



DRAFT

**UNIVERSITY OF CALIFORNIA
BERKELEY LAB**

LRDP

2006 LONG RANGE DEVELOPMENT PLAN

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Director's Foreword

LET'S RENEW OUR COMMITMENT TO RESEARCH, EDUCATION, AND INNOVATION WHILE SERVING AS A POSITIVE FORCE IN ECONOMIC, ENVIRONMENTAL, AND COMMUNITY RESPONSIBILITY.

Basic research such as the work performed at Berkeley Lab underpins our discoveries and, ultimately, the security, economic prosperity, and health of our citizens. The Laboratory's combination of strengths in rapidly advancing areas of science and unique research facilities enables the development of large-scale, interdisciplinary research programs to strengthen the foundations of America's competitiveness. Unfortunately, our aging facilities will not accommodate the multi-disciplined collaborations required to meet the future's scientific challenges.

The Laboratory will fall far short of its responsibilities to the nation if the facilities of previous generations are relied upon for a new generation of science. As national challenges emerge we must maximize the use of our scientific resources, revitalize our existing infrastructure, and make long-term investments in new scientific facilities. With renewal and development designed for collaborative science, Berkeley Lab will build stronger partnerships with academia, industry, and government.

As a leading institution in the areas of energy and environmental research, we are committed to developing the Laboratory in a manner that sets the standard for resource conservation and stewardship. To this end, the Berkeley Lab Sustainability Policy was recently established to formalize our simultaneous and balanced pursuit of economic viability, environmental health, and public responsibility over the long-term through appropriate investment decisions and operating practices. As a result, environmental sustainability will be a key decision component in the development of the Laboratory over the coming decades.

Berkeley Lab employees live and work in our community and share in its mutual success. We have a long term commitment for a sustainable Laboratory that is an integral component of the East Bay landscape. This LRDP has been developed as we celebrate our 75th Anniversary, with the intent to provide a quality environment for decades into the future. Our sustainability policy recognizes maintaining proper regard for land-use constraints. As described in this LRDP, these

FIGURE F.1 The new Molecular Foundry building earned the U.S. Green Building Council's "Silver" rating for sustainable design and construction



constraints include: respecting open space and landscaping, maintaining slopes and soil stability, adhering to design guidelines, and improving pedestrian and public transit while minimizing traffic congestion.

Our future prosperity will depend on our preeminence in science and technology. Let's not take our current strength for granted. Let's renew our commitment to research, education, and innovation while serving as a positive force in economic, environmental, and community responsibility. The principles for the responsible development of Berkeley Lab necessary to deliver scientific discoveries for humankind and the environment are embodied in this 2006 Long Range Development Plan.

*Steven Chu, Director
Lawrence Berkeley National Laboratory*

Introduction

Lawrence Berkeley National Laboratory (Berkeley Lab, the Laboratory) is a multi-program scientific research campus operated by the University of California (UC) for the U.S. Department of Energy (DOE). The Laboratory conducts unclassified research to carry out its mission of reaching a deeper understanding of our world and delivering science-based solutions to problems of national significance.

Berkeley Lab is one of ten national laboratories sponsored by DOE's Office of Science to perform research and development that is not well suited to a university or private sector setting because of its scope, infrastructure requirements, or multidisciplinary nature. Eleven Nobelists have been associated with the Laboratory and eighty-one of its current researchers are members of the National Academies. The Laboratory is regarded by the DOE as a national treasure that while in the pursuit of its mission:

- Performs leading multidisciplinary research in the life & environmental, physical, computing, and general sciences
- Develops and operates advanced experimental facilities for investigators from other institutions worldwide
- Educates and trains future generations of scientists and engineers to sustain national science and technology competitiveness

- Transfers knowledge and technological innovations, and fosters productive relationships among Berkeley Lab's research programs, universities, and industry

Berkeley Lab holds the distinction of being the oldest national laboratory since its inception on the UC Berkeley campus in 1931. The Laboratory still conducts research on the Berkeley campus, while the majority of its scientific and support operations take place at the adjacent "main site" on land owned by the Regents of the University of California. The Laboratory also occupies research, office, and support space in leased facilities in the cities of Berkeley, Oakland and Walnut Creek, California as well as Washington DC. This document is concerned solely with the growth and development of the Laboratory's main site.

This 2006 Berkeley Lab Long Range Development Plan (LRDP, the Plan) will guide the physical development that the Laboratory will require over the next 20 years to achieve its scientific vision. The subsequent scope and nature of the development described in this LRDP reflect current and projected national scientific priorities. The evolution of these priorities over time will drive a corresponding change in the actual development that will occur at the Laboratory.

FIGURE I.1 The view southwest from the Laboratory at sunset



To maximize Berkeley Lab’s responsiveness to evolving national priorities, this LRDP provides a general land use plan and development framework to guide the siting of new facilities and infrastructure. The Plan does not define specific buildings or site development, nor commit the institution to any specific project. The LRDP provides Laboratory management, facilities staff, and the UC Regents with decision-making guidance for future projects.

The LRDP balances the Laboratory’s scientific goals with environmental stewardship and the flexibility to accommodate future mission needs in order to build a safe, efficient research institution that is conducive to scientific inquiry. Two supporting documents, the *Berkeley Lab Design Guide* and the *Berkeley Lab Sustainability Policy* were developed in parallel with

the LRDP. These documents—both of which establish specific guidelines for site planning, landscape, and building design—provide the means to implement the Plan’s principles as each new project is developed.

This LRDP is accompanied by a separate Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA). The EIR includes a detailed description of the current Berkeley Lab site and an analysis of the potential environmental impacts resulting from the development projected in this LRDP.

The EIR impact analysis is based upon its Illustrative Development Scenario (IDS)—one of many possible development scenarios encompassing the maximum amount of new building space, population, parking, and other site improvements identified

in the LRDP. While the development presented in the IDS is consistent with LRDP principles, it is not necessarily a precise representation of how the Laboratory will develop over time. Rather, the IDS has been designed to assist the EIR in analyzing a broad range of environmental impacts.

The LRDP and its EIR provide a framework for the subsequent review of individual projects as they occur at Berkeley Lab. Each major project with the potential to affect the physical environment will be assessed within this framework and tiered off of this LRDP's EIR to determine the appropriate level of CEQA review. Once CEQA review is complete, each project must then be approved by the UC Regents, the President of the University of California, or the Director of Berkeley Lab, depending on the scope and nature of the project.

ORGANIZATION OF THIS DOCUMENT

The LRDP is organized in three sections.

Background

The Background section frames the planning context for the LRDP with an overview of the Laboratory's location and physical context, history, mission, organization, scientific research, and facilities conditions.

The Vision

This section defines the scientific vision for the Laboratory and explains how achieving that vision will result in population and facilities changes and growth. The Vision also discusses the conceptual framework for development and the fundamental planning principles that guide all elements of the Plan.

The Plan

The Plan section describes the strategies that the Laboratory will employ to meet its facilities needs. It is the core of the LRDP and is comprised of six major elements.

- Land Use
- Development Framework
- Vehicle Access, Circulation, and Parking
- Pedestrian Circulation
- Open Space and Landscape
- Utilities

The narrative for each element begins with an overview of existing conditions followed by the strategies and plans for future development.

PREPARATION OF THIS DOCUMENT

This LRDP has been prepared by the Berkeley Lab Facilities Planning Group with the participation of key Laboratory and community constituencies and the UC Office of the President planning staff. The planning process was structured around the direction and guidance of two committees. The Steering Committee, comprised of Laboratory senior managers, served as the decision making body to provide direction on all aspects of the project. The Advisory Committee represented Laboratory requirements for the development of new projects, facilities operations, and public affairs.

The process began with a comprehensive analysis of scientific program needs and existing site conditions. This analysis provided the basis for the Plan's overarching goals and growth projections that were developed with the participation of the Laboratory's scientific division directors. Planning staff worked with the Steering Committee and UCOP planning staff to ensure these goals and projections were consistent with the vision that DOE and the University have for Berkeley Lab. Once the fundamental parameters were established, Laboratory Planning staff produced the document in conjunction with BMS Design Group and Dangermond Architects.

As the LRDP developed, its environmental impacts were assessed and, when necessary, adjustments were made to minimize the overall impacts of the Plan. Periodic reviews were conducted throughout the process to ensure that the LRDP accurately reflects the intentions of the Laboratory's leadership and University requirements.



BACKGROUND

This section frames the planning context for the 2006 LRDP with a background discussion that includes:

Laboratory Location

Berkeley Lab Historical Perspective

Berkeley Lab 2006

Facilities Conditions

Laboratory Location

Berkeley Lab is located within the Cities of Berkeley and Oakland in Alameda County and the San Francisco Bay Area. This cosmopolitan region has a population of over 6 million, and a highly diversified, technology and service-oriented labor force of over 3 million people. Alameda County and the greater Bay Area are home to significant educational, research, industrial, agricultural, and recreational resources.

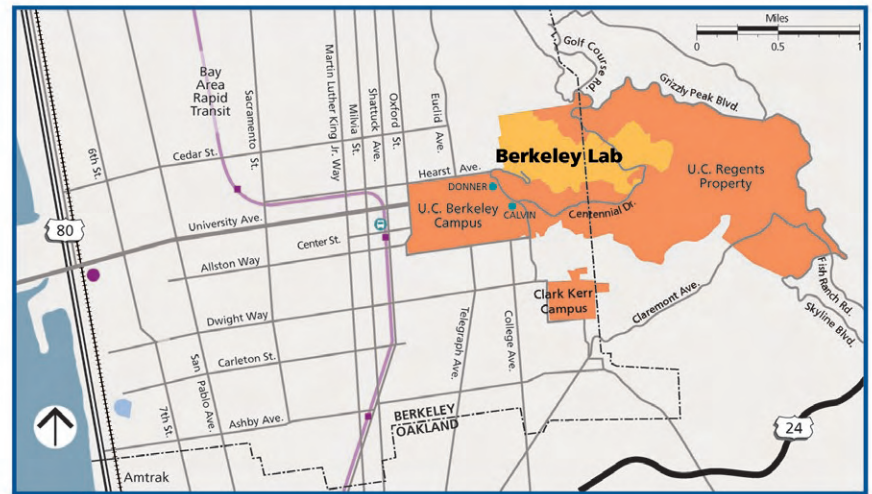
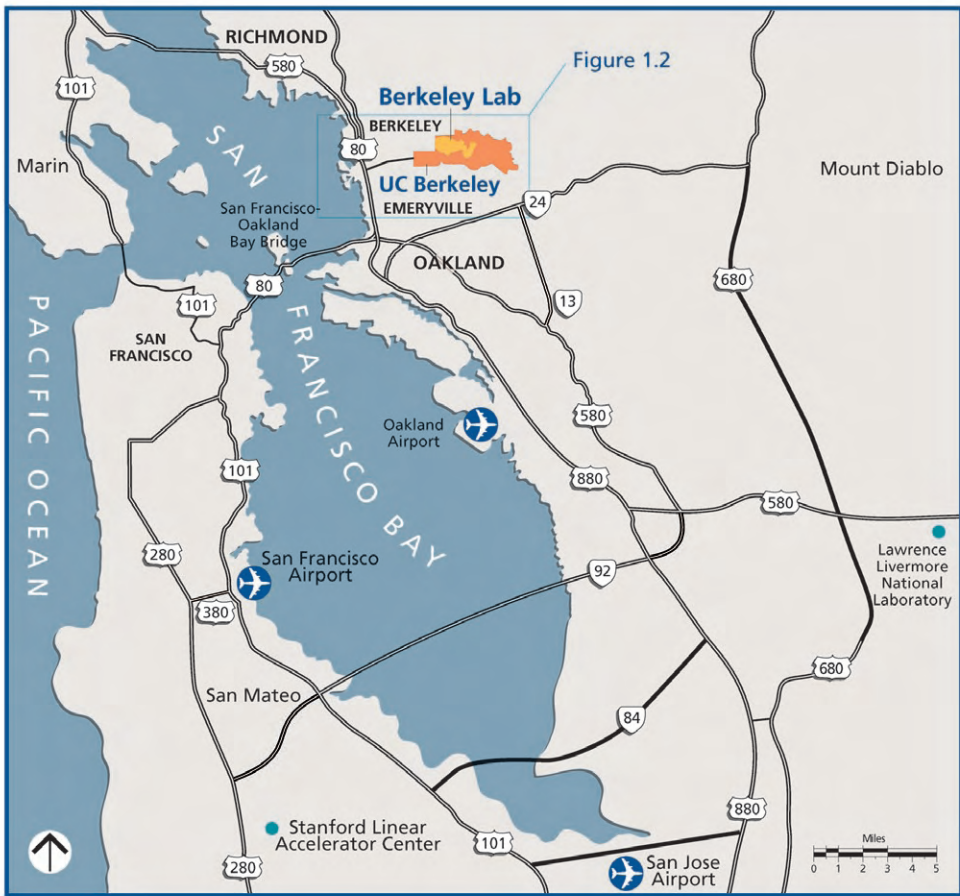
Berkeley is a city with innovative businesses, a population of just over 100,000 residents, and a Mediterranean climate. Its elevation rises from sea level to over 1,300 feet in the Berkeley Hills. The same range also forms the eastern border of Oakland to the south, a city with a population of approximately 400,000 residents. With an international airport and one of the nation's busiest seaports, Oakland has a reputation as the "Hub of the West." Berkeley and Oakland are home to some of California's most beautiful natural parks and open spaces.

Berkeley Lab's main site, the primary location of its scientific, administrative and support operations, is located on a 202 acre parcel of UC Regents' land in the lower- and mid-elevations of the Berkeley/Oakland hills. This range is approximately three

miles east of the San Francisco Bay. The Laboratory is bordered by urban development to the west and predominantly open space to the south, east, and north.

Three miles west of the Laboratory is Interstate 80, a freeway that connects the Laboratory to the greater Bay Area. Immediately to the east of the Laboratory is Grizzly Peak Boulevard, an arterial roadway that connects the Laboratory to eastern Alameda and Contra Costa counties via State Highway 24.

Berkeley Lab is built on a spectacular hillside site that affords tremendous views and gives rise to its distinguishing "hillside development pattern." Across the Laboratory, rustic landscape surrounds clusters of research buildings located on the few relatively level areas on the site. These buildings are purpose-built and industrial in nature giving the site a no-nonsense character of simple, unpretentious buildings. The experience of this informal built environment, the hillside terrain, natural landscape and panoramic views is valued as one of the Laboratory's most important assets to be preserved and strengthened.



- UC Regents Property
- Berkeley Lab
- Bay Area Rapid Transit Station
- Amtrak Station

FIGURE 1.2 Berkeley Lab's Location within the Cities of Berkeley and Oakland

FIGURE 1.1 Berkeley Lab's Location within the San Francisco Bay Area



FIGURE 1.3 Developed clusters follow the hillside terrain at Berkeley Lab