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**Draft Environmental Impact Report
for
Seismic Life Safety, Modernization, and Replacement
of General Purpose Buildings, Phase 2 Project**

(Including Supplementation of the LBNL 2006 LRDP EIR
with respect to Traffic Impacts at One Intersection)

University of California at
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Berkeley, California

State Clearinghouse Number: 2008122030



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I INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) has been prepared in compliance with the California Environmental Quality Act (CEQA) to inform the University of California (lead agency), responsible agencies, and the public of the nature of the proposed project and its potential impacts. This Draft EIR identifies significant impacts associated with the proposed project and examines alternatives that could avoid or reduce the significant impacts of the proposed project.

A. Summary of the Project

The proposed project is known in full as the Seismic Life Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2 Project, and in brief as the Seismic Phase 2 Project. It involves the demolition of existing structures (Buildings 25/25B, and 55, and six modular trailers associated with Building 71), the construction of a General Purpose Laboratory (GPL), and the seismic strengthening of an existing structure (Building 85/85A). The proposed project is described in further detail below. For a complete description of the proposed project, please see Chapter 3, Project Description.

The proposed project is planned for construction at the Lawrence Berkeley National Laboratory (LBNL) site in Berkeley and Oakland, California. The LBNL site is an approximately 200-acre University-owned site in Berkeley and Oakland, California adjacent to the University of California, Berkeley campus. The project aims to provide seismically safe facilities for scientific research and involves demolishing several older buildings (Buildings 25/25B, 55 and six trailers associated with Building 71) and replacing the demolished space with a new facility that would be built to higher seismic safety standards. In addition, Building 85/85A would be seismically strengthened.

The LBNL site includes research and support buildings and structures that are primarily part of a multi-program National Laboratory called the Lawrence Berkeley National Laboratory, a federally funded research and development center operated and managed by the University of California under contract with the U.S. Department of Energy (DOE). As the proposed project is sub-

ject to discretionary approval by the University of California, environmental review must be completed under CEQA to document potential impacts that may have a significant effect on the environment. In addition, the decision by the DOE to use federal funding in support of the proposed project requires the DOE to comply with requirements of the National Environmental Policy Act (NEPA). The proposed project is therefore subject to review under both CEQA and NEPA, which are discussed below. This document is an Environmental Impact Report (EIR) that evaluates the impacts of the proposed project to satisfy the requirements of CEQA. A separate Environmental Assessment (EA) is being produced concurrently with this document for compliance with NEPA.

B. Supplement to the LBNL 2006 LRDP EIR

In addition to serving as a project-level EIR for the Seismic Phase 2 Project, this document supplements the prior EIR prepared in 2006 for LBNL's Long Range Development Plan (LRDP), with respect to new information regarding operational traffic impacts affecting the program-level analysis of the LRDP as a whole.

C. Environmental Review Process

1. CEQA: Lead Agency

The University of California (UC) is the lead agency for this EIR. This EIR has been prepared in compliance with CEQA and pursuant to the applicable provisions of the Amended University of California Procedures for Implementation of the California Environmental Quality Act (UC CEQA Procedures). This EIR uses CEQA significance thresholds included in the UC CEQA Procedures, unless otherwise stated.¹

¹ University of California, Office of the President website, <http://www.ucop.edu/facil/pd/ceqacomp/welcome.html>, accessed on December 3, 2009.

2. CEQA: Decision to Proceed with EIR

A screening environmental analysis of the proposed project was conducted by UC in the summer and fall of 2008 to screen out issues that were not relevant to the project. Results of this analysis indicated that, while there could be several potentially significant environmental impacts of the proposed project, these likely could be mitigated to a less-than-significant level. Nevertheless, the University conservatively decided to prepare an EIR, rather than to pursue a Negative Declaration or a Mitigated Negative Declaration.

This is a project-specific, stand-alone EIR and is not tiered from the LBNL 2006 LRDP EIR. Although this proposed project is not tiered from the LBNL 2006 LRDP EIR, relevant mitigation measures are a part of the proposed project and included in the proposed project description and are reported in the regulatory setting section of Sections 4.1 to 4.13.

3. CEQA Process

UC prepared and sent a Notice of Preparation (NOP) of an EIR to the State Clearinghouse on December 9, 2008 (see Appendix A). The NOP, which was accompanied by the screening environmental analysis prepared for the project, was also distributed or made available to various State, federal, regional and county agencies, city governments, UC departments, local organizations, and individuals and neighbors that could potentially be affected by the proposed project. A public scoping meeting was held on January 14, 2009 at the North Berkeley Senior Center.

Following the issuance of the NOP and the screening environmental analysis, the proposed location of the GPL was changed in response to comments received on the NOP. Commentors perceived that the former site, Building 74 SE Parking Lot was in too close proximity to the University Botanical Gardens and that the project at that location could cause noise and visual impacts to the Gardens. The EIR project description identifies construction of the GPL at the Building 25 demolition site. The former site is analyzed as one of the project alternatives in Chapter 5.

This Draft EIR is being made available for public and agency review. During the 45-day review period, interested parties will have the opportunity to submit written comments and also attend a public hearing, where they may submit further written comments or make oral comments. Following the 45-day review period, UC will prepare a Final EIR containing responses to all of these comments. The Final EIR will be made available to both agencies and the public at least ten days prior to the UC Regents' decision on whether or not to certify the EIR and approve the project. The Regents' meetings are open to the public, and any statements on the Final EIR or the project can be submitted to The Regents at or prior to the meeting. Consistent with the CEQA Guidelines, comments on the environmental analysis in the Draft EIR should be submitted during the public comment period on the Draft EIR so that they can be considered in formulating the Final EIR.

4. NEPA Process

The DOE issued a notice of intent to prepare a NEPA EA on November 25, 2008 to the same list of interested parties as for the CEQA EIR. Opportunities for agency and public comment on the EA will be concurrent with the EIR comment period. Federal decision-makers will use the EA conclusions to determine whether a Finding of No Significant Impact (FONSI) or an Environmental Impact Statement (EIS) is appropriate.

D. Project Objectives

The project was described in the 2007 *Statement of Mission Need* prepared by LBNL as follows:²

The project proposes to remedy high seismic life-safety risks in general purpose research facilities and lab-wide resource buildings. It will replace three

² LBNL, 2007. *Statement of Mission Need for the Lawrence Berkeley National Laboratory Seismic Life-Safety, Modernization & Replacement of General Purpose Buildings, Phase 2 Office of Science Laboratory Infrastructure Division*. September 2007.

seismically “very poor” and “poor” (UC Seismic Rating) buildings and six failing trailers that cannot be cost-effectively upgraded (43,000 gsf; \$13.7M in deferred maintenance reduction) with one new approximately 43,000 gsf general purpose laboratory/office building. Construction of the efficient new building will allow LBNL to vacate 36,000 gsf of off-site leased space. This project also proposes to seismically upgrade Building 85/85A, the LBNL Hazardous Waste Handling Facility.

Based on the *Statement of Mission Need*, the objectives of the project are as follows:

- ◆ Remedy high seismic life safety risks in general purpose research facilities and lab-wide resource buildings.
- ◆ Provide researchers with safe, modern, life science research space that is fully suitable for 21st century science.
- ◆ Provide general-purpose research and institutional space that is upgradeable and that may flexibly meet the high accuracy requirements of DOE’s 21st century missions. High accuracy laboratory space is essential for the continued development of DOE’s key program areas.
- ◆ Increase efficiency of LBNL research operations and promote scientific adjacencies by offering modern, cost-effective consolidated space at the Lab’s main hill site.
- ◆ Co-locate researchers and graduate students within a cluster of life science research facilities to expand opportunities for instrument sharing and interacting among life scientists engaged in a wide range of research projects.
- ◆ Locate consolidated life science research functions adjacent to the Nanosciences/Molecular Foundry Research cluster to strengthen ties and interaction between these two emerging and related areas of research.
- ◆ Construct a General Purpose Lab to provide replacement space that complies with DOE policy regarding LEED certification and thereby earns a LEED gold certification.

E. CEQA Issues Scoped out of Analysis

On the basis of the screening environmental analysis that was circulated with the NOP, the project was determined to have no impact in the following CEQA issue areas:

Agricultural Resources
Mineral Resources
Population and Housing
Recreation

F. CEQA Issues of Potential Significance

Based on the screening environmental analysis, the following CEQA issues were determined to warrant full evaluation in an EIR. Greenhouse gases were since added to the list of potential CEQA issues for evaluation in this EIR.

1. Aesthetics
2. Air Quality
3. Biological Resources
4. Cultural Resources
5. Geology and Soils
6. Greenhouse Gas Emissions
7. Hazards and Hazardous Materials
8. Hydrology and Water Quality
9. Noise
10. Land Use and Planning
11. Public Services
12. Transportation and Traffic
13. Utilities and Service Systems

G. Report Organization

Chapter 1 – Introduction. The introduction provides an introduction to an overview of the EIR.

Chapter 2 – Summary. This chapter presents a synopsis of the project; the proposed project’s objectives; potential significant and less-than-significant impacts and recommended mitigation measures; alternatives to the project; and cumulative impacts that would result when the project’s impacts are considered in conjunction with the environmental impacts of other reasonably foreseeable past, present, and future projects.

Chapter 3 – Project Description. This chapter describes the proposed project and its components, and the project’s construction schedule. It includes a list of permits and approvals that are necessary to carry out the proposed project.

Chapter 4 – Environmental Evaluation. This chapter is organized into 13 sections, each section focused on one CEQA issue area. Section 4.0 contains the list of projects taken into account in the cumulative analysis. Unless otherwise stated, CEQA issues are analyzed on the basis of CEQA significance thresholds used by UC.³ Mitigations that can minimize the potential project’s impact on the environment are discussed, where appropriate, at the end of each impact analysis.

Chapter 5 – Alternatives. Five alternatives to the project, including a No Project Alternative, are listed. Each alternative is analyzed with respect to its ability to reduce and/or avoid the project’s significant impacts. An environmentally superior alternative is then identified.

³ University of California, Office of the President website, <http://www.ucop.edu/facil/pd/ceqacomp/welcome.html>, accessed on December 3, 2009.

Chapter 6 – CEQA-Required Assessment Conclusions. This chapter summarizes the impacts discussed in Chapter 4 for each CEQA issue, and their significance.

Chapter 7 – Report Preparation. This list identifies the individuals who prepared the EIR and their role in producing the document.

2 SUMMARY

This summary presents a brief description of the proposed project, areas of controversy known to the lead agency, potentially significant impacts of the proposed project, mitigation measures, and impacts that would remain significant, and alternatives that were evaluated for their ability to reduce the proposed project's significant impacts. A summary of project impacts as they may contribute to the overall cumulative impacts is also discussed.

A. Brief Project Description

The Seismic Life Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2 Project (the proposed project) would provide seismically safe facilities for scientific research at the Lawrence Berkeley National Laboratory (LBNL). It would involve demolishing 43,000 gross square feet (gsf) of space contained in several older, seismically poor, very poor, and failing buildings and constructing a similar amount of space in a single new facility elsewhere on the site that would be built to higher seismic safety standards. Specifically, the proposed project involves demolition of Buildings 25/25B, Building 55 and Building 71 trailers C, D, F, J, K, and P. Building 25/ 25B is located at the center of the main hill campus, in the Old Town area. Buildings 55 and 71 are in the northwest of the main hill campus. The new 43,000 gsf General Purpose Laboratory (GPL) would be built on the site where Building 25/25B now stands. Building 85/85A would be seismically strengthened. The project includes a number of mitigation measures from the LBNL 2006 LRDP EIR that have been incorporated into and made part of the proposed project.¹

¹ All adopted 2006 LRDP mitigation measures remain in effect. A number of those mitigation measures are identified in this EIR as measures that apply to and are a part of the proposed project. The fact that a mitigation measure is not specifically set forth in this EIR, however, does not mean that that measure may not apply in some way.

B. Supplementation of the LBNL 2006 LRDP EIR

In addition to serving as a project-level EIR for the Seismic Phase 2 Project, this document supplements the prior EIR prepared in 2006 for LBNL's Long Range Development Plan (LRDP), with respect to new information regarding operational traffic impacts affecting the program-level analysis of the LRDP as a whole.

C. Areas of Controversy

Oral and written comments on the proposed project were received during the public scoping process and at a scoping meeting held on January 14, 2009 at the North Berkeley Senior Center. Several members of the public objected to the location of the LBNL facility in a zone of high seismic hazard and landslides, especially given that hazardous chemicals are housed there. They also criticized what they described as the LBNL legacy of having contaminated surrounding soil and groundwater during past operations.

Additional concerns focused on the location of the Building 85 complex, which houses the LBNL hazardous waste handling facility, on an area described as an ancient landslide and subject to wildland fires. The building has been the subject of past controversy with an appeal to the Department of Toxic Substances Control (DTSC) against the re-issuing of its hazardous waste facility handling permit. (The appeal was rejected and DTSC reissued the permit.)

Members of the public also commented on the construction of the proposed GPL in Strawberry Canyon, adjacent to the UC Botanical Gardens. Several neighbors expressed concern that the project would be detrimental to the beauty, tranquility, and unspoiled character of that resource. UC Botanical Gardens' staff voiced objections to the potential visual impact of the proposed three-story GPL building and also suggested it might increase noise and lead to parking conflicts. It should be noted that since the NOP scoping process,

the project was revised and the GPL is now proposed at a location that is not near the Botanical Garden or in Strawberry Canyon.

D. Significant Impacts

As part of the analysis in this EIR the impacts of the proposed project were considered with respect to the following 13 issues under CEQA:

1. Aesthetics
2. Air Quality
3. Biological Resources
4. Cultural Resources
5. Geology and Soils
6. Greenhouse Gas Emissions
7. Hazards and Hazardous Materials
8. Hydrology and Water Quality
9. Land Use and Planning
10. Noise
11. Public Services
12. Transportation and Traffic
13. Utilities and Service Systems

Potentially significant impacts under CEQA are included in the following summary table (Table 2-1).

E. Alternatives

Five alternatives to the proposed project were analyzed with respect to their ability to meet project objectives and/or to reduce or avoid identified significant impacts of the proposed project.

1. *Building 74 SE Parking Lot Site Alternative.* Under this on-site alternative, the Buildings 25/25B, 55, and 71 trailers would still be demolished and Building 85/85A seismically strengthened. A new GPL would still be

built, but instead of at the Building 25 demolition site, it would be built at LBNL on a site southeast of Building 74. The site is currently a parking lot with a small shed, Building 74F. Building 74F would be demolished and a two- to three-storey 43,000 gross square-foot (gsf) GPL would be built at this location, terraced into the hillside. The building footprint would be approximately 15,000 sf. Together with the drive aisle, the total footprint would be 29,505 sf. This would represent development of 8,905 sf of an already developed area and 20,600 sf of an adjacent undeveloped hillside. The site is located in close proximity to the UC Botanical Garden and is within the Oakland City limit.

2. *Richmond Field Station Alternative.* Under this alternative, the Buildings 25/25B, 55 and 71 trailers would still be demolished and Building 85/85A seismically strengthened. A new GPL would still be built, but instead of at a location at LBNL, it would be located at the UC Richmond Field Station (RFS). This facility is a 162-acre teaching and research facility with over 500,000 sf of existing research space located approximately 6 miles (by freeway) northwest of the LBNL site. The site was formerly used for industrial purposes and there is remnant contamination that has been the subject of environmental investigation and remediation over a number of years.² If the selected site included contamination, a remediation plan would be required prior to construction of a new building on the site. The identification of any contamination would not necessarily preclude building construction as site remediation would most likely allow for construction of light industrial uses, such as the GPL.

² A description of the Richmond Field Station including past industrial activities and ongoing clean-up can be found online at: <http://rfs.berkeley.edu/about.html#thefacility>.

LAWRENCE BERKELEY NATIONAL LABORATORY
 SEISMIC LIFE SAFETY PHASE 2 PROJECT EIR
 SUMMARY

TABLE 2-1 SUMMARY OF SIGNIFICANT IMPACTS AND PROJECT-SPECIFIC MITIGATION MEASURES

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|---|--------------------------------|---------------------|------------------------------|
| AESTHETICS | | | |
| <i>There are no significant impacts or adverse effects under CEQA to aesthetics.</i> | | | |
| AIR QUALITY | | | |
| <i>There are no significant impacts or adverse effects under CEQA to air quality.</i> | | | |
| BIOLOGICAL RESOURCES | | | |
| <i>There are no significant impacts or adverse effects under CEQA to biological resources.</i> | | | |
| CULTURAL RESOURCES | | | |
| <i>There are no significant impacts or adverse effects under CEQA to cultural resources.</i> | | | |
| GEOLOGY AND SOILS | | | |
| <i>There are no significant impacts or adverse effects under CEQA to geology and soils.</i> | | | |
| GREENHOUSE GAS EMISSIONS | | | |
| <i>There are no significant impacts or adverse effects under CEQA to greenhouse gas emissions.</i> | | | |
| HAZARDS AND HAZARDOUS MATERIALS | | | |
| <i>There are no significant impacts or adverse effects under CEQA to hazards and hazardous materials.</i> | | | |
| HYDROLOGY AND WATER QUALITY | | | |
| <i>There are no significant impacts or adverse effects under CEQA to hydrology and water quality.</i> | | | |

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

**LAWRENCE BERKELEY NATIONAL LABORATORY
SEISMIC PHASE 2 PROJECT EIR
SUMMARY**

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|--|--------------------------------|---|------------------------------|
| LAND USE AND PLANNING | | | |
| <i>There are no significant impacts or adverse effects under CEQA to land use and planning.</i> | | | |
| NOISE | | | |
| <i>There are no significant impacts or adverse effects under CEQA to noise.</i> | | | |
| PUBLIC SERVICES | | | |
| <i>There are no significant impacts or adverse effects under CEQA to public services.</i> | | | |
| TRANSPORTATION AND TRAFFIC | | | |
| SP2 Cumulative Impact TRANS-1: The proposed project, in combination with other foreseeable development at LBNL and in the surrounding community, would generate traffic that would cause the level of service standards to be exceeded at the Durant Avenue/Piedmont Avenue, Hearst Avenue/Gayley Road/La Loma Avenue, Gayley Road/Stadium Rim Way, and Bancroft Way/Piedmont Avenue intersections. | S | TRANS-1e: LBNL will work with the City of Berkeley to design and install a signal at the Bancroft Way/Piedmont Avenue intersection and provide an exclusive left-turn lane and an exclusive through lane on the northbound approach when a signal warrant analysis shows that the signal is needed. LBNL shall contribute funding, on a fair-share basis, to be determined in consultation with UC Berkeley and the City of Berkeley, for a periodic (annual or biennial) signal warrant check to allow the City to determine when a signal is warranted, and for installation of the signal. Should the City determine that alternative mitigation strategies may reduce or avoid the significant impact, the Lab shall work with the City and UC Berkeley to identify and implement such alternative feasible measure(s). See also Mitigation Measure TRANS-1d, development and implementation of a new Transportation Demand Management Program. | SU |
| <p>With the implementation of this mitigation measure, the Bancroft Way/Piedmont Avenue intersection would operate at an acceptable level of service (LOS B) during both the AM and PM peak hours.</p> <p>This mitigation measure is proposed to be adopted as part of the LRDP and will be monitored through the LRDP mitigation monitoring and reporting program. It will thus continue to be a binding mitigation commitment of LBNL.</p> | | | |

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES (CONTINUED)

| Significant Impact | Significance Before Mitigation | Mitigation Measures | Significance With Mitigation |
|--------------------|--------------------------------|--|------------------------------|
| TRANS-1continued | | <p>Under CEQA case law, however, when the lead agency contributes fair-share funding to a mitigation measure that will be carried out by another entity, there must be some evidence of a reasonable plan in place in order for the lead agency to conclude that the adopted mitigation will reduce the impact to a less-than-significant level (City of Marina v. Board of Trustees of the California State University (2006) 39 Cal.4th 341). LBNL has discussed this with the City, and based on that consultation, LBNL understands there have been some discussions of improvements at Gayley Road/Stadium Rim Way. Also, the University has retained a consultant to perform studies related to these improvements, but there is not yet a plan in place for the improvements. As such, it cannot be determined at this time that this impact will be mitigated to a less-than-significant level. Accordingly, this impact would still be considered significant and unavoidable, but LBNL would contribute to fair-share funding which, if a reasonable plan is implemented, would mitigate these impacts to a less-than-significant level.</p> | |

UTILITIES AND SERVICE SYSTEMS

There are no significant impacts or adverse effects under CEQA to utilities and service systems.

LTS = Less Than Significant S = Significant SU = Significant Unavoidable Impact

3. *Leased Space Off-Site Alternative.* Under this alternative, Buildings 25/25B, 55 and 71 trailers would still be demolished and Building 85/85A seismically strengthened. However, the functions and programs that would otherwise be provided in the GPL would be relocated to the Berkeley West Biocenter (LBNL Building 977) at 717 Potter Street in Berkeley, situated approximately 5 miles from the LBNL site. LBNL currently leases 60,000 gsf at this site.³ Additional space would be leased in order to accommodate relocated personnel and operations. Overall there would be an increase in the population of around 30 people at the Potter Street site.
4. *Reduced Project Alternative.* Under the Reduced Project Alternative, the demolition and construction components of the Seismic Phase 2 Project would not occur. However seismic strengthening of Building 85/85A would still take place. LBNL employees and guests would remain in Buildings 55 and 71 trailers that have been designated as seismically “poor” or described as “failing.” As per UC policies on seismic safety, personnel have already been moved from Building 25/25B that was designated as “very poor” and the building would remain vacant. Under this alternative, limited capital investment would be needed to continue activities at LBNL. UC LBNL would continue to pay energy and maintenance costs for the older facilities, including costs for necessary upgrades. Overall, there would still be around 100 LBNL personnel in the off-site Potter Street facility.
5. *No Project Alternative.* Under the No Project Alternative, the demolition, construction components and the seismic strengthening of the Seismic Phase 2 Project would not occur. UC LBNL employees and guests would remain in Buildings 55 and 71 trailers that have been designated as seismically “poor” or “failing.” Personnel have already moved from Building 25/25B that was designated as “very poor” and the building would remain vacant. Building 85/85A would remain in its current

³ Stanton, Richard. Project Manager, Facilities Division, LBNL. Personal communication with DC&E. December 21, 2009.

condition under this alternative, limited capital investment would be needed to continue activities at LBNL. UC LBNL would continue to pay energy and maintenance costs for the older facilities, including costs for necessary upgrades. UC LBNL personnel would also remain in the off-site Potter Street facility.

As described in Chapter 5, Alternatives to the Proposed Project, the alternatives analysis finds the Reduced Project Alternative to be the environmentally superior alternative. However, the Reduced Project Alternative does not meet many of the project objectives.

F. Cumulative Impacts

The following ongoing and reasonably foreseeable planned projects on the LBNL site, UC Berkeley campus, and in the surrounding Berkeley/Oakland area were considered and analyzed for their near-term cumulative impacts in conjunction with the proposed project.

Projects on the LBNL site

1. Seismic Phase 1
2. Building 74 Modernization
3. The User Support Building (USB)
4. Building 51 and the Bevatron Demolition
5. Berkeley Lab Laser Accelerator (BELLA) Laser Acquisition, Installation and Use for Research and Development
6. Old Town Demolition
7. Solar Energy Research Center (SERC)
8. The Computational Research and Theory Building (CRT)
9. Net-Zero Energy Buildings Project (N-ZEB)

Projects on University of California Campus

10. South Campus Integrated Projects (SCIP)
11. Northeast Quadrant Science and Safety Projects (NEQSSP)
12. Helios

13. UC Berkeley Law School Infill
14. UC Berkeley Naval Architecture Restoration and Blum Center
15. Warren Hall Replacement

One significant and unavoidable cumulative impact was found to result from the proposed project in combination with these projects and other foreseeable growth at LBNL, UC Berkeley and the Cities of Oakland and Berkeley through 2025.

SP2 Cumulative Impact TRANS-1: The proposed project, in combination with other foreseeable development at LBNL and in the surrounding community, would generate traffic that would cause the level of service standards to be exceeded at the Durant Avenue/Piedmont Avenue, Hearst Avenue/Gayley Road/La Loma Avenue, Gayley Road/Stadium Rim Way, and Bancroft Way/Piedmont Avenue intersections. *(Significant and Unavoidable)*

3 PROJECT DESCRIPTION

The Seismic Phase 2 Project (proposed project) at Lawrence Berkeley National Laboratory (LBNL) is proposed by the University of California at its LBNL campus. The LBNL main hill campus is an approximately 200-acre University-owned site in Berkeley and Oakland, California. It is located adjacent to the University of California, Berkeley (UC Berkeley) campus. The LBNL site includes research and support buildings and structures that are primarily part of a multi-program National Laboratory called the Lawrence Berkeley National Laboratory, a federally funded research and development center operated and managed by the University of California under contract with the U.S. Department of Energy.

The University of California Policy on Seismic Safety was issued in 1995 and revised in 2000.¹ This policy established a rating system of “good,” “fair,” “poor,” and “very poor” for University structures to describe anticipated seismic performance. UC LBNL has performed seismic evaluations of LBNL buildings and established a rating for all permanent occupied structures. Buildings 25/25B and 55, were rated “poor” and “very poor” and the trailers were regarded as “failing” and “at the end of their useful life,” in the *Statement of Mission Need* in September 2007.² The cost-effectiveness of seismic strengthening versus building replacement was assessed in a Life Cycle Cost Analysis in July 2008.³

The proposed project would demolish some seismically “poor,” “very poor,” and “failing” structures and house the displaced occupants and functions elsewhere on the LBNL campus. The project would also allow for the consolidation of life science personnel from various locations on and off the LBNL

¹ University Policy on Seismic Safety, <http://www.ucop.edu/ucophome/coordrev/policy/1-17-95att.html>, accessed on December 3, 2009.

² LBNL, September 2007, *Statement of Mission Need for the Lawrence Berkeley National Laboratory Seismic Life-Safety, Modernization and Replacement of Buildings, Phase 2*.

³ LBNL, July 2008, *Life Cycle Cost Analysis, Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2*.

main hill site in a new facility to be constructed on the current Building 25/25B location, in the central portion of the LBNL site.

Building 85/85A, constructed in 1996, was discovered to have been built on two historic landslides. The landslides could become unstable in an earthquake. In addition, requirements for building performance in the event of an earthquake have been increased since that time. As part of the proposed project, Building 85/85A would be seismically strengthened.

A. Regional and Local Setting

The proposed project would take place on the main LBNL hill site in Berkeley and Oakland, California. Project location and its regional setting are illustrated in Figure 3-1. Locations of the various project components on the LBNL site are illustrated in Figure 3-2. This figure also shows the border of the cities of Oakland and Berkeley in relation to the LBNL site. Building 55 and the Building 71 trailers that would be demolished (71C, 71D, 71F, 71J, 71K, and 71P) are located in the northeastern section of the LBNL site. Building 25/25B and the site of the proposed General Purpose Laboratory (GPL) is in the central portion of the LBNL site. All of these buildings are located within the City of Berkeley. Building 85/85A, which would be seismically strengthened, is located in the eastern portion of the site and within the City of Oakland.

B. Project Components

Table 3-1 shows the proposed project demolition and construction area in gross square feet (gsf), footprints in square feet (sf), current number of building occupants, and construction timing for each of the project components. Construction of the GPL would involve an addition of approximately 43,000 gsf. Demolition of Buildings 25/25B, 55, and the Building 71 trailers would remove approximately 43,000 gsf of building space. The proposed project

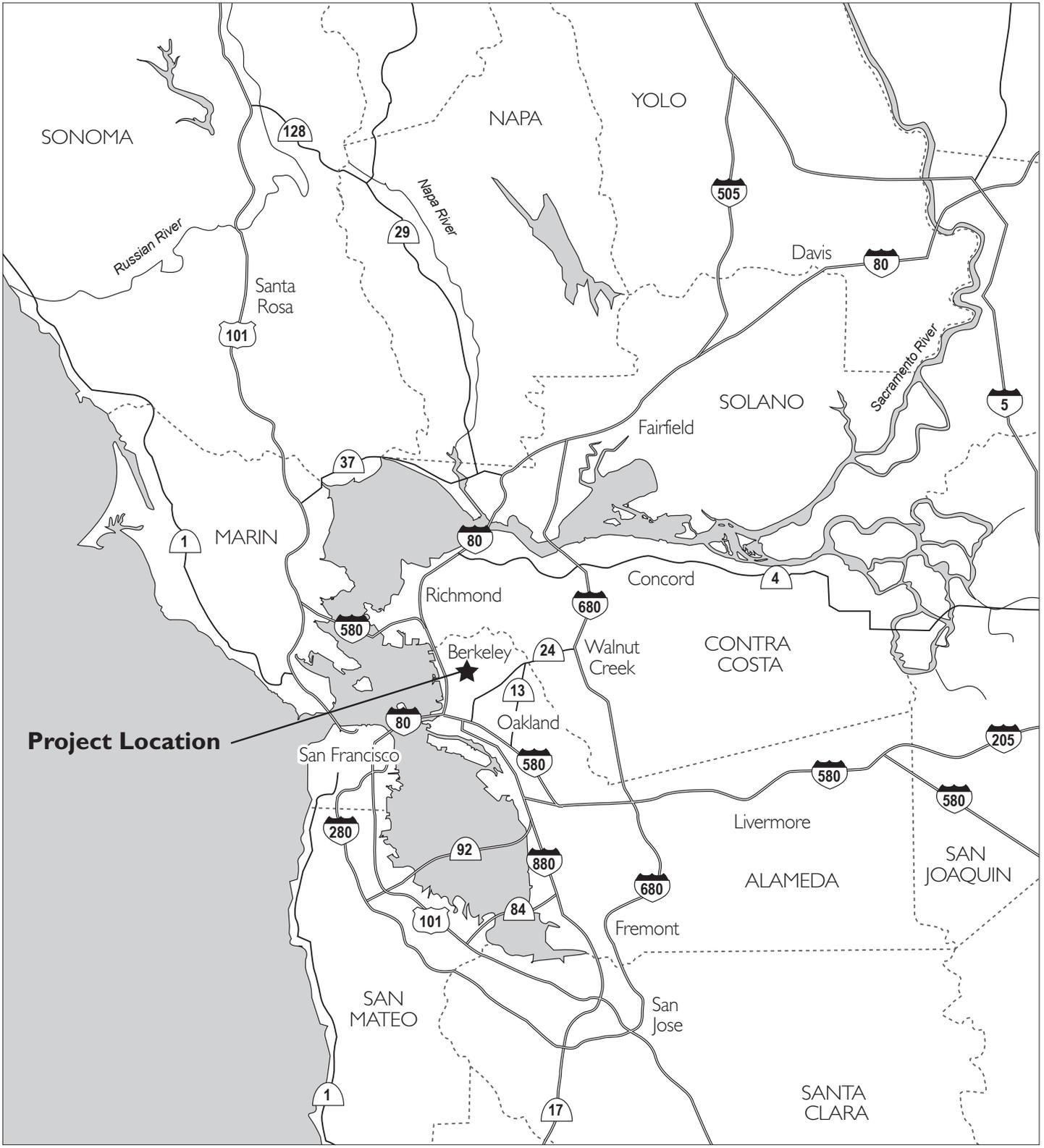
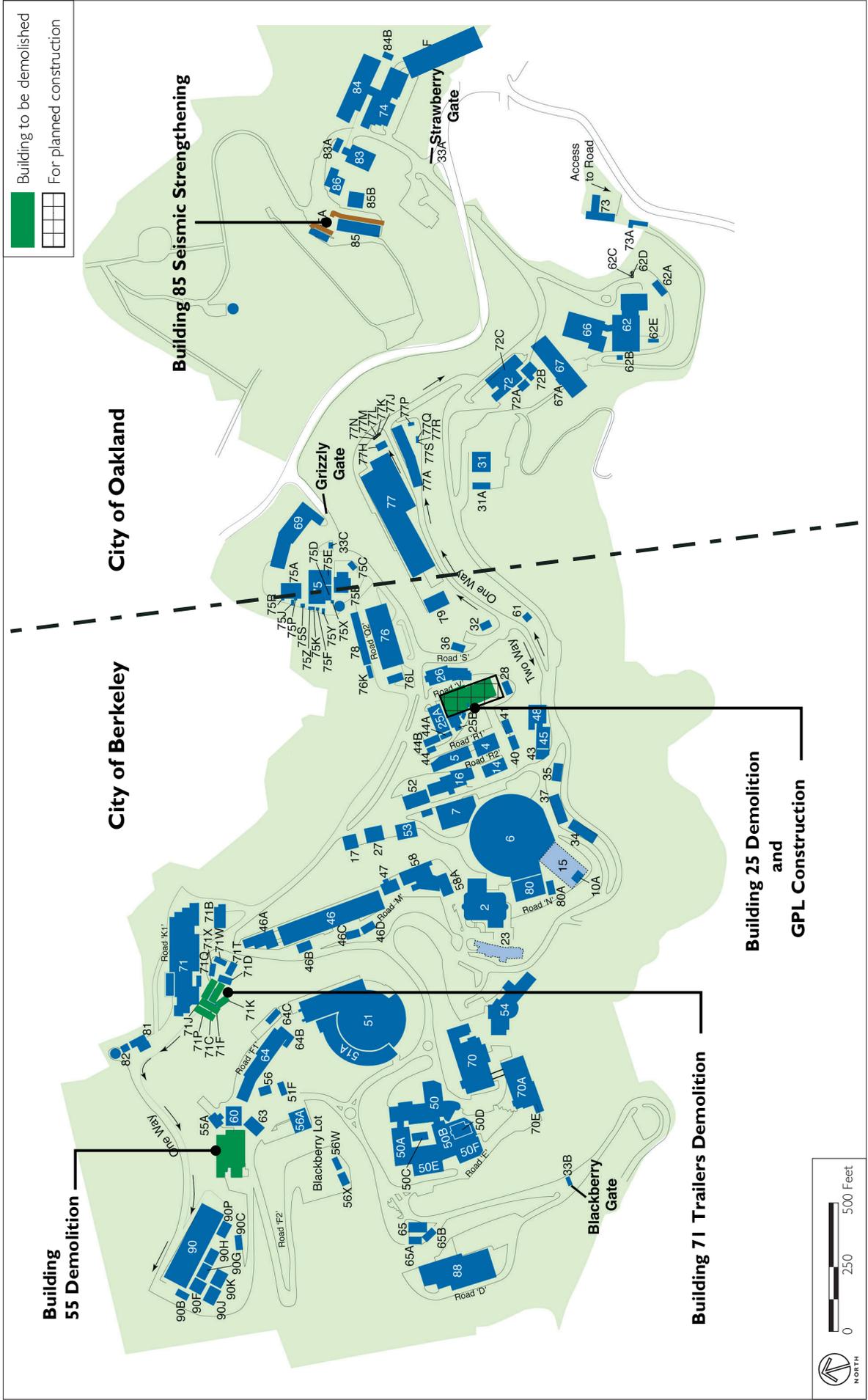


FIGURE 3-1

REGIONAL LOCATION



Source: Lawrence Berkeley National Laboratory

FIGURE 3-2
PROJECT COMPONENTS

TABLE 3-1 **PROJECT CHARACTERISTICS SUMMARY**

| Activity | Gross Square Footage (gsf) | Footprint Square Footage (sf) | Number of Building Occupants | Proposed Timing of Work |
|---|-------------------------------------|--|---------------------------------------|-------------------------------|
| Building 25/25B Demolition | 20,663 | 17,100 | 0 | Mid 2010- Early 2011 |
| Building 55 Demolition | 19,048 | 14,327 | 75 | Mid 2013- Early 2014 |
| Building 71 Trailers (71C, D F, J, K, and P) Demolition | 3,822 | 3,822 | 34 | Late 2012- Early 2013 |
| Building 85/85A Seismic Strengthening | NR ^a | NR | NR | Mid 2011- Mid 2012 |
| GPL Construction at Building 25/25B Site | 43,000 | 13,600 | 130 | Mid 2011- Late 2013 |

^a NR = Not Relevant

Source: LBNL facilities division, 2009.

would therefore not result in a significant change in gsf on the main LBNL site, although it would reduce the total building footprint there. Each project component is described in more detail below.

1. LRDP Mitigation Measures

Because the proposed project is an element of the growth projected under the LBNL 2006 Long Range Development Plan (LRDP), mitigation measures in the 2006 LRDP EIR adopted by The Regents in conjunction with the approval of the 2006 LBNL LRDP have been incorporated into and made a part of the proposed project. The full text of these mitigation measures is provided in each resource section in Chapter 4.⁴ The analysis presented in Chap-

⁴ All adopted 2006 LRDP mitigation measures remain in effect. A number of those mitigation measures are identified in this EIR as measures that apply to and are a part of the proposed project. The fact that a mitigation measure is not specifically set forth in this EIR, however, does not mean that that measure may not apply in some way.

ter 4 evaluates environmental impacts that would result from project implementation following the application of the LBNL 2006 LRDP mitigation measures. The LBNL 2006 LRDP mitigation measures incorporated into the project would be monitored as specified in the Mitigation Monitoring and Reporting Plan adopted as part of the LBNL 2006 LRDP Final EIR.

2. Demolition of Building 25/25B

The proposed project would involve the demolition of Building 25 as well as the decommissioning and demolition of the smaller separate wooden building to the west that houses a Fixed Treatment Unit (FTU), known as Building 25B. The FTU has treated aqueous and metal-containing waste generated from operations at Building 25 since 1986. Operations formerly located in Building 25 have been relocated to another building on site which has its own treatment facilities. A small metal chemical storage shed on the west side of Building 25, which is labeled 25C on the outside, would also be removed. These buildings to be demolished are referred to in this report as Building 25/25B. Together they comprise 20,663 gsf with a footprint of 17,100 sf. Recent photographs of Building 25/25B are shown in Figure 3-3. The proposed project does not include demolition of Building 25A, the larger separate building on the northern side of Building 25B. In the current configuration, Building 25 and 25A are connected. Building 25A is slated for demolition as part of a separate project.

Located in the Old Town area in the center of the LBNL site, Building 25 formerly housed shop, lab, engineering, and other multi-program equipment and instruments. Prior to the start of the project, occupants were moved from Building 25/25B to other locations (in line with LBNL policy) due to high risk of seismically-induced failure, and the building is now used for storage. Building 25 is a 20,303 gsf one-story structure with partial mezzanine built in five increments starting in 1946. The oldest section is 60 years old, and the newest section is 20 years old. Building 25B, a 360 gsf wooden structure attached to Building 25, is a small waste treatment facility and has no full-time occupants.



FIGURE 3-3
BUILDING 25/25B

Building 25 has been rated as “very poor” according to the University of California Seismic Rating System. Preliminary evaluation of a seismic upgrade and modernization of Building 25/25B determined that an upgrade is not the most cost-effective solution; replacement would be cost-effective and would also reduce both high-cost maintenance, rehabilitation, and improvement cost factors for the site.⁵

Building 25/25B demolition would be the first part of the proposed project and would take place from mid 2010 to early 2011.

3. Demolition of Building 55

Building 55 is shown in Figure 3-4. Building 55 is a 19,048 gsf wet chemistry laboratory and office building with a footprint of 14,327 sf. It is a one-story building with a two-story addition and is composed of several different building construction types. Preliminary evaluation of a seismic upgrade and modernization of this building determined that an upgrade was not the most cost-effective solution.

Building 55, which was built in seven phases beginning from 1950 to the late 1980s, is rated as “poor.” The proposed replacement of this building is the most practical solution and would also reduce both high-cost maintenance and rehabilitation and improvement cost factors for the site.⁶ The 75 occupants of Building 55 would be relocated to other buildings on site, when the building is demolished.

4. Demolition of Building 71 Trailers (71C, D, F, J, K, and P)

Also proposed for demolition are six of the nine modular trailers associated with Building 71 (71C, 71D, 71F, 71J, 71K, and 71P). They currently house 34 occupants that would be relocated to other LBNL buildings. These trailers cannot be cost effectively upgraded and replacement space is required. The

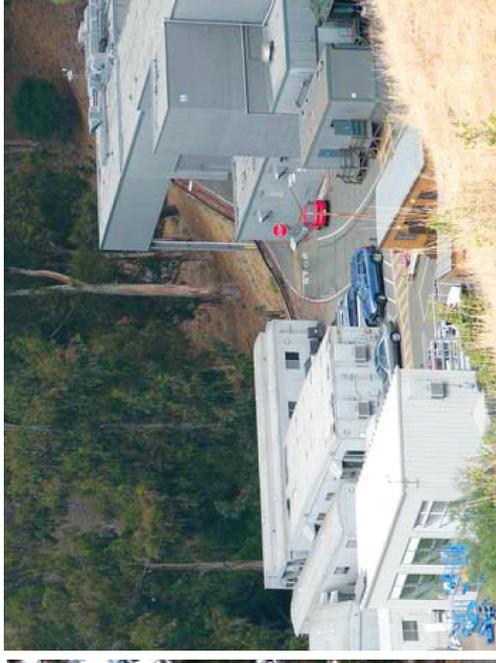
⁵ LBNL, July 2008, *Life Cycle Cost Analysis, Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2.*

⁶ LBNL, July 2008, *Life Cycle Cost Analysis, Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2.*

Building 55



Building 71 Trailers



six Building 71 trailers that would be demolished are over 30 years old, are past their useful life, and pose a seismic hazard.⁷ Trailers 71T, 71W, and 71X would remain occupied and in use.

5. Construction of General Purpose Laboratory

The proposed project would include construction of a new General Purpose Laboratory (GPL) that would be approximately 43,000 gsf with a footprint of approximately 13,600 sf. The GPL would be constructed on the Building 25/25B demolition site. Figure 3-5 shows an aerial view of the Building 25 complex, Figure 3-6 shows the site plan for the GPL Building, and Figures 3-7 and 3-8 are conceptual elevations of the proposed building. The proposed GPL would be three stories and 50 to 55 feet tall (as measured to the top of the parapet). Exhaust stacks projecting 30 feet above the roof would bring the tallest point of the building to 75 to 80 feet above ground surface. It is expected that construction would take place from approximately mid 2011 to late 2013.

The primary purpose of the GPL would be to replace the gross square footage of the seismically unsafe buildings identified for demolition (Buildings 25/25B, 55, and 71 trailers), with a modern, safe, energy efficient laboratory/office facility designed for multi-program use. The project scope includes the new facility's achieving Leadership in Energy and Environmental Design (LEED) Gold certification in accordance with UC Policy on Sustainable Practices which requires that all new laboratory buildings strive to achieve a minimum rating of LEED Silver or better.⁸ The GPL would consist of approximately 60 percent office space and 40 percent wet chemistry lab facilities. All activities conducted in the GPL would be relocated from other existing facilities.

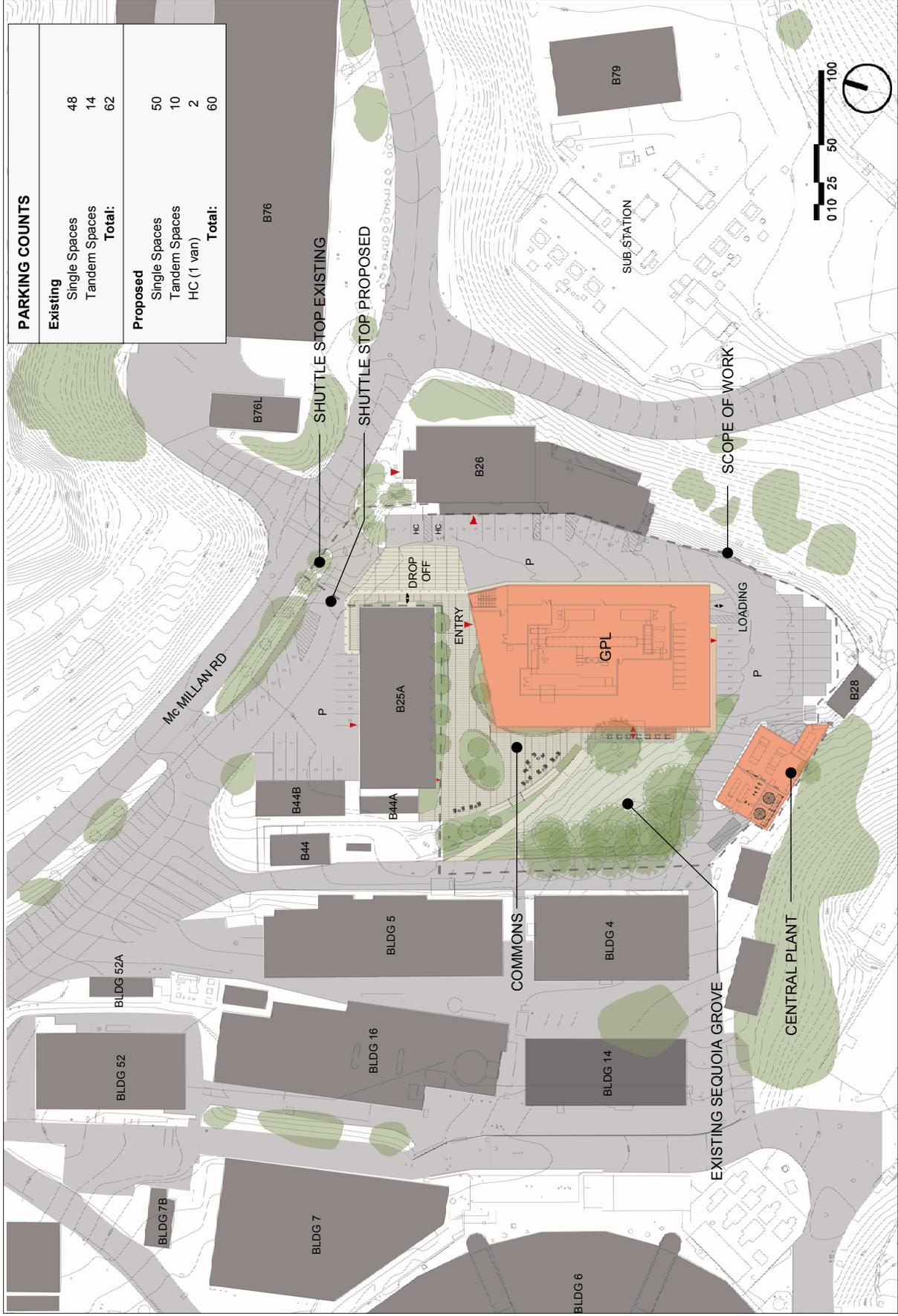
⁷ LBNL, July 2008, *Life Cycle Cost Analysis, Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2*.

⁸ University of California Policy on Sustainable Practices, http://www.universityofcalifornia.edu/sustainability/documents/policy_sustain_prac.pdf, accessed on November 19, 2009.



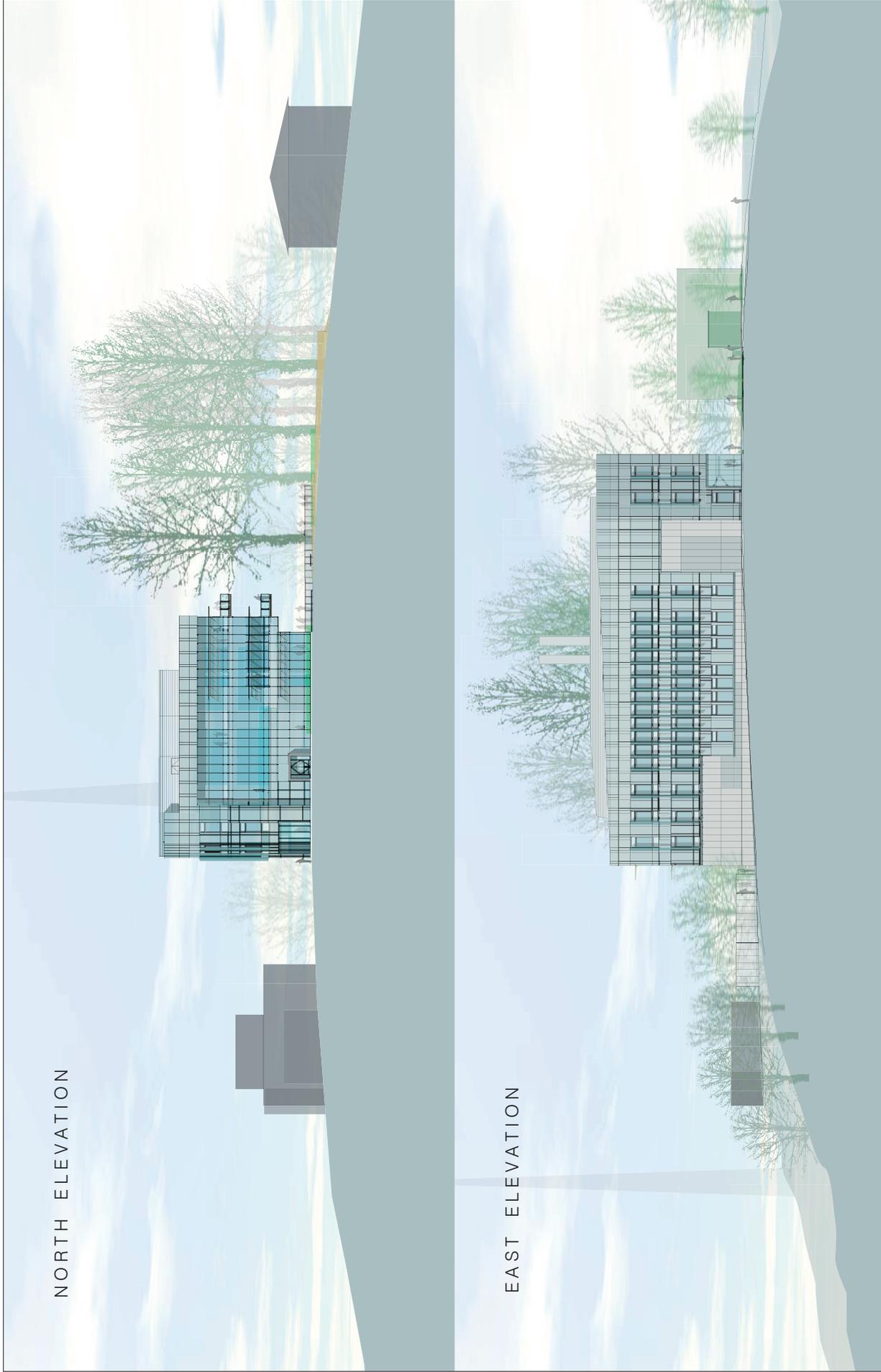
Source: RMW architecture & interiors

FIGURE 3-5
AERIAL VIEW OF BUILDING 25 COMPLEX



Source: RMW architecture & interiors

FIGURE 3-6
GPL AT BUILDING 25 SITE



Source: RMW architecture & interiors

FIGURE 3-7

NORTH AND EAST ELEVATIONS OF PROPOSED GPL



Source: RMW architecture & interiors

FIGURE 3-8

WEST AND SOUTH ELEVATIONS OF PROPOSED GPL

The GPL would house normal life science laboratory equipment, typical of current laboratories located on site. There would be up to 6 lasers embedded in instruments such as microscopes, mass spectrometers or flow cytometry analyzers/sorters, and probably an x-ray machine. The first floor labs would house several large electron microscopes. Standard laboratory chemicals including organic solvents would be used and stored in the labs. Compressed gases would also be used.

The GPL would be constructed on the Building 25/25B demolition site near the center of the LBNL hill campus so as to ensure easy connections to other facilities. No undeveloped land would be used in this construction project.

The GPL would accommodate approximately 130 occupants who would relocate from existing LBNL space both on and off the main hill campus. Some employees could be relocated from off-site leased space at Potter Street, resulting in a net increase of approximately 100 personnel (part-time and full-time) to the LBNL main hill campus. The existing lease at the Potter Street facility is planned to be terminated after the relocation of personnel to the GPL.⁹

a. Utilities

The GPL would use the existing electrical, water, and sewer utility systems that currently serve the Building 25 complex, with some minor additions. A new fire hydrant would be added to the southeastern side of the proposed building, where there is an existing 12-inch main. A new storm drain line 125 feet in length would be installed to replace the existing line, which is partially blocked and undersized for the current drainage area around Building 25. The drain would run from the southeastern corner of the new building east

⁹ The staff at the Potter Street facility are life science researchers, most of whom were previously located on-site in Building 74, and were moved to the Potter Street facility when Building 74 was vacated in preparation for the Seismic Phase 1 project. LBNL has considered a possible move scenario that would result in movement of two research groups from Potter Street into the GPL building, however the decision on who will occupy the building is subject to change.

through the neighboring hillside to a connection point on Segre Road. The exact points of utility connections and drain locations would be determined based on the development of the design. There would be some re-routing of utilities for building access. Additionally, a building utility plant would be located adjacent to the GPL to house chillers, a cooling tower, electrical transformer, and an emergency generator.

b. HVAC and other Exhaust Systems

The GPL's interior building systems that would require exterior ventilation include heating and air conditioning units and bathroom exhaust fans. Disposition of condensate drainage from heat pumps and air conditioners would probably be drained directly to the sanitary sewer system.

Combustion air and flue exhaust vents for heating and air conditioning units would be included on the exterior of the building roof as would two laboratory exhaust air stacks. A mechanical equipment roof screen would be located on the roof of the GPL.

c. Emergency (Fire) Access

Road access for emergency fire apparatus is required by the 2007 California Fire Code (California Code of Regulations, Title 24, Part 9). Emergency vehicles would access the GPL via a paved roadway on the east and south sides of the building, as shown in Figure 3-6. The roadway would be redesigned from the current configuration to eliminate its sharp curve.

d. Access, Circulation, and Parking

The GPL site plan would meet American with Disabilities Act (ADA) requirements including the provision of two disabled parking stalls. A shuttle bus stop is currently located along McMillan Road to the north of the GPL site.

Employees, guests, and vendors at LBNL would be provided access to the new facility under the existing LBNL entrance policies and procedures. No changes to existing LBNL security and safeguards are anticipated. The three

LBNL entrances are monitored by security 24 hours a day, seven days a week, and a security pass is required for site access.

6. Building 85/85A Seismic Strengthening

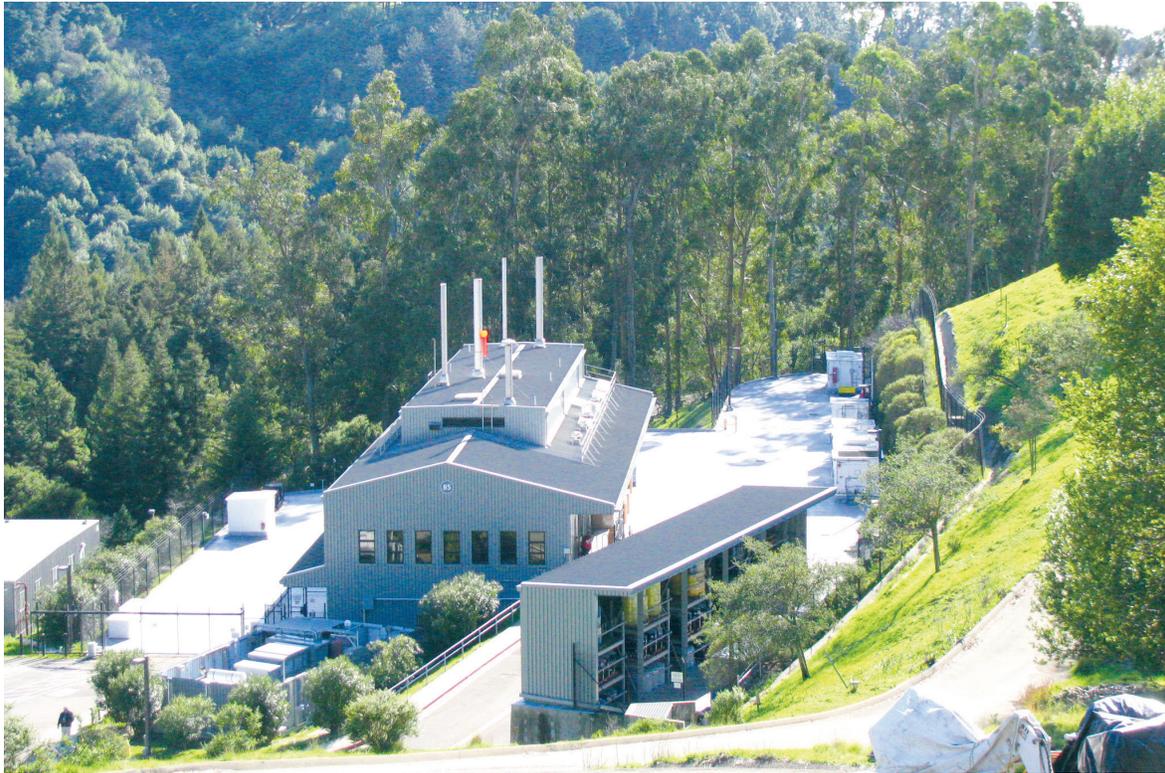
The proposed project includes a seismic upgrade to the Hazardous Waste Handling Facility (HWHF), consisting of Buildings 85, 85A, 85B, a yard, and prefabricated units, as shown in Figure 3-9. The facility handles hazardous, radioactive, and mixed waste from the LBNL site, providing treatment and storage. The Building 85 complex, was built to handle and store both radioactive and non-radioactive wastes, functions that had previously taken place in Building 75. Constructed in 1996, the Building 85 complex became operational in April 1997. The proposed upgrade does not change the operation of the building or extend its intended life.

A geotechnical study prepared in 2004, and updated in 2006, carried out a geotechnical investigation of the proposed construction site of Building 86, which is the adjacent building to the southeast of Building 85. The study was prepared partly because the Building 86 site is located within an official State of California Earthquake-Induced Landslide Hazard zone. The study raised concerns that the ancient landslide deposits could present a hazard not only to the proposed Building 86, but also to existing Buildings 85 and 83.¹⁰ The extent of the landslides was confirmed by additional work in 2006.¹¹ Additional review in 2007 indicated that, although the landslides are stable under normal conditions, they could be mobilized in the event of a major earthquake, posing a potential hazard to the Buildings 85/85A structures.

The proposed project would install a below-grade system of pier foundations and tiebacks to stabilize the Building 85/85A structures during a major earthquake. This is shown on Figure 3-10. Additional work inside Building 85/85A, consisting of out-of-plane bracing for third floor girders supporting

¹⁰ Alan Kropp Associates, January 4, 2006, *Final Geotechnical Report for Building 86*.

¹¹ Alan Kropp and Associates, Inc., July 31, 2006, *Initial Landslide Study, Building 85, Lawrence Berkeley National Laboratory, Berkeley California*.



Proposed locations for underground retaining structures, such as pier foundations and tie backs

Source: Lawrence Berkeley National Laboratory

FIGURE 3-9

BUILDING 85 PHOTOS SHOWING LOCATION OF SEISMIC STRENGTHENING

the discontinuous penthouse columns, would strengthen the building's first story shear walls and other lateral force systems. The piers would be drilled in the lower yard of the facility.

To install the piers, a 4- to 5-foot-wide, 35- to 50-foot-deep hole would be drilled with an auger, and metal cage, or caisson, would be inserted to support the hole. The hole would then be gradually filled with concrete. The concrete would bind to the metal casing and penetrate some of the surrounding sediment or rock pores, creating a strongly bound "plug." In general with this kind of work, the hole is bored and filled within a day to prevent the hole from caving. The work would not take place during rainy weather.

The LBNL 2006 LRDP EIR states that construction activities at LBNL would comply with applicable laws and regulations that govern the exposure of workers, the public, and the environment to hazardous materials, and also comply with LBNL-specific policies. Potential exposure of workers, the public, and the environment to hazardous materials would be minimized through development of Construction Site Health and Safety Plans and proper handling, storage, and disposal of contaminated soil and groundwater. This would reduce impacts to a less-than-significant level.

Before an LBNL construction or demolition project begins, existing procedures require determining whether or not contamination might be encountered, or potentially caused to migrate, and addressing what to do to prevent worker exposure or migration of contamination if it is determined that contamination might be encountered. UC LBNL Environmental Health and Safety personnel have reviewed the project and concluded it is not likely that contamination would be encountered and, if it were, implementation of existing procedures would prevent worker exposure or migration of that contamination.

The proposed seismic strengthening system is designed to ensure that the facility meets the following performance standard during a seismic event:

- ◆ That there be no release to the environment of the contents of Buildings 85/85A.
- ◆ A safe shutdown of the facility.
- ◆ Basic Life Safety.¹²

The seismic strengthening system would be designed to resist the maximum ground motion from earthquakes that would be expected to occur, on average, once every 475 years. The seismic safety rating of Building 85/85A would be “good” after completion of the improvements.

The Building 85/85A seismic strengthening is scheduled to take place from mid 2011 to mid 2012.

7. Site Preparation

The demolition of buildings specified would require minor site preparation activities that would take place within areas that have already been disturbed or developed. The buildings for demolition were surveyed for hazards and hazardous materials.¹³ Additional samples will be taken and tested for remnant radiation as the demolition sequence proceeds.¹⁴

Excavated soil would be disposed of off-site in a Class III, or other acceptable landfill.¹⁵ The soil would be tested prior to removal to satisfy landfill accep-

¹² RMW Architecture and Interiors, July 15, 2008, *100% Conceptual Design Report, Seismic Life-Safety, Modernization, +Replacement of General Purpose Buildings, Phase II*.

¹³ Winzler & Kelly, October 2008, *Hazardous Materials Survey Seismic Upgrade Phase II, Buildings 25, 55, 71 Trailers (C, D, F, J, K, P), 85 Penthouse, & Dog Kennels, Lawrence Berkeley National Laboratory*.

¹⁴ Office of Safety, Security, and Infrastructure Office of Science, DOE, July 2008, *Radiation Evaluation Report for Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase 2*.

¹⁵ RMW Architecture and Interiors, July 15, 2008, *100% Conceptual Design Report, Seismic Life-Safety, Modernization, +Replacement of General Purpose Buildings, Phase II*.

tance criteria. UC LBNL has additional requirements for soil testing that would be contained in a Soil Management Plan (SMP) that would be completed before soil is excavated.

a. Building 25 Demolition and GPL Construction

Building 25/25B would be entirely removed and the area excavated to accommodate the new foundations for the GPL. It is expected that approximately 1,400 tons of excavated materials would be removed from the site and an additional 700 tons would be imported. No material would be stockpiled for an extended period.

The proposed project would involve possible removal of a total of three trees. Two trees to the southwest of Building 25 would likely be removed as part of the proposed project in order to realign the driveway. One is a 25-foot tall Coast live oak and the other is a 30-foot Dawn redwood. A second Coast live oak on the east side of Building 25 might have to be removed to allow for construction of the new storm drain associated with the GPL. The two Coast live oak trees have circumferences of 26 inches (tree southeast of Building 25) and 33 inches (tree southwest of Building 25); the diameter of the Dawn redwood is 42 inches. If the trees were removed, they would be replaced in keeping with LBNL policies.

b. Building 55 and Building 71 Trailer Demolition

Building 55 would be removed in its entirety and the site excavated to 3 feet below grade. If no contamination is found under the building, the space would be back-filled with rock and paved with asphalt. If contamination is found, the area would be covered to prevent rainwater intrusion, then remediated. Some ornamental shrubs and trees near Building 55 would be removed.

The Building 71 trailers would be demolished and removed, including foundations, down to the existing asphalt.¹⁶

c. Building 85/85A Seismic Strengthening

Site preparation for Building 85/85A improvements would include the removal of a portion of the building's at-grade concrete operations area, asphalt driveways and minor vegetation. Excavation is expected to generate approximately 1,800 cubic yards of soil to be disposed of off-site in a landfill. All landfills have requirements that the soil be tested to show which contaminants, if any, are present. UC LBNL has additional requirements for soil testing that would be contained in a Soil Management Plan (SMP) that would be completed before soil is excavated.

8. Staging and Laydown Areas

Staging and laydown areas are shown in Figure 3-11 and are described below. They would be located in paved or developed areas except where otherwise noted.

a. Building 25/25B Demolition and GPL Construction

The staging and laydown area for Building 25/25B demolition and for the GPL construction would be located between Buildings 25 and 26 and on the south and west sides of Building 25.

b. Building 55 and Building 71 Trailers Demolition

The staging and laydown area for Building 55 demolition would be in the parking lots on the west and south sides of Building 55 and southeast side of Building 63.

The staging and laydown area for Building 71 trailers would be in parking lot around the trailers and the parking lot northwest of Building 71.

¹⁶ RMW Architecture and Interiors, July 15 2008, *100% Conceptual Design Report, Seismic Life-Safety, Modernization, +Replacement of General Purpose Buildings, Phase II.*

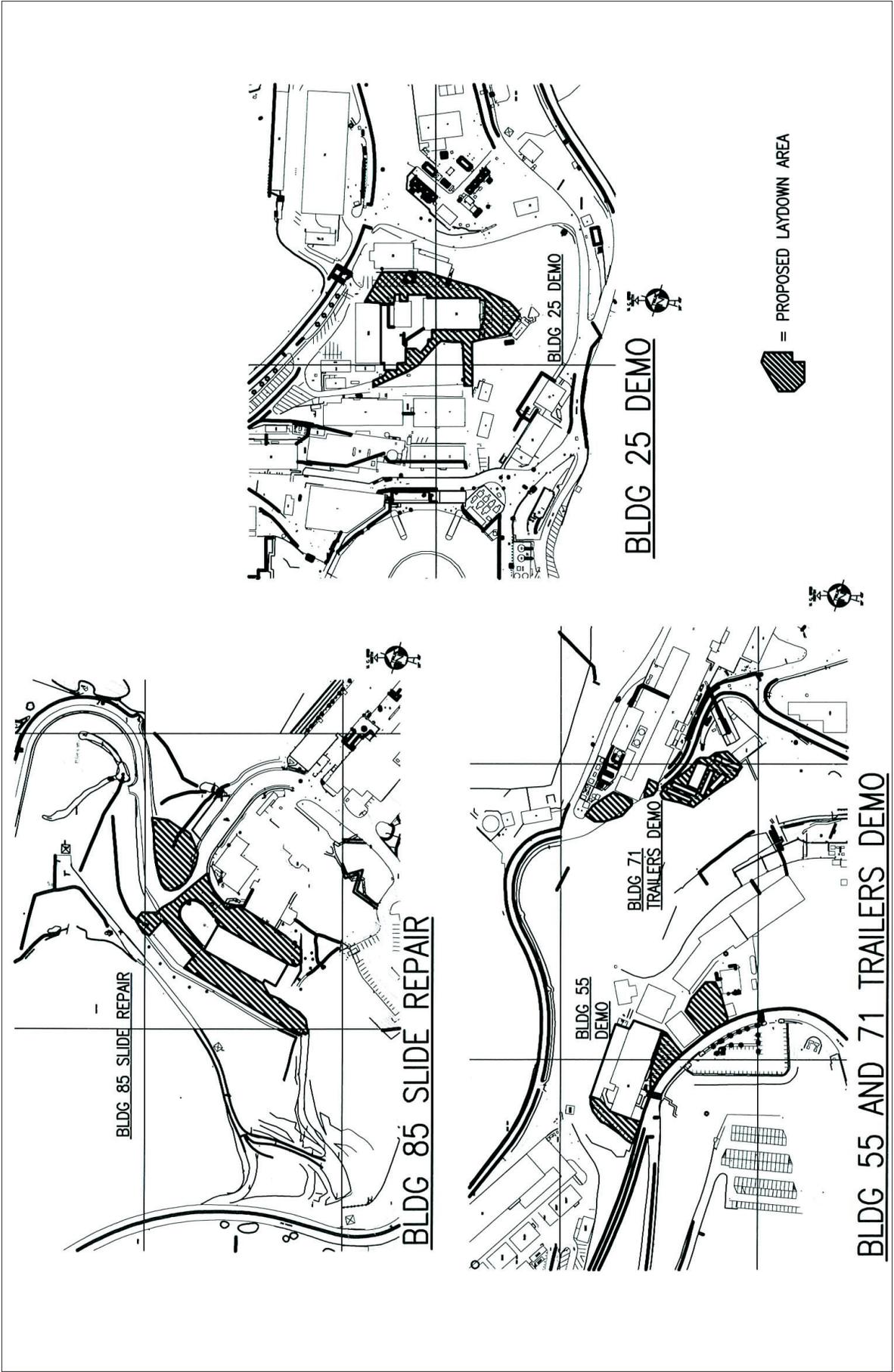


FIGURE 3-11

c. Building 85/85A Seismic Strengthening

Four areas have been identified for staging.

- ◆ Gravel turnaround area close to Centennial Drive, west of Building 85.
- ◆ Paved yard between Buildings 85 and the modular office structure, 85B.
- ◆ Paved yard to southeast of Building 85A.
- ◆ Unpaved but disturbed area east of Building 85A.

9. Tree Protection

A standard LBNL procedure is to hire an arborist during the planning stage for any project with the potential to disturb a tree at the Lab and to consider the arborist's recommendations for protection, pruning, or removal. Measures for protection of the redwood and sequoia trees in the grove to the west of the proposed GPL site during construction work are listed in the draft Arborist report and would be followed as part of the proposed project.¹⁷

10. Landscaping

The GPL would be landscaped in accordance with the following two design requirements from the LBNL 2006 LRDP. These are:

- ◆ Continue to use sustainable practices in the selection of plant materials and maintenance procedures.
- ◆ Utilize native, drought-tolerant plant materials to reduce water consumption; focus shade trees and ornamental plantings at special outdoor use areas.

C. Project Schedule

Demolition of Building 25/25B and the construction of the GPL is expected to begin in mid 2010 and be completed by late 2013. This would include approximately one month of site preparation, including excavation, foundation work, grading, and compaction. Demolition of Building 55 would take place

¹⁷ Brian W. Fenske, March 25, 2009, *Arborist Report, Site: LBNL "Old Town" Demo Site*.

from mid 2013 to early 2014. Demolition of the six Building 71 trailers would take place from late 2012 to early 2013. Building 85/85A seismic strengthening is expected to take place from mid 2011 to mid 2012. All proposed project components are expected to be complete by March 2014. Overall, the entire project would occur between 2010 and early 2014.

D. LBNL Standard Operating Procedures

There are set standard operating procedures to which the proposed project would be subject. Specific reference to these procedures is made in Sections 4.1-4.13 of this EIR and they are quoted where applicable. The procedures are generally intended to ensure the safety of contractors, visitors, and staff at LBNL during construction projects, and to reduce the overall impact that construction/demolition actions have on the LBNL main hill site and the surrounding community.

E. Mitigation Measures from the LBNL 2006 LRDP EIR

Although this proposed project is not tiered from the LBNL 2006 LRDP EIR, relevant mitigation measures are a part of the proposed project and included in the proposed project description and are reported in the regulatory setting section of Sections 4.1 to 4.13.

F. Required Permits and Approvals

The following is a list of the agencies that are expected to use the EIR in their decision making, and the required permits and approvals to which the proposed project is subject.

- ◆ LBNL is located on land owned by the University of California and the Board of Regents of the University of California (The Regents). The Regents, as lead agency, is responsible for making findings, approving mitigation measures, issuing any statements of overriding considerations, cer-

tifying the EIR, and approving the project. It is currently anticipated that the *Seismic Life-Safety Phase 2 Project EIR* and Project will be presented to The Regents for review and consideration of certification and approval in May 2010. The Regents certification of the EIR would include certification of the supplement to the 2006 LRDP EIR (as to one traffic impact), which supplement is included within this EIR.

- ◆ Notification of demolition of asbestos-containing structure would need to be made to the Bay Area Air Quality Management District (BAAQMD).
- ◆ Stormwater discharges from construction sites that are one acre or larger are subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for construction activities, issued and overseen by the San Francisco Regional Water Quality Control Board (RWQCB). The project will be required to file of a Notice of Intent and prepare and implement a Storm Water Pollution Prevention Plan.
- ◆ U.S. DOE approval following a review of potential environmental impacts under the National Environmental Policy Act.

4 ENVIRONMENTAL EVALUATION

A. Environmental Issues Evaluated in EIR

Environmental issues are discussed in the following set of sections to comply with provisions of CEQA.

1. Aesthetics
2. Air Quality
3. Biological Resources
4. Cultural Resources
5. Geology and Soils
6. Greenhouse Gas Emissions
7. Hazards and Hazardous Materials
8. Hydrology and Water Quality
9. Land Use and Planning
10. Noise
11. Public Services
12. Transportation and Traffic
13. Utilities and Service Systems

B. CEQA Issues Scoped Out of EIR

A screening environmental analysis of the proposed project was conducted by UC-LBNL in the summer and fall of 2008 that determined that the proposed project would have no impact under CEQA for environmental issues listed below.

1. Agricultural Resources

The LBNL site does not contain any areas used for agricultural purposes nor are there any adjacent parcels with these uses.¹

¹ Initial Study on LBNL LRDP, 2004.

2. Mineral Resources

The entire LBNL site has been mapped by the California State Mining and Geology Board as Mineral Resource Zone-1 (MRZ-1), defined as an area where no significant mineral deposits are present. No mineral extraction takes place at LBNL or on adjacent parcels. The proposed project would therefore have no impact on mineral resources.

3. Population and Housing

The proposed project would result in relocation of approximately 100 UC LBNL personnel from a site on Potter Street in Berkeley to the LBNL main site as well as some internal relocation of personnel within the LBNL site. No housing would be created or destroyed as a result of the project. There would therefore be no substantial population growth as a result of the project and no housing would be displaced. As a result, the proposed project would have no impact in relation to population and housing.

4. Recreation

As the proposed project would not result in any increase in the local or regional population, the proposed project is not expected to result in increased usage of neighborhood or regional parks or other recreational facilities to the extent that substantial physical deterioration of such facilities would occur or accelerate. As a result, the proposed project would have no impact on neighborhood and regional parks, or other recreational facilities.

C. Information Sources and Relevance

Unless otherwise noted through citations in the text, information presented in this EIR is based on site surveys and background research completed in conjunction with the LBNL 2006 Long Range Development Plan (LBNL 2006 LRDP) EIR.

The LBNL site is a 200-acre University-owned site in Berkeley and Oakland, California. The site is located adjacent to the UC Berkeley campus. The LBNL site includes research and support buildings and structures that are

primarily part of a multi-program National Laboratory called the Lawrence Berkeley National Laboratory, a federally funded research and development center operated and managed by the University of California under contract with the U.S. Department of Energy.

The LBNL 2006 LRDP contains a series of principles, strategies, and design guidelines. Four fundamental principles form the basis of the Plan's development strategies for each element of the 2006 LRDP. Development strategies are intended to minimize potential environmental impacts that could result from the implementation of the 2006 LRDP. The design guidelines were developed in parallel with the LRDP and were adopted by UC LBNL following The UC Regents' consideration of the 2006 LRDP. They provide specific guidelines for site planning, landscape, and building design as a means to implement the Plan's development strategies as each new project is developed and implemented. Specific design guidelines are organized by a set of design objectives that essentially correspond to the strategies in the 2006 LRDP.

A series of program-level mitigation measures is included in the LBNL 2006 LRDP EIR. Although this proposed project is not tiered from the LBNL 2006 LRDP EIR, relevant mitigation measures are a part of the proposed project and included in the proposed project description and are reported in the regulatory setting section of Sections 4.1 to 4.13.

D. Cumulative Impact Analysis

Cumulative impacts occur when impacts from the proposed project are considered in combination with past, present, and reasonably foreseeable future projects. To assess potential cumulative impacts, an inventory of planned, pending, and/or reasonably foreseeable projects are considered in combination with the project. Cumulative impact analysis is presented after the analysis for the proposed project at the end of each of Sections 4.1 through 4.13.

Projects on the LBNL site considered in this analysis are shown in Figure 4.0-1. In addition to these LBNL projects, several other UC projects are considered, as described below. These projects are located within a mile of the LBNL site.

Projects on the LBNL site

1. Seismic Phase 1

Seismic Phase I is intended to correct structural deficiencies in LBNL Buildings 50 and 74 in order to improve their performance in a seismic event and upgrade the seismic rating of the buildings from “Poor” to “Good.” Seismic Phase 1 work for Building 74 was finished in late 2009 and the work for Building 50 is expected to finish in early 2010. This work is covered under a categorical exemption under CEQA and a categorical exclusion under NEPA.

2. Building 74 Modernization

An additional phase of Building 74 modernization work includes a renovation of the entire building, including new mechanical, electrical and plumbing systems, new interior partitions, finishes, and laboratory casework. The interior of the building would be remodeled. The work is due to be completed in mid 2012. The project is covered for CEQA under the 2006 LRDP EIR and for NEPA under a categorical exclusion.

3. The User Support Building

The three-story, approximately 30,000 gross square feet (gsf) User Support Building (USB) will include assembly space, support laboratories, and offices. An existing 16,038 gsf structure, Building 10, which housed approximately 24 full-time LBNL staff, was demolished to create space for the USB. An Initial Study/Mitigated Negative Declaration was prepared and circulated in the fall 2006 and adopted by The UC Regents in January 2007. Demolition of Building 10 was completed in 2007. Construction of the USB was initiated in June 2008 and is expected to be complete by July 2011.

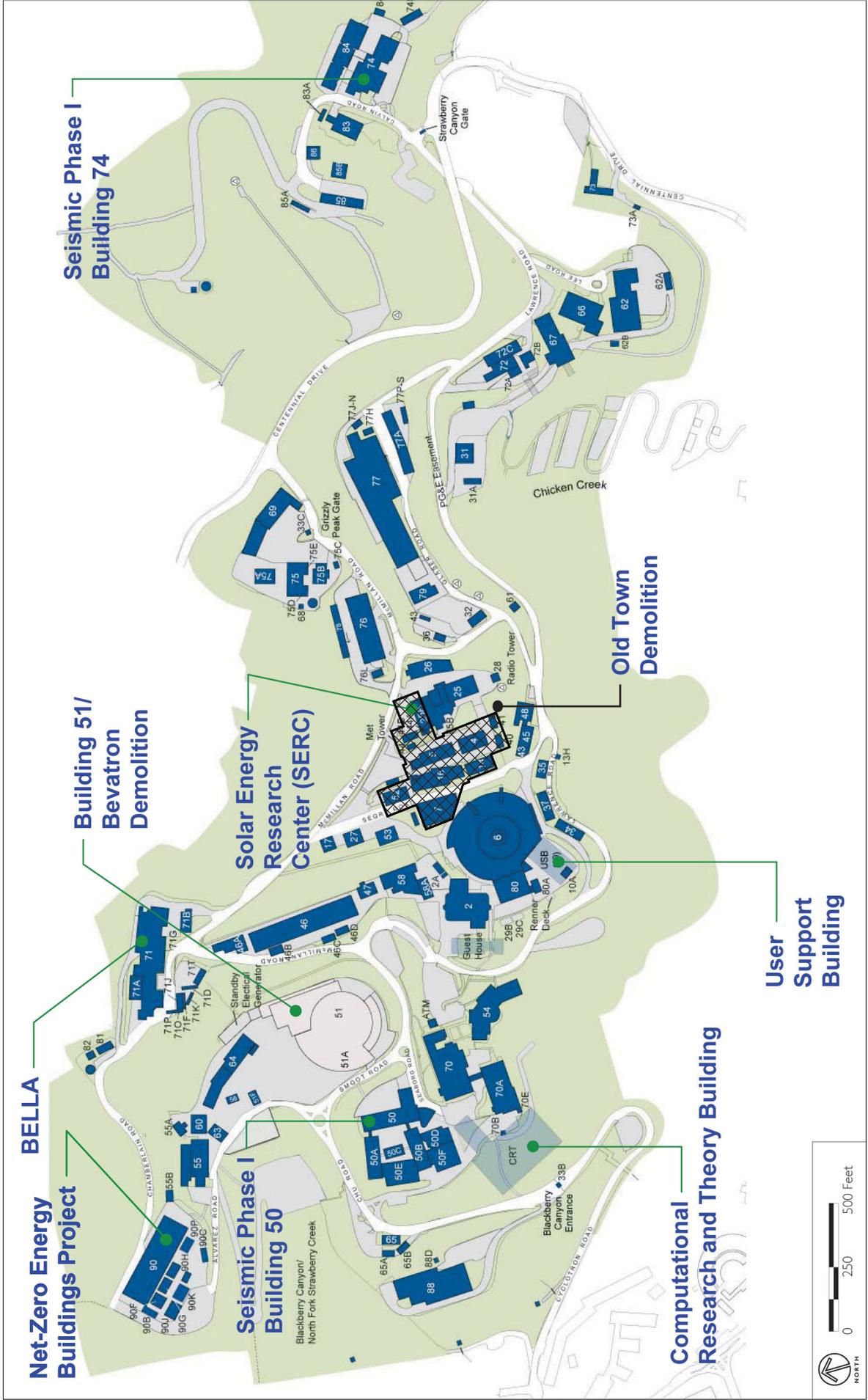


FIGURE 4.0-1
CUMULATIVE PROJECTS

Source: Lawrence Berkeley National Laboratory

4. Building 51 and the Bevatron Demolition

An EIR was certified in July 2007 for the demolition and removal of the Building 51 complex, including the Bevatron (a retired particle accelerator), and the concrete blocks and building shell surrounding it. This EIR was tiered from the 1987 LRDP EIR, as amended. Demolition commenced in August 2008 and is expected to continue through December 2011.

5. Berkeley Lab Laser Accelerator (BELLA) Laser Acquisition, Installation and Use for Research and Development

BELLA will take place almost entirely within Building 71, involving modifications to the internal structure to support a shielded experimental cave and support functions. The cave will house a new laser accelerator system. An additional utility room and stairwell will protrude from the roof. The project is covered under a CEQA categorical exemption and a NEPA EA/FONSI issued in September, 2009. The construction work is scheduled for an approximately 18-month long period from 2009 through 2012.

6. Old Town Demolition

This project covers the decontamination, demolition, and environmental restoration of certain buildings in the LBNL “Old Town” area in the center of the LBNL site. Depending on funding, up to approximately 14 buildings (approximately 55,000 gsf) would be decontaminated and demolished, including Buildings 4, 5, 7, 7C, 14, 16, 25A, 40, 41, 44, 44A, 44B, 52, and 52A. In addition, any contaminated soil under these structures would be remediated and groundwater treatment systems installed (if necessary) within the approximately three-acre project area. A categorical exclusion was filed for the project under NEPA in December 2009. Based on an environmental checklist completed in December 2009, this project was determined to be within the scope of the LBNL 2006 LRDP EIR pursuant to CEQA Guideline 15168. The project was approved in December, 2009. Work is expected to commence in mid 2010 and be completed in mid 2013.

7. Solar Energy Research Center (SERC)

The goal of the Solar Energy Research Center (SERC) project is to accelerate the development of sustainable solar energy sources through various initiatives, such as the development of new materials for use in collectors, efficient processing steps, and energy handling. As originally proposed, the research laboratory would have been part of a four-story, up to 160,000 gsf laboratory constructed on the LBNL site also designed to house UC Berkeley's EBI program. The UC Berkeley program is now proposed to be located at a downtown site (see description of UC Berkeley Helios project below).

The SERC at LBNL would be an approximately 38,000 gsf building devoted to new photovoltaic and electrochemical solar-energy systems. Various sites on the LBNL campus are currently being evaluated for this project, all of which are served by existing roadways and utilities. One site under consideration is the Building 25A demolition site, which is adjacent to the proposed GPL construction site. Construction is currently anticipated to begin in mid to late 2011. Environmental review of this project has not been completed at this time.

8. The Computational Research and Theory Building (CRT)

As currently proposed, the 126,000 gsf Computational Research and Theory (CRT) Building would be constructed near the Blackberry Gate entrance to the LBNL main site. It would provide high-end computing floor space and accompanying office space. CEQA review was completed and an EIR was circulated for public review in approximately mid-2007. The EIR was certified by The UC Regents in May 2008. Construction of the proposed project is currently on hold pending completion of the NEPA process by the DOE.

9. Net-Zero Energy Buildings Project (N-ZEB)

The Net-Zero Energy Buildings (N-ZEB) project would consist of a series of energy-efficient building "testbeds" in the new and existing buildings to allow researchers to conduct measurements of energy use with various prototype

building systems such as windows, lights, heating, ventilation, and air conditioning (HVAC), roofs, and skylights. The project is in a very early stage of development and at this time, it appears that the facility would be built primarily by renovating existing floor space in Building 90 and possibly adding a small building next to Building 90 on a parking lot. The anticipated project is assumed to include a 10,000 gsf building but the building may not be built or may be less than the 10,000 gsf.

The project was awarded funding in December 2009 and has not yet undergone environmental review. Final details of the new facility will be determined by Department of Energy staff in order to meet cost targets and schedule deadlines. UC LBNL lacks sufficient data about the project to include it in its quantitative cumulative impacts calculations in this EIR. However, current information about the anticipated facility indicates that it would make a minimal difference in the quantitative cumulative impact analyses, and would not change the impact conclusions, in this document.

Projects on University of California Berkeley Campus

10. South Campus Integrated Projects (SCIP)

In May 2006, UC Berkeley published a tiered, focused Draft EIR for the Southeast Campus Integrated Proposed Actions (SCIP). The SCIP EIR was certified on December 5, 2006. The SCIP EIR identified significant and unavoidable impacts in the areas of aesthetics, cultural resources, geology, noise, traffic, and utilities and service systems. In May 2007, a fault-rupture hazard investigation for the Student Athlete High Performance Center was prepared and released as an addendum to the EIR.

SCIP projects include seismic and program improvements to California Memorial Stadium, including a 158,000 gsf athletic training center; construction of a parking structure and sports field at the current site of Maxwell Family Field; construction of a 186,000 gsf building linking the Law and Business Schools, landscape improvements at the Southeast Campus and Piedmont Avenue; interior improvements at selected buildings at the School

of Law and the Haas Business School; and renovation and restoration of four historic houses on Piedmont Avenue. Construction of the athletic training center, School of Law facilities, and retrofit of the Piedmont Avenue houses is currently underway.

11. Northeast Quadrant Science and Safety Projects (NEQSSP)

The NEQSSP entail demolition of 100,000 gsf of existing buildings and construction of 430,000 gsf of laboratory, office, and classroom space. The project also includes 140 new parking spaces and would add approximately 400 full-time equivalent (FTE) employees to the northeastern quadrant of the UC Berkeley campus. The project is currently under construction.

12. Helios

This approximately 113,000 gsf building would house the Energy Biosciences Institute (EBI) and complementary bioengineering programs at 2151 Berkeley Way, adjacent to the UC Berkeley Campus Park. EBI's primary research objectives would include the development of a new generation of carbon-neutral biofuels, as well as a thorough examination of their potential environmental, social, and economic impacts. Construction is currently anticipated to be from approximately 2010 to 2013.

13. UC Berkeley Law School Infill

An addition to the Boalt Hall Law School at the south edge of the Berkeley campus, adjacent to Bancroft Way, will replace a south facing courtyard and create a new home for the law library's collection. The design of the 52,072 gsf addition includes efficient compact shelving which will allow more space for student research and reading rooms. At ground-level, a pavilion-style building will house a cafe, student lounge, and a 90-person state-of-the-art classroom. A roof-deck garden will be connected by bridges to the Steinhart Courtyard and to the library's main reading room. A newly landscaped entryway will create a green and vibrant transition from the Berkeley Law complex to Bancroft Way. Construction has commenced and is scheduled to be complete in the spring of 2011.

14. UC Berkeley Naval Architecture Restoration and Blum Center

The historic Naval Architecture Building, designed by John Galen Howard, will be restored and revitalized to meet modern building codes and life safety codes. A total of more than 13,000 gsf will be added to the current 10,918 gsf. A new wing will be constructed 16 feet away from the original structure to respect its historic integrity. A second-level bridge, first-level terrace and ground floor connector under the terrace will link the historical building to its new wing. A plaza area will connect the entire project to neighboring engineering buildings. Most of the ground floor will be devoted to a student work area, designed to foster collaboration and the exchange of ideas. Construction is scheduled to be complete in the fall of 2010.

15. Warren Hall Replacement

Warren Hall, the existing 79,000 gsf building located at the northwest edge of the central campus facing Oxford Street, would be demolished and replaced with a new 200,000 gsf building. The new Warren Hall will house the *Center for Biomedical and Health Sciences*, including research laboratories, instruction facilities, faculty office and conference spaces, magnetic imaging facilities, an expansion of existing animal facilities, and a student lounge and pre-function space. Demolition of Warren Hall has taken place and construction of the project is planned to be completed as early as early-mid 2011.