on-site adjusted daily population but would not result in any change in buildings or structures developed, compared to what is contemplated under the LRDP. Therefore, light and glare impacts would be the same as those described for the proposed LRDP and would be less than significant with implementation of Mitigation Measures VIS-4a, VIS-4b, and VIS-4c.

Individual Future Projects/ Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of development under the LRDP. The Illustrative Development Scenario includes demolition of certain existing buildings and new construction, and such demolition and construction are consistent with the changes in visual character that would result from implementation of the LRDP. Individual projects identified in the Illustrative Development Scenario would alter the existing visual character of the Lab site in the same manner as described above with respect to construction pursuant to the LRDP. Thus, the impact of such construction activities would be less than significant with implementation of Mitigation Measures VIS-4a, VIS-4b, and VIS-4c.

IV.A.3.5 Cumulative Impacts

This analysis considers cumulative growth as represented by the implementation of the Berkeley and Oakland general plans (and thus includes growth anticipated by the City of Berkeley General Plan EIR), and implementation of the UC Berkeley 2020 LRDP (including the Southeast Campus Integrated Projects) along with implementation of the proposed LBNL 2006 LRDP. (Demolition of the Building 51 complex—housing the Bevatron accelerator—although the subject of a separate project-specific EIR, is analyzed as part of the 2006 LRDP because the buildings were in place when the EIR analyses were undertaken.) Additional projects currently underway at UC Berkeley, described in Section VI.C, Cumulative Impacts, of this EIR, are also accounted for in the cumulative analysis.

The geographic context for this cumulative analysis includes areas from which Berkeley Lab is visible to the public from exterior viewpoints. This analysis evaluates whether the impacts of the proposed LRDP, together with the impacts of cumulative development, would result in a significant impact (based on the significance criteria on p. IV.A-7) and, if so, whether the contribution of the LRDP to this impact would be considerable. Both conditions must apply in order for the project's cumulative impacts to rise to the level of significance.

Impact VIS-5: Implementation of the LRDP, in conjunction with cumulative development, would alter the visual character of, and change views of, the Oakland-Berkeley hills in the vicinity of Berkeley Lab. (Less than Significant)

Lands northeast of the Lab and farther eastward into the East Bay hills are managed by the East Bay Regional Park District (EBRPD). The EBRPD does not have plans to build large facilities, remove large groves of trees, or otherwise develop its lands within the short- and medium-range viewsheds analyzed in this EIR.[4] The City of Berkeley extends into the hill area adjacent to and north of the Lab. City zoning for the hill area is single-family residential with a maximum floor area ratio of 0.4 for any given lot. In accordance with the City's latest General Plan, no large buildings would be developed in this area and existing developed areas – which are largely built out – would be limited in the degree of new development that could occur.[5] The areas of Oakland near LBNL under City of Oakland jurisdiction are designated Hillside Residential in the Oakland General Plan and zoned either Low Density or Single Family.[6]

Given the above land use controls, little or no development beyond that proposed at Berkeley Lab under the 2006 LRDP is anticipated in the Oakland-Berkeley hills in the general area of LBNL during the approximately 20-year planning horizon of the LRDP. UC Berkeley does not propose substantial new development on its hill site, and much of the remaining surrounding area is park or open space land. Therefore, little development of consequence that would be visible to

4 The EBRPD does have several maintenance projects planned for Tilden Regional Park, including a weather-tight enclosure and fire sprinkler for the historic merry-go-round and installation of new chemical toilets, with proceeds from the voter-approved Measure CC parcel tax of November 2004. However, these projects would not result in substantial visual change. In addition, the EBRPD will use Measure CC funds to "manage vegetation for fuels reduction in coordination with the protection and enhancement of wildlife habitat in fuel break areas to provide defensible space near structures and meet the Hills Emergency Forum 8' flame length standard" in both Tilden Park and Claremont Canyon Regional Preserve. (Source: Measure CC Update, EBRPD website, viewed May 21, 2005 at http://www.ebparks.org/district/measurecc_update.htm.)

5 The entire hill area that is outside University of California (including LBNL) control is designated Low Density Residential on the Berkeley General Plan land use diagram (viewed on city website May 21, 2005, at http://www.ci.berkeley.ca.us/maproom/Maps/gplandusemap.htm). Low density residential is described in the General Plan Land Use Element as follows: "These areas are generally characterized by single-family homes. Appropriate uses for these areas include: residential, community services, schools, home occupations, recreational uses, and open space and institutional facilities. Building intensity will range from one to 10 dwelling units per net acre, not including secondary units, and the population density will generally not exceed 22 persons per acre. For information purposes, the compatible zoning districts for this classification are: Single Family Residential (R-1), which allows approximately 9 principal dwelling units/acre (plus a second unit per parcel, as mandated by state law) and Environmental Safety- Residential (ES-R), which allows approximately 5 dwelling units per acre. Height limits in these zoning districts are typically 28 feet with provisions to allow up to 35 feet" (viewed on website May 21, 2005, at http://www.ci.berkeley.ca.us/planning/landuse/plans/generalPlan/landUse.html).

6 As with Berkeley zoning, these zoning designations allow no more than one unit per lot, plus a secondary unit as mandated by state law. General plan and zoning map viewed on city website May 21, 2005, at http://www.oaklandnet.com/government/ceda/revised/planningzoning/ZoningSection/ZoningMapFinal.pdf.

observers who also would see the Berkeley Lab hill site is expected other than development pursuant to the 2006 LRDP.

The Final EIR for the UC Berkeley Southeast Campus Integrated Projects (SCIP) finds that the SCIP would result in significant unavoidable visual impacts resulting from effects on the character of Gayley Road due to construction of a new parking structure and on views from Panoramic Hill due to improvements to Memorial Stadium (UC Berkeley, 2006). However, these impacts would be specific to the Integrated Projects analyzed in the SCIP EIR; implementation of the LBNL 2006 LRDP would not result in changes in views from the same viewpoints, and thus would not combine with the impacts of the Integrated Projects. Therefore, the LRDP's contribution to any cumulative impacts resulting from implementation of the Integrated Projects would be less than significant.

Because the 2006 LRDP development (with mitigation) would not result in significant visual or light and glare impacts, because little other development is expected that could result in overlapping (cumulative) visual impacts, and because the LRDP would not result in adverse impacts that would occur in combination with the UC Berkeley Integrated Projects, the cumulative aesthetic effects of the 2006 LRDP would be less than significant.

Mitigation: None required.

Project Variant. The project variant would alter the visual character of, and change views of, the Oakland-Berkeley hills in the vicinity of Berkeley Lab in substantially the same manner as the 2006 LRDP development. The cumulative aesthetic effects of the project variant would be less than significant.

Individual Future Projects/Illustrative Development Scenario. The Illustrative Development Scenario is a conceptual portrayal of development under the LRDP. A future project under the LRDP such as conceptually portrayed in the Illustrative Development Scenario, when combined with other projects under the LRDP and other development as discussed above, would also, for the reasons stated above, result in a cumulative aesthetic impact that would be less than significant.

IV.A.4 References – Aesthetics and Visual Quality

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