APPENDIX A
Standard (Required) LBNL Project Features

LBNL has identified several environmentally proactive measures in its 1987 Long Range Development Plan Environmental Impact Report (LRDP EIR; see Chapter 2, Purpose and Need), as amended, that Berkeley Lab implements in all of its projects and development to avoid or minimize potentially significant environmental impacts. These mitigation measures have been adopted as part of the LRDP EIR by The Regents of the University of California and thus are required of all LBNL activities, and are included as part of this NEPA analysis. Consequently, all such measures relevant to the Proposed Action are included in the project description as standard features of all such LBNL projects. These measures are pertinent to such environmental resource areas as visual quality; air quality; biological resources; cultural resources; geology and soils; hazards and hazardous materials; hydrology and water quality; noise; traffic; and utilities. Included among them are those listed below:

- Revegetation of disturbed areas, including slope stabilization sites, using native shrubs, trees, and grasses will be included as part of all new projects.

- Construction contract specifications would require that during construction exposed surfaces would be wetted twice daily or as needed to reduce dust emissions. In addition, contract specifications would require covering of excavated materials.

- Invasion of opportunistic colonizer trees and shrubs will be controlled. A maintenance program for controlling further establishment of eucalyptus, green wattle acacia, French broom, cotoneaster, and other opportunistic colonizer shrubs and trees in disturbed areas on-site will be undertaken. Herbicides will not be used for this purpose.

- Removal of native trees and shrubs will be minimized. (To the greatest extent possible, the removal of large coast live oak, California bay, and Monterey pine trees will be avoided.)

- A photographic record will be made of all structures demolished as part of future projects.

- An individual well-versed in the history of science in the twentieth century will evaluate the significance of specific pieces of equipment that may be replaced due to obsolescence or a change in the vector of research.

- Geologic and soils studies will be undertaken during the design phase of each LBNL building project. Recommendations contained in those studies will be followed to ensure that the effects of landsliding, lurching, and liquefaction potential will not represent a significant adverse impact during a seismic event.

- Excavation and earth moving will be designed for stability, and accomplished during the dry season when feasible. Drainage will be arranged to minimize silting, erosion, and landsliding. Upon completion, all land will be restored, covering exposed earth with planting.

- LBNL will prepare an annual self-assessment summary report. The report will summarize environment, health, and safety program activities, and identify any areas where LBNL is not in compliance with laws and regulations governing hazardous materials, hazardous waste, hazardous materials transportation, regulated building components, worker safety, emergency response, and remediation activities.

- Prior to shipping any hazardous materials to any hazardous waste treatment, storage or disposal facility, LBNL will confirm that the facility is licensed to receive the type of waste LBNL is proposing to ship to that facility.

- LBNL will continue its waste minimization programs and strive to identify new and innovative methods to minimize hazardous waste generated by LBNL activities.

- LBNL will require hazardous waste haulers to provide evidence that they are appropriately licensed to transport the type of wastes being shipped from LBNL.

- In addition to implementation of the numerous employee communication and training requirements included in regulatory programs, LBNL will undertake the following additional measures as ongoing reminders to workers of health and safety requirements:

  – Posting, in areas where hazardous materials are handled, of phone numbers of LBNL offices, which can assist in proper handling procedures and emergency response information.

  – Continuing to post "Emergency Response and Evacuation Plans" in all LBNL buildings.

  – Continuing to post all sinks in areas where hazardous materials are handled with signs reminding users that hazardous wastes cannot be poured down the drain.

  – Continuing to post dumpsters and central trash collection areas where hazardous materials are handled with signs reminding users that hazardous wastes cannot be disposed of as trash.

- LBNL will update its emergency preparedness and response program on an annual basis, and will provide copies of this program to local emergency response agencies and to members of the public upon request.

- Each individual project will continue to be designed and constructed with adequate storm drainage facilities to collect surface water from roofs, sidewalks, parking lots, and other surfaces and deliver it into existing channels which have adequate capacity to handle the flow.

- Summary: Potential adverse impacts to water quality can be reduced if LBNL adopts feasible mitigation measures to control surface water runoff, prevent erosion, and maintain adequate drainage facilities.

- Projected noise levels will be compared with ambient noise levels and the Berkeley Noise Ordinance limits, or other applicable regulations. Acoustical performance standards would be included in future contract documents. LBNL will continue to design, construct and operate buildings and building equipment taking into account measures to reduce the potential for excessive noise transmission.

- Noise-generating construction equipment will be located as far as possible from existing buildings. If necessary, windows of laboratories or offices will be temporarily covered to reduce interior noise levels on-site.

- LBNL's Facilities Master Specifications (Environment, Safety, and Health General Requirements) require subcontractors to furnish an adequate number of flaggers for all work that may affect the use of roads by the University. The following standards are required for traffic flaggers:

  – Flaggers shall be posted at the entrance and exit of access roads used for hauling material and at all other areas where normal traffic is subject to disruption.

  – Flaggers shall be equipped and instructed at Subcontractor's expense in accordance with current "Instructions to Flaggers" of the Department of Transportation, State of California.

- Prior to construction of any project which may add significant sewer load to the city sanitary sewer system, LBNL will investigate the potential impact of the project on the city system. LBNL will identify mitigation measures to accommodate the sewer load if the impact investigation indicates that the city system could not accommodate the additional sewage. LBNL will reimburse the City of Berkeley and/or EBMUD for its fair share of allowable and necessary sewer improvement capital costs which are needed to accommodate increased demand and mitigate sewer impacts resulting from implementation of the LBNL LRDP.

APPENDIX B

Memorandum of Agreement regarding the Demolition of the Bevatron Building among:

- **Department of Energy**
- **California State Historic Preservation Officer**
- **Advisory Council on Historic Preservation**

MEMORANDUM OF AGREEMENT AMONG THE DEPARTMENT OF ENERGY THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION REGARDING THE DEMOLITION OF THE BEVATRON BUILDING, LAWRENCE BERKELEY NATIONAL LABORATORY, BERKELEY, ALAMEDA COUNTY CALIFORNIA

WHEREAS, the Department of Energy, Oakland Operations Office (DOE-OAK) has determined that the demolition of the Bevatron Building/Building 51 and 51A Complex, Lawrence Berkeley National Laboratory (Undertaking), will affect the Bevatron Building, a property eligible for inclusion on the National Register of Historic Places, and consulted with California State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) in accordance with 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act, (16 U.S.C. 470f) and Section 110 of the same Act, (16 U.S. C. 470h-2(f);

NOW, THEREFORE, DOE-OAK, the SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

Stipulations

The DOE-OAK shall ensure that the following stipulations are carried out:

I. **Recordation**

A. DOE-OAK shall use, to the extent feasible, office and laboratory space in Building 51 to meet facility needs to achieve Lawrence Berkeley Laboratory's science and technology mission. This includes examining the use of Building 51 for accelerators and other large experimental apparatus, such as the equipment for the heavy-ion fusion program.

1. If the DOE determines that the re-use of Building 51 shall require the removal of the Bevatron apparatus from the building, the DOE-OAK shall contact the Historic American Engineering Record (HAER), National Park Service, 600 Harrison Street, Suite 600, San Francisco, 94107, to determine what level and kind of recordation is required for the apparatus. Unless otherwise agreed to by HAER, DOE-OAK shall ensure that all documentation is completed and accepted by HAER prior to the undertaking, and that copies of this documentation are made available to the SHPO and appropriate local archives designated by the SHPO.

2. If the DOE-OAK determines that the re-use of Building 51 is not feasible, or that the building can no longer contribute to the program goals of the facility, the DOE may demolish Building 51 provided that the measures included in Stipulation I.A.1 of this MOA have been completed and that the DOE-OAK contact the Historic American Building Survey (HABS), National Park Service, 600 Harrison Street, Suite 600, San Francisco, 94107, to determine what level and kind of recordation is required for the building. Unless otherwise agreed to by HABS, the DOE-OAK shall ensure that all documentation is completed and accepted by HABS prior to the undertaking, and that copies of this documentation are made available to the SHPO and an appropriate local archives designated by the SHPO.

II. Dispute Resolution Among Consulting Parties

Should the DOE-OAK or the SHPO object within 30 days to any action pursuant to this Agreement, the parties to the agreement shall consult to resolve the objections to the Agreement. If DOE-OAK determines that the objection cannot be resolved, DOE-OAK shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

1. provide the DOE-OAK with recommendations, which the DOE-OAK will take into account in reaching a final decision regarding the dispute; or

2. notify DOE-OAK that it will comment pursuant to 36 CFR 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the DOE-OAK in accordance with 36 CFR 800.6(c) (2) with reference only to the subject of the dispute; the DOE-OAK's responsibility to carry out all actions under this Agreement that are not subjects of the dispute will remain unchanged.

III. Amendments

If any of the signatories determines that the terms of this Agreement cannot be carried out as written and that the Agreement should be amended, that signatory shall immediately consult the other signatories concerning such amendment. Amendments shall be considered and executed in accordance with 36 CFR 800.5(e)(5).

IV. Failure to Carry Out the Terms of This Agreement

Failure to carry out the terms of the Agreement require that DOE-OAK again request the Council's comments in accordance with 36 CFR 800. If DOE-OAK cannot carry out the terms of the Agreement, it will not take or sanction any action or make any irreversible commitment that would result in an adverse effect to a historic property or that could foreclose the Councils consideration of modifications or alternatives to the undertaking.

Execution of this Memorandum of Agreement and implementation of its terms evidence that the DOE-OAK has afforded the Council an opportunity to comment on the undertaking and its effects on historic properties, and that the DOE-OAK has taken into account the effects of the undertaking on historic properties.

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: John M. Fowler DATE: 4/13/97

John M. Fowler, Executive Director

DOE OAKLAND OPERATIONS OFFICE

BY: for Martin J. Donnagha DATE: 10/7/97

James M. Turner, Ph.D., Manager

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

BY: Cherilyn Widell DATE: 10/22/97

Cherilyn Widell

APPENDIX C
Socioeconomic Analysis

Setting and Impacts Summary

The Proposed Action would disassemble the Bevatron and demolish Building 51 and the foundation underneath the building. The site would be backfilled and the fill would be compacted and leveled. The Proposed Action would therefore not displace existing housing or residents. The Proposed Action would extend the existing roadway network adjacent to the project site. However, the new roadway segment would directly serve the project site, which would not include residential uses.

No new homes, employment, or infrastructure would be created as a result of the demolition of Building 51. As a result, no increases in population levels are anticipated. There are no existing housing structures associated with Building 51 and no homes would be demolished as a result of this Proposed Action. Therefore, no replacement housing is needed

Federal funding for the Proposed Action would be from national sources and would not represent an important commitment of local resources. Employment for the demolition would draw upon local populations and would not be perceptible in any particular employment or housing market.

The Proposed Action would therefore not directly or indirectly induce substantial growth in the area.

APPENDIX D
Environmental Justice Analysis

Setting

The LBNL complex is located in Alameda County, with a large portion located within the Berkeley city limits, and a smaller portion located within the Oakland city limits. The University of California, Berkeley, is adjacent to LBNL, and the nearest residential and commercial neighborhoods are located within the City of Berkeley. The nearest Oakland properties consist of designated open space areas. Unincorporated areas of Contra Costa County lie to the north and east, most of which are also designated open space areas.

Census 2000 revealed that Alameda County's population is approximately 51 percent non-white or more than one race: 15 percent black or African American alone, less than 1 percent American Indian and Alaska Native alone, 20 percent Asian alone, less than 1 percent Native Hawaiian and other Pacific Islander alone, 9 percent "some other race alone," and approximately 6 percent two or more races. In the City of Berkeley, the population is approximately 41 percent non-white or more than one race, and in the City of Oakland, the population is approximately 69 percent non-white or more than one race. Table D-1 below, compares the racial breakdown of Alameda County, Berkeley, Oakland, and census tracts located near LBNL in Berkeley.[1]

Census 2000 also identifies median[2] household incomes and family incomes. Table D-2, below, compares medial household incomes and family incomes in Alameda County, the cities of Berkeley and Oakland, and the residential and commercial census tracts nearest LBNL.

Impacts

The project site is located in Alameda County, within Oakland's city limits. Both Alameda County and Oakland have large non-white populations. In Alameda County, however, the largest single racial group is white (48.6%); in Oakland the largest single racial group is black or African American (35.7%). In residential and commercial areas located in the vicinity of LBNL, the single largest racial group is white (63.5% to 88.9%).

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1 Census tract 4216 is located northwest of LBNL and includes the neighborhoods north of the UC Berkeley campus; census tract 4227 is southwest of LBNL, and census tracts 4237 and 4238 are in the hilly areas further southwest of LBNL and south of the UC Berkeley campus.

2 Median income is the "middle" income: one half of all incomes are below the median and one half are above the median.

TABLE D-1
COMPARISON OF SELF-IDENTIFIED RACIAL IDENTITIES (PERCENTAGE)
ALAMEDA COUNTY, BERKELEY, OAKLAND, AND
CENSUS TRACTS 4216, 4227, 4237 AND 4238

	Percentage of Population						
Race	**Alameda County**	**City of Berkeley**	**City of Oakland**	**Census Tract 4216**	**Census Tract 4227**	**Census Tract 4237**	**Census Tract 4238**
White alone	48.6%	59.2%	31.3%	83.5%	63.5%	70.3%	88.9%
Black or African American alone	14.7%	13.6%	35.7%	1.9%	3.2%	2.6%	1.9%
American Indian and Alaska Native alone	0.6%	0.5%	0.7%	0.0%	0.2%	0.2%	0.3%
Asian alone	20.4%	16.4%	15.2%	9.0%	20.0%	19.4%	6.0%
Native Hawaiian alone and Other Pacific Islander alone	0.6%	0.1%	0.5%	0.2%	0.0%	0.0%	0.0%
Some other race alone	9.0%	4.6%	11.7%	0.2%	4.9%	2.1%	0.5%
Two or more races	6.0%	5.6%	5.0%	5.2%	8.2%	5.3%	2.4%
Total	99.9%*	100.0%	100.1%*	100.0%	100.0%	99.9%*	100.0%

***** Less than 100% due to rounding error.

SOURCE: Census 2000, ESA (2007)

TABLE D-2
COMPARISON OF FAMILY AND HOUSEHOLD MEDIAN INCOMES (1999)
ALAMEDA COUNTY, BERKELEY, OAKLAND AND
CENSUS TRACTS 4216, 4227, 4237 AND 4238

2000 Income	**Alameda County**	**City of Berkeley**	**City of Oakland**	**Census Tract 4216**	**Census Tract 4227**	**Census Tract 4237**	**Census Tract 4238**
Median Household Income	$55,946	$44,485	$40,055	$95,868	$25,625	$40,660	$105,011
Median Family Income	$65,857	$70,434	$44,384	$125,896	$48,846	$103,628	$149,802

SOURCE: Census 2000, ESA (2007)

Household and family median incomes are lower than County median incomes in both Oakland and in the City of Berkeley's census tract 4237, which has a high student population. Median household incomes alone are lower than the County median household income in Berkeley, Oakland, and City of Berkeley's census tracts 4227 and 4237. Median family incomes are higher than County median incomes for the City of Berkeley overall, as well as for the City of Berkeley census tracts 4216, 4237, and 4238.

As stated in Section 5.1.12, there would be no disproportionately high or adverse human health or environmental effects on minority or low-income populations from the demolition as a result of the Proposed Action, due to the low incidence of localized, off-site impacts from the Proposed Action, as well as to the demographics of populations living nearest the project site.

APPENDIX E

Revisions to the Draft Environmental Assessment

The following corrections and changes are made to the Draft Environmental Assessment and have been incorporated within the text. Revised or new language is underlined. Deleted language is indicated by ~~strikethrough~~ text.

Page 1:

> This Environmental Assessment (EA) describes a proposal by the U.S. Department of Energy (DOE) ~~and LBNL~~ to demolish the Bevatron and the structure housing it, Building 51, at Berkeley Lab. During its operation from 1954 until 1993, the Bevatron was among the world's leading particle accelerators, and during the 1950s and 1960s, four Nobel Prizes were awarded for work conducted in whole or in part there. The Bevatron is approximately 180 feet in diameter. Building 51 is a large (approximately 126,500 gross square feet) shed-like structure built to shelter the Bevatron apparatus and its associated mechanical, electrical, shop and office functions. Since the end of the Bevatron's operations in 1993, Building 51 has had limited use for equipment storage, office space, and dry laboratories.

Page 1-2:

> The project site is approximately four acres in size, including parking and staging areas. Of this total, approximately 2.25 acres would be converted from developed area (i.e., occupied by Building 51) to an undeveloped area for an indeterminate time, until another project is proposed, approved, and initiated. Under the proposed project, the concrete shielding blocks that surround the Bevatron would be removed, the Bevatron apparatus would be disassembled, Building 51 and the shallow foundation and tunnels underneath the building would be demolished, and the resulting debris and other materials would be removed. Minor soil ~~site~~ remediation effort is expected ~~would be included~~ as part of this action. The site would then be backfilled, and the fill compacted and leveled. The duration of the physical work for the project may vary from four to seven years, from early ~~2006~~ 2008 through ~~2009 or~~ 2011 or beyond, contingent upon funding and results of material sampling. For the purposes of conservative impact assessment, where impacts presumably are intensified in a shorter project timeframe, the project is assumed to take place over a four year period. [Footnote added].
>
> A variant of the project could reduce the minimum duration of the project from four years to three and a half years, but this reduction in schedule would have no resulting effect on project impacts, including traffic impacts. See revised page 76 and Appendix G.

Page 2:

Depending upon funding, a project variant, under which project activities would be conducted in an alternative sequence, has been developed since publication of the Draft of this Environmental Assessment. The alternative-sequence project variant would begin with appropriate sampling and surveys for hazardous building construction materials and debris, followed by removal and abatement of all hazardous materials within Building 51. Prior to demolition of the building structures, systems and components, the project would set up additional stormwater drainage and collection systems. Once the building was demolished down to the grade level concrete slab, the Bevatron shielding blocks and equipment would be dismantled and removed with the use of two modern mobile cranes. Finally, the project would demolish and remove the building foundations, tunnels, trenches and slabs and backfill with suitable clean fill material. This alternative-sequence variant, if implemented, would not create a new significant impact, nor would it substantially increase the severity of a significant impact associated with the Project nor require new or altered mitigation measures. [Footnote added]

The alternative-sequence variant was analyzed in a Technical Memorandum dated July 3, 2007. The Memorandum was included in the Final EIR for the Demolition of Building 51 and the Bevatron as Appendix E. The Bevatron Final EIR was certified on July 19, 2007. The Memorandum is included in this Environmental Assessment as Appendix G. It determined that there would not be an increase in severity of impacts under the alternative-sequence or alternative duration.

Page 3-4:

Under this alternative, most of the concrete from the building structure (i.e., walls and floors), foundation, and many of the concrete blocks shielding the Bevatron would be rubbled on-site. Metal (e.g., rebar) in the debris would be separated and disposed of separately. Only concrete containing no detectable added (i.e., non-naturally occurring) radioactivity and otherwise clear of contaminants would be rubbled. The rubbled material and segregated reinforcing steel would be recycled if public or private sector demand was available at the time of production. If not, it would be disposed of at a landfill. LBNL could use the rubble as aggregate or fill material if the need for such materials coincided with its production, although this is speculative at the present time.

Page 7:

With the acceptance of the HAER report by NPS, DOE may demolish Building 51 provided that DOE contacts the Historic American Building Survey (HABS) division of NPS to determine what level and kind of recordation is required for the buildings, and that such documentation is completed and accepted by HABS prior to demolition. LBNL has consulted with NPS. The latter determined that an addendum to the HAER report would meet HABS requirements. The HAER addendum has been completed and was accepted ~~is currently being reviewed~~ by NPS in August 2006. ~~Demolition would not commence until NPS accepts the document.~~ For NEPA purposes, with the signed MOA, completion of the HAER documentation, and approval of the HABS addendum by NPS, LBNL ~~will have~~ has adequately mitigated for the potential loss of Building 51, in accordance with the NHPA.

As an additional measure, LBNL plans to commemorate the scientific achievements attributed to the Bevatron with a monument and/or display listing the historic discoveries that occurred there.

Page 9:

The goal of the LBNL Building 51 and Bevatron Demolition Project is to eliminate existing potential hazards and make the building site available for eventual future use. By removing the structure and clearing the site, future site reuse could occur in a timely manner. For example, contaminated materials, equipment or environmental media, if any, would have been removed or otherwise managed as part of the proposed demolition project and would not impede future development. However, at this time, there are no existing plans for future development of the site. As future use is speculative, it is not described in this Environmental Assessment, nor are the impacts of such use evaluated. The proposed action would also reduce LBNL maintenance obligations and help off-set creation of new space.

~~The primary planning document for development at LBNL is~~ The Laboratory's Long Range Development Plan (LRDP) is a planning document for development at LBNL. ~~adopted by the University of California in August 1987. All future development at LBNL will be consistent with this document and~~ When the Draft of this Environmental Assessment was published in 2006, its analysis was completed in accordance with the 1987 LRDP Environmental Impact Report (EIR), as amended, prepared pursuant to ~~in accordance with~~ the California Environmental Quality Act (CEQA).~~, or with~~ Since publication of the Draft Environmental Assessment, two documents ~~currently being~~ were prepared by Berkeley Lab that ~~will~~ supersede ~~these current documents: a~~ the former LRDP and the 1987 LRDP EIR, as amended: the 2006 LBNL Long Range Development Plan and its accompanying LRDP EIR. The analysis of this Environmental Assessment, is consistent with the 1987 LRDP EIR, as amended, is also consistent with the 2006 LBNL LRDP, as well as the 2006 LRDP EIR. [Footnote added]. Project-level NEPA and CEQA environmental analysis will be conducted if and when necessary for any future development at the Building 51 site.

This Environmental Assessment includes references to the 1987 LRDP EIR, as amended, although the analysis is consistent with both the 1987 LRDP EIR and the 2006 LRDP EIR.

Page 11-12:

Under the Proposed Action, the Bevatron apparatus would be disassembled, Building 51 and the foundation underneath the building would be demolished, and the resulting debris and other materials would be removed. The site would then be backfilled, and the fill would be compacted and leveled. [Footnote added] This would make future reuse of the site more feasible, although further preparatory site work outside of the scope of this project would be necessary. However, there are no firm plans for future development of the site at this time.

A potential alternative-sequence project variant that would demolish the structure of Building 51 before disassembly and removal of the Bevatron is analyzed and addressed in Appendix G.

Page 17:

In brief, under the Proposed Action, the concrete block shielding surrounding the Bevatron would be removed, the Bevatron apparatus would be disassembled, Building 51 and the shallow foundation and tunnels underneath the building would be demolished, and the resulting debris and other materials would be removed. Minor site remediation effort would be included as part of this action. The site would then be backfilled, and the fill would be compacted to grade. This would make future reuse of the site more feasible, although further preparatory site work outside of the scope of this project would be necessary.

Depending upon funding, a project variant, under which project activities would be conducted in an alternative sequence, has been developed since publication of the Draft of this Environmental Assessment. [Footnote added] The alternative-sequence project variant would begin with appropriate sampling and surveys for hazardous building construction materials and debris, followed by removal and abatement of all hazardous materials within Building 51. Prior to demolition of the building structures, systems and components, the project would set up additional stormwater drainage and collection systems. Once the building was demolished down to the grade level concrete slab, the Bevatron shielding blocks and equipment would be dismantled and removed with the use of two modern mobile cranes. Finally, the project would demolish and remove the building foundations, tunnels, trenches and slabs and backfill with suitable clean fill material. This alternative-sequence variant, if implemented, would not create a new significant impact, nor would it substantially increase the severity of a significant impact associated with the Project or would it require new or altered mitigation measures.

The alternative-sequence variant was analyzed in a Technical Memorandum dated July 3, 2007, which was included in the Final EIR for the Demolition of Building 51 and the Bevatron as Appendix E. The Bevatron Final EIR was certified on July 19, 2007. The Memorandum is included in this Environmental Assessment as Appendix G. It determined that there would not be an increase in severity of impacts under the alternative-sequence or alternate duration.

Page 18:

The duration of the physical work for the project may vary from four to seven years, from mid 2008 through 2011 or beyond, contingent upon funding and results of material sampling. For the purposes of conservative impact assessment, where impacts presumably are intensified in a shorter project timeframe, the project is assumed to take place over a four-year period. [Footnote added]

A variant of the project could reduce the minimum duration of the project from four years to three and a half years, but this reduction in schedule would have no resulting effect on project impacts, including traffic impacts. See revised Page 76 and Appendix G.

Page 18:

Demolition would involve removal of the building structure and its shallow foundations. The general sequence of demolition activities would be (1) identification and isolation of building elements to be demolished; (2) abatement of all hazardous materials ~~removal of non-structural materials~~; (3) demolition of the building structure ~~removal of non-load-bearing structural elements~~; and (4) segregation and disposal of the debris ~~removal of load-bearing structural elements~~.

Manual removal of the external asbestos-containing siding materials, by unbolting fasteners, would be conducted prior to building demolition to prevent creation of airborne particles. Asbestos-containing materials in the roof membrane would be abated. ~~The roof membrane and sections of the roof structure would be removed to permit the dismantling and removal of three cranes that are within the building.~~ The building superstructure would be dismantled and demolished to the grade level concrete slab. This slab would be surveyed, decontaminated if required, and removed along with the shallow foundation structures and tunnels. Those portions of the concrete slab that are not beneath the building would remain in place. In addition, a cooling tower adjacent to and surrounded on three sides by Building 51 that formerly provided chilled water for air conditioning ~~would be~~ has been demolished and removed. Deep underground concrete foundations would remain, as would most of the concrete retaining walls that support the hillside above the facility.

Page 19:

The Building 51 outer wall forms a portion of the retaining walls. In order to keep the hillside in place during and after the building is demolished, approximately 170 feet of new concrete retaining wall would be constructed inside Building 51 prior to the demolition of that building, which would be kept in place after demolition. An alternative would be to reinforce existing walls to retain the hillside.

Materials disposition would occur at various stages of the project. About half of the demolition materials would consist of non-hazardous debris and other items typical of demolition projects. The project would seek to reuse or recycle such materials (e.g., uncontaminated metals and concrete) where feasible. ~~For example, unrestricted, uncontaminated metals might go to scrap dealers.~~ Items that could not be salvaged would be sent to appropriate municipal landfills, such as the Altamont Landfill in Livermore, California.

Page 20:

Testing, fill replacement, and stabilization would be the final set of field activities. The area to be demolished extends to the exterior of Building 51. Soil under this area would be surveyed for contaminants under the auspices of the Laboratory's Environment, Health, and Safety (EH&S) Division. Residual chemical or radiological contamination, if any, would be addressed by the EH&S Division in consultation with the appropriate regulatory agency.

~~Radiological contamination of the soil is not anticipated, due to the shielding provided by the foundation of the building.~~ Newly discovered environmental releases of hazardous constituents will meet the notification and corrective action requirements in LBNL's Hazardous Waste Facility Permit (EPA ID. no. CA 4890008986), section IV. B. "Newly Identified Releases". Cleanup standards and methods will be consistent with LBNL's Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at LBNL Regulated under the Resources Conservation and Recovery Act (DOE/EA-1527).

The open area, or demolition zone, which would be approximately 2.25 acres, would then be backfilled with suitable clean fill material and compacted to grade in accordance with engineering requirements. The source of this material would be determined at the time of need, based upon local supply, and would be partially drawn from LBNL stockpiles~~; e.g., from clean soil excavated for the Lab's Molecular Foundry or other projects~~. It is also likely that some clean residual rubble from the slab and foundations would be used as fill material. Although the Laboratory would use clean LBNL-derived fill material as much as possible, this EA conservatively assumes that half of the project's backfill requirements would be fill certified as clean by the provider and brought in from off-site. The demolition zone would be hydro-seeded with native grasses. Sampling wells for the Laboratory's Environmental Restoration Program would continue to function. The Proposed Action would not add any impervious surfaces to Berkeley Lab. In fact, it would decrease the amount of impervious surfaces. There are no longer any natural drainages on the site, and no streams or rivers would be altered.

Page 21:

Demolition materials would be staged at or near the project site, inside the LBNL property line. Truck shipments from the site are planned to proceed west on Hearst Avenue, south on Oxford Street, and then west on University Avenue to Interstate 80. Shipments to the site would follow this route in reverse. Demolition work would be conducted approximately 40 hours per week, Monday through Friday. Normal work hours would be between 7:00 a.m. and 3:30 p.m. It is possible that some truck loading and departure would take place on Saturdays ~~and/~~or Sundays, although this would be infrequent. No roads would be closed as a result of the action, and no new roads, road extensions, or improvements would be required. Similarly, project equipment (including excavators, front-end loaders, graders, hoe-rams, and mobile cranes) would be staged at or near the site, primarily at the parking lot north of Building 51.

Page 28:

The federal Clean Air Act of 1970 and its amendments established maximum allowable concentration standards for six ambient air pollutants known as "criteria" pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter (respirable PM_{10} and fine $PM_{2.5}$), and lead. [Footnote added]. Each of these standards was set to meet specific public health and welfare criteria. Individual states were given the option to adopt more

stringent state standards for criteria pollutants and to include other pollutants. California has done so through the California Clean Air Act.

PM-10 and PM-2.5 consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. A micron is one-millionth of a meter, or less than one-25,000th of an inch. For comparison, human hair is 50 microns or larger in diameter. PM-10 and PM-2.5 represent particulate matter of sizes that can be inhaled into the air passages and deep into the lungs and can cause adverse health effects. Particulate matter in the atmosphere results from many kinds of aerosol-producing industrial and agricultural operations, fuel combustion, and atmospheric photochemical reactions. Some sources of particulate matter, such as demolition and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect. Very small particles (PM-2.5) of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may be injurious to health. Particulates also can damage materials and reduce visibility.

Page 29:

The central issue of concern with DPM is the risk of chronic heath effects associated with long-term exposure to these particulates. To address this risk, CARB developed a risk management guidance document and risk reduction plan to reduce DPM and resultant health risk by 75 percent in 2010 and 85 percent by 2020. Since approval of these documents in September 2000, CARB has adopted a series of rules for stationary and portable diesel engines, solid waste collection vehicles, transport refrigeration units, and idling of diesel vehicles. Additional measures and specific regulations to reduce DPM emissions will be evaluated and developed over the next several years. In addition, in May 2004, the U.S. Environmental Protection Agency (EPA) adopted a comprehensive national program known as the Clean Air Nonroad Diesel Rule to reduce emissions from future nonroad diesel engines by more than 90 percent by integrating engine and fuel controls (EPA, 2004). ~~In parallel with emission standards for heavy-duty diesel engines, EPA introduced sulfur content requirements for highway diesel fuel.~~ As part of the Clean Air Nonroad Diesel Rule, EPA introduced sulfur content requirements for highway diesel fuel. The highway vehicle diesel fuel sulfur limit, which was originally 5,000 parts per million (ppm), was first revised to a limit of 500 ppm (low sulfur fuel), and then further reduced to 15 ppm (ultra-low sulfur fuel), beginning, for retail and wholesale consumers, on October 15, 2006. The 15 ppm sulfur limit is required to prevent the malfunction of catalyzed filtration systems that are needed to meet the ~~meet~~ future diesel engine emission standards. These federal limits on sulfur in fuel apply only to fuel for highway vehicles. CARB regulations mandate the same sulfur content for highway diesel fuel as do the EPA regulations, except that the effective date for retail and wholesale consumers is September 1, 2006.

Nonroad vehicle federal restrictions on sulfur content in diesel fuel ~~for nonroad engines~~ follow a different schedule. The 2004 EPA Nonroad Diesel rule limits the sulfur in nonroad fuels to 500 ppm effective June 1, 2007, and 15 ppm effective June 1, 2010. Subsequent to these federal restrictions for nonroad engines, CARB moved up the dates for compliance with sulfur restrictions and on December 14, 2004, required that nonroad diesel fuel sold in California, except for diesel fuel used for locomotives or marine engines, must meet the same sulfur restrictions as fuel used for highway vehicles. In this case, the sulfur content in

fuel for nonroad engines in California must not exceed 15 ppm as of September 1, 2006, rather than EPA date of June 2010.

Page 31 (footnote 4):

Alameda whipsnake (Masticophis lateralis euryxanthus), threatened under both federal and state law, have not been sighted at LBNL, although suitable habitat may be present on the Lab site. However, this would most likely be at the eastern corner of the Lab property, contiguous with open space to the north and east. Suitable habitat is not present at or near Building 51. ~~On October 18, 2005, USFWS issued revised designations of Alameda whipsnake critical habitat, which do not include any portion of the project site (Federal Register, Volume 70, Number 200, pp. 60608 et seq.).~~ Critical habitat for the species was re-proposed in October 2005 (USFWS, 2005d) and, as adopted in October 2006 (USFWS, 2006), includes the easternmost portion of the Lab site.

Page 36:

The project site is immediately adjacent to the Hayward Fault Zone and approximately 19 miles northeast of the active San Andreas Fault Zone. Other principal faults capable of producing significant ground shaking at the project site are the San Gregorio-Hosgri, Calaveras, Concord–Green Valley, Marsh Creek–Greenville, and Rodgers Creek faults. The USGS Working Group on California Earthquake Probabilities estimates that there is a 27-percent chance that the Hayward–Rodgers Creek Fault System will experience an earthquake of ~~M~~ magnitude 6.7 or greater in the next 30 years (USGS, 2003). Two active traces of the Hayward Fault are close to but not within the project site; the nearest ("Main Trace") is approximately 1,000 feet downslope, southwest of the project site, while the West Trace is located an additional 100 to 150 feet west (CGS, 1982). The USGS Working Group on California Earthquake Probabilities recently estimated that there is a 21-percent chance of the San Andreas Fault experiencing an earthquake of ~~M~~ magnitude 6.7 or greater in the next 30 years (USGS, 2003).

Page 37:

Hazardous materials are commonly used in commercial, agricultural, and industrial applications, as well as in residential areas to a limited extent. A hazardous waste is any hazardous material that is discarded, abandoned, disposed, or in some cases, is to be recycled. The same criteria that render a material hazardous also make a waste hazardous.

Page 47:

To remediate the Building 51/64 Groundwater Solvent Plume, contaminated source area soils located at the southeast corner of Building 64 were excavated as an ICM in August 2000 and a groundwater extraction system was installed in the backfilled excavation. In addition, an in situ soil flushing pilot test is being conducted in the source area to prevent further migration of contaminants in groundwater. To divert discharges away from the North Fork of Strawberry Creek, an ICM was also implemented that routes water from a portion of the Building 51 subdrain system to a groundwater treatment system using

granular activated carbon. The treated groundwater is then discharged to the sanitary sewer under an EBMUD wastewater discharge permit.

Page 47:

The CMS Report recommends that the following further corrective actions be undertaken in the vicinity of the project site in the CMI phase: excavation and off-site disposal of saturated and unsaturated zone soils in the plume source zone, monitored natural attenuation for the remaining plume area, and rerouting or lining of the storm drain to prevent migration of groundwater contaminants to surface water. For more complete descriptions of contamination and corrective action measures in the vicinity of Building 51, the reader is directed to the CMS Report.

Once Building 51 is demolished, further investigation for potential soil and groundwater contamination at portions of the site that were previously inaccessible would take place, and appropriate corrective measures would be undertaken ~~as required by DTSC, in consultation with the San Francisco Bay Regional Water Quality Control Board and the City of Berkeley Toxics Management Division~~. Newly discovered environmental releases of hazardous constituents will meet the notification and corrective action requirements in LBNL's Hazardous Waste Facility Permit (EPA ID. no. CA 4890008986), section IV. B. "Newly Identified Releases." Cleanup standards and methods will be consistent with LBNL's Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at LBNL Regulated under the Resources Conservation and Recovery Act (DOE/EA-1527).

Page 52-53:

LBNL also contracts with a private security firm, which is responsible for on-site security needs including Laboratory access, property protection, and traffic control. The on-site security staff at LBNL totals approximately ~~25~~ 18 personnel, divided into approximately five to six personnel per shift. Staffing and resources include an on-site manager, two roving patrols 24 hours per day, and gate access attendants 24 hours per day at the Blackberry Gate and fewer hours at the Strawberry and Grizzly Peak gates.

Page 59:

Demolition activities could create a temporary adverse effect on the local air quality of the site and its surroundings. These activities have the potential to generate 1) dust (including PM_{10} and $PM_{2.5}$), primarily from “fugitive” sources (i.e., emissions released through means other than through a stack or tailpipe); and 2) lesser quantities of other criteria air pollutants, primarily from tailpipe emissions from haul trucks, ~~and~~ heavy construction equipment, ~~and~~ demolition machinery (primarily diesel-powered) and worker automobile trips (primarily gasoline-powered). The Proposed Action may also involve demolition and removal of asbestos-containing building materials.

The Bevatron apparatus would be disassembled and Building 51 and the foundation slabs and tunnels underneath the building would be demolished. All work related to disassembly and removal of the internal structures (i.e., the concrete shielding blocks and the Bevatron machine) would occur while the exterior building structure is in place, minimizing the release of dust and other emissions. Subsequently, this external building would be demolished. After demolition of the building, the slab and foundation structure would be demolished. [Footnote added:]

A potential alternative-sequence project variant that would demolish the structure of Building 51 before disassembly and removal of the Bevatron is analyzed and addressed in Appendix E of the Bevatron Final EIR, which was certified on July 19, 2007. The analysis is included in this document as Appendix G.

After demolition of the building, the slab and foundation structure would be demolished. Later demolition steps would include the possible excavation of approximately 200 cubic yards of contaminated soils and backfill of the site with an estimated 20,000 cubic yards of clean fill.

Page 61:

Not all demolition equipment would be on-site or operating at the same time, thereby reducing the potential short-term impact of these tailpipe emission sources. Moreover, diesel- and gasoline-powered equipment operation would be limited to work hours, and LBNL contract provisions would place limits on equipment idling, require use of electric power in lieu of internal combustion engine power, require use of ultra low-sulfur diesel fuel, and require equipment maintenance to reduce gaseous emissions. As a result of these measures, emissions of criteria air pollutants would be reduced.

Page 61:

The project activities involving diesel-operated equipment releasing DPM emissions would be temporary, occurring periodically over a more than four-year period, but the scheduled regulatory reductions of DPM emissions that begin in 2007 to lower the resultant health risk from DPM by 75 percent in 2010 would ~~may~~ further lower emissions from these sources if newer equipment is used. Although the exact amount of the DPM emissions reduction is not known, substantially greater reductions in DPM emissions are expected to occur for large on-road trucks than for off-road equipment.

Page 61 [Footnote 3]:

Although the project's on-site demolition equipment would be additional sources of DPM, the DPM that would reach off-site residences would be reduced by dispersion, due to the distance of the project site from these residences. As a net result, DPM concentrations from on-site equipment would be roughly 1/100 to 1/10 of the annual DPM concentrations from hauling, based on the amount of demolition equipment assessed and results of modeling described below.

Page 63:

The exterior siding of Building 51 was constructed with transite, a material typically containing approximately 20 percent non-friable chrysotile asbestos fibers. Given the age of Building 51 and demolition characterization surveys of the facility, ~~it is likely that~~ other parts of the building were also constructed using asbestos-containing materials. Since airborne asbestos poses a serious health threat, the demolition and removal of any potential asbestos-containing building materials would be handled according to LBNL's Asbestos Management Program, which is tailored to meet the requirements of BAAQMD Regulation 11, Rule 2: Hazardous Materials–Asbestos Demolition, Renovation and Manufacturing. This program includes standards of operation necessary to control asbestos emissions, and identifies any prior notification and permitting requirements. With adherence to this program, the exposure of the public and of the workers to airborne asbestos would be controlled and the impacts associated with exposure to airborne asbestos would be minimal. An asbestos demolition notification to the BAAQMD would be required; if regulated asbestos is present, an asbestos renovation notification would also be needed.

Page 63:

Since with the exception of the two small areas of ornamental landscaping at the entrance to Building 51, demolition activities would include no tree or shrub removal or damage to trees, and the ornamental landscaping to be removed does not represent appropriate habitat, there would be no potential for direct adverse effects on special-status nesting birds. However, there are a number of oak and conifer trees in close proximity to Building 51 on the slopes to the east and south of the building. These trees are located in a relatively narrow strip of vegetation between two developed areas and alongside Lawrence Road, which has regular daytime traffic flow, including heavy diesel trucks and buses moving up the grade to McMillan Road. The trees nevertheless may provide nesting habitat for special-status birds, as do other trees within a 500-foot radius of the Building 51 site, including oak, eucalyptus, and conifers. Some activities, most notably ~~and~~ noise generated by demolition under the Proposed Action, would have the potential to disturb any nesting raptors or other special-status nesting birds present in these trees. Such activities could result in the abandonment of special-status bird nests, eggs, or fledglings.

Page 69:

With the acceptance of the HAER report by NPS, DOE may demolish Building 51 provided that DOE contacts the Historic American Building Survey (HABS) division of NPS to determine what level and kind of recordation is required for the buildings, and that such documentation is completed and accepted by HABS prior to demolition. LBNL has consulted with NPS. The latter determined that an addendum to the HAER report would meet HABS requirements. The HAER addendum has been completed and ~~is currently being reviewed~~ was accepted by NPS in August 2006. ~~Demolition would not commence until NPS accepts the document.~~ For NEPA purposes, with the signed MOA, completion of

the HAER documentation, and approval of the HABS addendum by NPS, LBNL ~~will have~~ has adequately mitigated for the potential loss of Building 51. As an additional measure, LBNL plans to commemorate the scientific achievements attributed to the Bevatron with a monument and/or display listing the historic discoveries that occurred there.

Page 70:

Backfilling, grading, and other demolition activities associated with the project would require the removal of the shallow below-grade concrete foundation, and replacement of a portion of a retaining wall. In addition, there may be a need to excavate subsurface contaminated soil, although this quantity is anticipated to be small (approximately 200 cubic yards). The media cleanup standards and impact analysis would be consistent with those stated in the Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at LBNL Regulated under the Resources Conservation and Recovery Act (DOE/EA-1527). This soil would be removed from the Laboratory, and hauled to an appropriate off-site location for disposal. Clean backfill would be used to restore the site to the current grade. The backfill would be compacted and hydro-seeded.

Page 70:

Project-related activities that include removal of lead dust or asbestos building materials, cutting or removal of equipment or structural materials, or the processing and removal of concrete shielding blocks or slabs would involve substances that could be a hazard to workers, the public or the environment. Various types of hazardous materials would be encountered during demolition activities. About half of the truck trips that would transport materials for disposal off-site would carry non-hazardous construction debris and solid waste, and about half would carry some type of hazardous waste, low-level radioactive waste, or mixed waste. As described in Section 5.1.9, Public Utilities, of the truckloads carrying radioactive waste, the great majority would be of low activity, volume-contaminated items.

Page 72-73:

Prior to the start of excavation, the project management team would obtain information on known residual soil and groundwater contamination in the project area. The project management team would be responsible for ensuring that bid specifications disclose known locations and concentrations of hazardous chemicals in soil and groundwater that could be encountered by contractors. Any intrusive work in areas where contaminants are present would be performed by properly trained contractors with oversight by the project management team and assistance from the EH&S Division (e.g., for soil, water, or air monitoring or auditing). ~~If residual soil or groundwater contamination is encountered during demolition, it would be managed in accordance with applicable DOE and Berkeley Lab policies and state and federal regulations regarding hazardous material handling and hazardous waste management.~~ Residual chemical or radiological contamination, if any, would be addressed by the EH&S Division in consultation with the appropriate regulatory

agency. Newly discovered environmental releases of hazardous constituents will meet the notification and corrective action requirements in LBNL's Hazardous Waste Facility Permit (EPA ID. no. CA 4890008986), section IV.B. "Newly Identified Releases." Cleanup standards and methods will be consistent with LBNL's Environmental Assessment and Corrective Measures Study Report for Remediating Contamination at LBNL Regulated under the Resources Conservation and Recovery Act (DOE/EA-1527).

Page 74:

The actual quantities of water generated would depend on such variables as the type of equipment used to break concrete, the amount of water discharged from excavations, the amount of rainfall, and the elevation of the groundwater levels. This analysis assumes that demolition activities would continue through the winter and that stormwater management techniques would be used to reduce the contact of stormwater with residual contaminants at the demolition site.

Stormwater that could be contaminated by construction activity would be controlled by LBNL's Best Management Practices (BMPs). The BMPs used by LBNL are described in its ~~2002~~ 2006 sitewide Stormwater Pollution Prevention Plan (SWPPP). The specific details of the demolition process and the most effective BMPs for controlling surface runoff, preventing erosion, and maintaining adequate drainage at the Building 51 site will be developed by LBNL staff and contractors in project-specific SWPPPs as the specifics of the demolition activities are further defined. As required by the statewide General Construction Permit, the preparation and implementation of SWPPPs will ensure that pollutants would not enter the environment through uncontrolled runoff. On-going groundwater monitoring would not be disturbed.

Page 75:

Examples of BMPs that LBNL could require as part of the project, all but the last from the LBNL ~~2002~~ 2006 facility-wide SWPPP, include the following:

Page 76:

Stormwater runoff from the proposed site is currently discharged to the North Fork of Strawberry Creek. This condition would not change under the post-Building 51 site configuration. Following the demolition and removal of Building 51 and its foundation, the demolition zone would be converted to vacant space and hydro-seeded with native grasses. This would allow varying amounts of surface water to percolate into the ground rather than flow along the surface, especially early in the rainy season when soil conditions are not yet saturated. The percolation of surface water into the ground would slightly reduce the overall quantity of surface water runoff. Because the Proposed Action would cause stormwater runoff on the subject site either to be slightly reduced or to remain the same as under existing conditions, the impact on runoff rates and volumes discharged to the North Fork of Strawberry Creek would be negligible. In addition, BMPs followed by the

contractors would maintain the quality of re-water discharged to the North Fork of Strawberry Creek to acceptable levels.

Page 83:

An estimated maximum of about 4,700 one-way truck trips would be required over the four- to seven-year term of the Proposed Action [Footnote added:]

A schedule variant of the project could reduce the minimum duration of the project from four years to three and a half years, but for the reasons discussed here, this reduction in schedule would not increase the maximum haul truck traffic generation rates and therefore would not change the resulting traffic impacts and mitigation measures. See Appendix G.

Demolition work would be performed approximately 40 hours per week, Monday through Friday; normal work hours would be between 7:00 a.m. and 3:30 p.m. It is possible that some work, including truck loading and departure, would take place on Saturdays and/or Sundays, although this would be infrequent. [Footnote added:]

An alternative-sequence project variant that would demolish Building 51 before the disassembly and removal of the Bevatron itself would, for the reasons discussed here, not increase the maximum haul truck traffic generation rates and therefore would not alter traffic and traffic-related impacts and their mitigation measures. Analysis of the alternative-sequence project variant is included in Appendix G.

Page 93:

- User Support Building – This approved three-story, approximately 30,000-gross-square-foot building will consist of assembly space, support laboratories, and offices in support of the Advanced Light Source user facility at LBNL. This building will be constructed on the site previously occupied by Building 10 which was demolished during the summer of 2007. Construction is scheduled from mid 2008 to mid-2010.

- The Animal Care Facility (ACF) ~~would be~~ is an approximately ~~7,100~~ 5,005 gross square foot (gsf) one-story building located on the eastern side of Berkeley Lab, northwest of Building 83. The ACF ~~would~~ will replace the nearby existing 8,500 gsf animal care unit in Building 74, which is nearing obsolescence due to aging and unreliable mechanical equipment, and potential seismic inadequacy. If seismic upgrades are made to Building 74, the vacated space in that building likely would be converted to wet and dry laboratories and used for the same types of research activities, some of which already take place at Building 74 and others of which take place at other buildings at LBNL. ~~Construction activities would take place for a roughly one-year period, forecast at this time to occur between April 2006 and April 2007~~. The new ACF building has been completed, and is anticipated to be occupied in early 2008.

- An approximately 140' x 20' section of Cyclotron Road, the main road leading into Berkeley Lab from Hearst Avenue in Berkeley, California, would be widened to provide a visitor processing lane. The action would also include removing the existing guard kiosk and installing up to three new guard kiosks. The project was completed in 2006~~likely would begin in January and last through August 2006~~.

- The University of California ~~Berkeley Lab~~ is in the planning stage for the construction and operation of a new Guest House to serve visiting scientists, faculty and students. Many of

the visitors using the Lab's facilities - the Advanced Light Source, National Center for Electron Microscopy, 88" Cyclotron, and ~~in the future,~~ the Molecular Foundry - are from outside the Bay Area and must obtain short-term housing. ~~The Guest House would be a 25,000 gsf, three-story facility with approximately 60 guest rooms and would provide on-site, low-cost, short-term housing.~~ This proposed three-story, approximately 25,000-gross-square-foot building would hold up to 120 beds for visiting researchers and other guests of LBNL. An Initial Study/Negative Declaration was prepared and circulated in early 2007. The project was approved and construction will begin in 2008. The Guest House would be constructed near the Advanced Light Source, the Lab's largest user facility. The site designated for the Guest House is near the center of the Laboratory, west and southwest of Building 2 and on the site of the demolished Building 29 and Trailer 29D, and existing Trailers 29A, 29B, and 29C. ~~Construction activities would occur over a 17-month period, forecast at this time to occur between February 2007 and June 2008.~~ It would use existing utilities infrastructure in the vicinity.

Page 95-96:

- The Computational Research and Theory (CRT) Building would be a UC-funded, five-story, approximately 140,000 gross square foot computer and office building constructed near the Blackberry Gate entrance to the Lab's main site. It would provide high-end computing floor space and accompanying office space to support the Lab's National Energy Research Scientific Computing (NERSC) Center, which is currently operating within an off-site leased building. Construction would take place from approximately 2008 to 2011.

- The Helios Research Facility, a UCB project, would be a four-story, 160,000 gross square foot building constructed immediately south of LBNL buildings 66 and 62. The goal of the Helios Project is to accelerate the development of renewable and sustainable energy sources using sunlight. This would be achieved by developing fundamentally new and optimized materials for use in collectors, and by creating more efficient processing steps and energy handling. Construction would take place from approximately 2008 to 2011.

- The environmental analyses assumed no more than one million gsf of construction would be underway at any one time within the Campus Park, Adjacent Blocks, Southside and Hill Campus land use zones, which ~~is~~ are approximately equal to the maximum level of construction that was underway at the time the Existing Setting data were collected in 2002 and 2003. Thus, the aggregate effects of the maximum level of construction foreseen under the UC Berkeley 2020 LRDP are already reflected in the existing setting.

  The UC Berkeley 2020 LRDP EIR also included a project-level analysis of the Chang-Lin Tien Center for East Asian Studies. The proposed Center includes two buildings: Phase 1, a four-story building of approximately 67,500 gsf, and Phase 2, a building planned to accommodate up to 43,000 gsf. At this point in time, Phase 1 is the only project that has received funding to proceed. ~~Construction for Phase 1 is underway and scheduled to continue until Fall 2007 (Shaff, 2005).~~ Construction for Phase 1 is underway ~~and scheduled to continue until Fall 2007~~ (Shaff, 2006).

- UC Berkeley plans to implement seven projects, referred to as the Southeast Campus Integrated Projects (SCIP). SCIP includes seismic and program improvements at the California Memorial Stadium, including a 158,000-gsf athletic training center and 102,000 gsf of additional new academic and support space at the stadium. ~~The SCIP include seismic and program improvements at the California Memorial Stadium; construction of a parking structure and sports field at the current site of Maxwell Family~~

~~Field; construction of an 180,000 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 the Piedmont Avenue houses (five structures and site environs from 2222 to 2240 Piedmont Avenue). UC Berkeley has just begun the environmental analysis of the SCIP; the SCIP EIR will be tiered from the 2020 LRDP and LRDP EIR.~~ The SCIP Final EIR, which was tiered from the UC Berkeley 2020 LRDP and LRDP EIR, was completed in October 2006. The SCIP EIR identified significant, unavoidable impacts in the areas of aesthetics (effects on the character of Gayley Road and on views from Panoramic Hill); cultural resources (changes to Memorial Stadium, demolition of several structures, and alterations to buildings and landscape along Piedmont Avenue); geology (earthquake risk); noise (due to construction and demolition and due to the potential for additional events at the stadium); traffic (effects at the Durant/Piedmont and Bancroft/Piedmont intersections); and utilities and service systems (increased demand on wastewater facilities) (UC Berkeley, 2006). Project construction for all of the projects is not definite at this time, but is expected to begin in ~~winter 2006/~~2008 and be completed in 2012 (UC Berkeley, 2005c).

Page 96:

- UC Berkeley proposes to construct and operate an Early Childhood Education Center, serving up to 78 children, on the north side of Haste Street, mid-block between Dana and Ellsworth Streets, in Berkeley, California. The 17,880 square foot project site is adjacent to a large campus parking lot. The project site itself is presently used as a surface parking lot with 53 marked vehicle spaces (UC Berkeley, 2005a). Construction of this facility is underway ~~and is scheduled to end January 2007~~. (Shaff, 2006)

- As part of UC Berkeley's Northeast Quadrant Science and Safety (NEQSS) Projects, demolition of the former Stanley Hall took place in Spring 2003. The new Stanley Hall is currently under construction and ~~is~~ was completed in 2007 ~~scheduled to be completed in mid-2006~~. The new facility ~~will be~~ is located at the East Gate of the campus next to the Hearst Memorial Mining Building and ~~will be~~ is eight stories above ground with three basement levels, and ~~will~~ measures approximately 285,000 gsf (UC Berkeley, 2005b).

- The Center for Information Technology Research in the Interest of Society (CITRIS) Headquarters project is part of UC Berkeley's NEQSS projects. The demolition of Davis Hall North, located in the north east section of the Berkeley campus near the intersection of Hearst and LeRoy Avenues, began at the end of August 2004 to make way for a replacement facility that will provide the headquarters for CITRIS and is designed to contain about 79,420 assignable square feet within a total area of 142,000 gsf. Construction of the new CITRIS Headquarters facility is underway ~~expected to begin Spring 2006~~ and scheduled to continue through 2009 (UC Berkeley, 2005b; UCOP, 2002; Shaff 2006).

- UC Berkeley plans to retrofit the Bancroft Library, which is located in the central portion of the campus to the north of Wheeler Hall between South Hall Road and Sather Road. The project will also include some program improvements. Construction for this project is underway and expected to ~~begin in Spring 2006 and~~ continue ~~for approximately 18 months~~ through ~~September 2007~~ 2008 (Shaff, 2006).

- UC Berkeley plans to construct an Americans with Disabilities Act-compliant pedestrian bridge to connect the north and south components of the Foothill housing project. As currently proposed, the pedestrian bridge would be constructed over Hearst Avenue, just east of Gayley Road, connecting the two sides of the Foothill dormitories and would

provide access between the dormitories and campus. The Foothill Bridge ~~should begin construction in December 2006 and be~~ was completed in ~~February~~ September 2007.

Page 99:

UC Berkeley's Final EIR for the Southeast Campus Integrated Projects (SCIP) (SCIP; see Chapter VI of the DEIR) ~~SCIP Initial Study/Notice of Preparation~~ identifies a number of historic resources that could be affected by that project. These include the Cheney House and Cheney Cottage at 2241 and 2243 College Avenue, the Piedmont Avenue Houses at 2222, 2224, 2232, 2234 and 2240 Piedmont Avenue, and California Memorial Stadium. A CEQA EIR ~~will be~~ was prepared to confirm the historic status of these buildings and to identify potential impacts to them resulting from the SCIP. ~~If significant impacts to these buildings are identified as a result of the EIR process for the SCIP, it is expected that, in consultation with the State Historic Preservation Officer, mitigation measures would be identified to eliminate or reduce the severity of such impacts to the extent feasible.~~ The EIR identified significant impacts to these buildings and also identified mitigation measures to eliminate or reduce the severity of such impacts to the extent feasible. ~~In addition, potential~~ Impacts resulting from ~~the~~ SCIP would not combine with the proposed undertaking to form a substantial cumulative impact to historic resources, due to the vastly different building types involved (i.e., residential structures and a sports stadium compared with a building that houses a particle accelerator), as well as differing architectural styles and dates of construction. To the extent they might adversely affect historic resources, the projects involved would not be "closely related" (CEQA Guidelines Sec. 15355(b)) enough to contribute to any cumulative impact, because of, by virtue of the substantially different historic resources involved, to contribute to any cumulative impact.

Page 100:

Both the Bevatron and the Crocker facility accelerator are cyclotron accelerators, however, the Crocker accelerator is currently operational, and is not threatened with demolition or substantial alteration. ~~While both the Bevatron and the Crocker facility accelerator are both cyclotron accelerators (one inoperable and the other operable) and therefore~~ Although the two share the same compact form, the Crocker ~~Nuclear Laboratory~~ accelerator is contained within a mid-1960s modern, four-story office/classroom/laboratory building which bears no architectural resemblance to Building 51, which has a more industrial aesthetic.

Page 103-104:

The approved User Support Building would not contribute to peak-hour AM and PM traffic conditions, as construction trips would be limited to off-peak hours. The latter 11 months of the proposed Guest House construction could coincide with the initial activity phase of the Bevatron project. This would not be cumulatively considerable, as the later construction phases of the moderately-sized Guest House would include relatively few truck trips, as most of the building material would be transported during the earlier phases. The CRT and Helios Buildings would likely coincide with the first two years of the Bevatron project,

however it is not expected that new cumulatively considerable impacts would result. Those projects will be tiered from the new 2006 LRDP and EIR, which impose restrictions and management practices on new construction projects to avoid and minimize cumulative construction traffic from LBNL during peak commute hours.

Page 104:

~~Although still within the planning stage,~~ It is anticipated that construction of the Guest House would overlap with the Proposed Action. Mitigation measures applicable to construction traffic included as part of the Proposed Action would also apply to construction of the Guest House, and would reduce the likelihood of important cumulative effects.

With respect to the potential cumulative traffic effects of UC Berkeley's proposed SCIP, construction and thus construction-related traffic from the SCIP Memorial Stadium renovation and the other six projects (including a parking structure, a new Law/Business school building, and renovations to existing law school, business school, and student residential buildings) would overlap with the Proposed Action. ~~However, it is speculative to attempt to determine the nature and degree of the SCIP traffic impacts at this time; this information will be developed during the preparation of SCIP EIR.~~ The projects would be within the growth envelope analyzed in UC Berkeley's 2020 LRDP EIR, and would result in space and population levels below levels anticipated in UC Berkeley's 2020 LRDP. ~~Also, because the SCIP EIR will be tiered under UC Berkeley's 2020 EIR, it will incorporate all of the traffic mitigation measures of the 2020 LRDP EIR and incorporate any added measures necessary to mitigate, insofar as is feasible, the direct (and therefore, also the cumulative) traffic impacts of the SCIP.~~ The Final EIR for SCIP finds that cumulative transportation impacts would be consistent with the transportation impacts identified in the UC Berkeley 2020 LRDP EIR (UC Berkeley, 2006). Because those impacts are assumed as part of the cumulative development assumptions incorporated into this section, no additional cumulative transportation impacts would result from the proposed Building 51 project in combination with cumulative development.

In any case, the incorporation of mitigation included as part of the Proposed Action (please see the Executive Summary, page 6), would ensure that traffic-generating activities associated with concurrent projects would not have an important effect on traffic conditions. In addition, the potential impact of exposure to hazardous materials during transportation to off-site facilities would be negligible, and the Proposed Action would not result in a substantial cumulative impact, because the Proposed Action would not combine with other projects to create a substantial risk due to transport of hazardous materials.

Page 111:

~~University of California, Berkeley (UC Berkeley), *Southeast Campus Integrated Projects Notice of Preparation Tiered, Focused Environmental Impact Report*, November 14, 2005c.~~

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