

4.4 Cultural Resources

4.4.1 Introduction

This section evaluates the potential impacts to cultural resources (historical and archaeological) associated with implementation of the proposed Computational Research and Theory (CRT) project. Information presented in the discussion and subsequent analysis was based on information from technical studies prepared for the project area, including archival research at the California Historical Resources Information System's Northwest Information Center conducted for the entire Lawrence Berkeley National Laboratory (LBNL) site; a cultural resources evaluation and survey completed by Archaeological Research and Services in 1986; an archaeological survey report (Kielusiak 2000); and the first of a series of reports being prepared by D.W. Harvey (Harvey 2003) of the Pacific Northwest National Laboratory as a part of an inventory and evaluation of potential historically significant buildings and structures at LBNL, and the LBNL 2006 LRDP EIR.

In response to the Notice of Preparation for this EIR, one commenter stated that the Berkeley Lab should evaluate the project's impact on the Strawberry Canyon cultural landscape. The project is located in an area known as Blackberry Canyon, which is near Strawberry Canyon. A cultural landscape is defined by the National Park Service as "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person exhibiting other cultural or aesthetic values. There are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designated landscapes, historic vernacular landscapes, and ethnographic landscapes." Although not necessarily required for California Environmental Quality Act (CEQA) evaluation purposes, cultural landscape information in the standard National Park Service format would typically include a history of the use and development of an important landscape, including a cultural landscape chronology, identification of its potential boundaries, and a description of the character defining features of the landscape. Strawberry Canyon has not been the subject of such a study to date and has not been designated a cultural landscape by the City of Berkeley Landmarks Preservation Commission or the State Historic Preservation Officer, and it is not clear what historic event, activity, or person would be the basis for significance of the area as a cultural landscape. Furthermore, at this time the City does not have an ordinance to designate cultural landscapes, the canyon has not been recorded or nominated to the National Register or California Register as a cultural landscape, and it is not clear that it has characteristics that would warrant such nomination or would make it eligible for listing. If the property were nominated to the California Register of Historical Resources (CRHR) or National Register of Historic Places (NRHP), the State Historical Resources Commission (and National Park Service for federal nominations) would be the agency to determine whether the property meets the criteria. If

Strawberry Canyon is designated as a cultural landscape in future, LBNL will take such designation into account in future planning, as required by CEQA. Note that the Canyon area has been the site of numerous and changing research, recreational and land management activities of the University of California, as well as residential and other development activities on private properties. The proposed project is consistent with this existing and ongoing pattern of development in the area.

4.4.2 Environmental Setting

Early Regional and Local History

Native Americans began to occupy the present-day Northern California (i.e., San Francisco Bay region) around 2,000 B.C. Linguistic evidence suggests that the Native Americans that lived in the area spoke Chochenyo, one of the Costanoan¹ languages. In 1770, the Costanoan-speaking people lived in approximately 50 separate and politically autonomous nations or tribelets. Records from early Spanish diaries document a number of small villages along the foothills of the East Bay area. A settlement named Huchium may have been situated in the general vicinity of the present city of Berkeley as indicated by ethnographic sources (Kroeber 1925). During the mission period, 1770 through 1835, the Costanoan people experienced cataclysmic changes in almost all areas of their lives, particularly a massive decline in population due to introduced diseases and declining birth rate. Following the secularization of the missions by the Mexican government in the 1830s, most Native Americans gradually left the missions to work as manual laborers on the ranchos that were established in the surrounding areas. In the project region (i.e., Alameda County), Native American archaeological sites tend to be situated along ridgetops, midslope terraces, alluvial flats, near ecotones,² and near sources of water including springs (LBNL 2007).

In 1820, Sergeant Luis Peralta obtained Mission San Antonio, the present-day sites of the cities of Oakland, Berkeley, and Alameda. The land was later (in 1842) divided among his four sons. In 1860, the University of California was established as the College of California on 160 acres. Four years later in 1864, a Homestead Association was established in the adjacent areas. These actions led to increased development in the vicinity of the University and incorporation of the town of Berkeley in April 1878. During this time, the present-day LBNL site was largely undeveloped, and remained so until the late 1930s (LBNL 2007).

¹ “Costanoan” is derived from the Spanish word Costanos meaning “coast people.” No native name of the Costanoan people as a whole existed in prehistoric times as the Costanoan were neither a single ethnic group nor a political entity.

² An “ecotone” is defined as the zone of transition between adjacent ecological systems, having a set of characteristics uniquely defined by space and time scales and by the strength of interactions between them.

Development of Lawrence Berkeley National Laboratory

Lawrence Berkeley National Laboratory was founded in 1931 as the University of California Radiation Laboratory on the UC Berkeley main campus. The Radiation Laboratory (the former Civil Engineering Test lab) was established as an accelerator laboratory by UC President Robert Gordon Sproul for physics professor Ernest Orlando Lawrence. A couple of years earlier (in 1929), on the UC Berkeley campus, Lawrence had built the world's first cyclotron, a 4-inch circular particle accelerator. With the establishment of the Radiation Laboratory, Lawrence and his associates had the opportunity to expand their research. Further expansion of the physical size of the Laboratory's hill site during World War II was partly due to an increase in nuclear fission research, which prompted the need for higher-energy accelerators and more room for locating them. Growth of the hill site is also attributed to the fame and publicity Lawrence received for the Nobel Prize, which helped to attract research funding (LBNL 2007).

Previous Site-Wide Studies

As part of the environmental analysis for the 1987 LRDP EIR, as amended, all undeveloped land and then-proposed building locations were examined for potential historical and archaeological resources. All reasonably accessible parts of the LBNL area were examined with special attention given to areas of relatively flat land or rock outcrops. The steep hillsides were not examined intensively, although transects were made through accessible areas. Based on the findings of the historic and archaeological resources survey, no indications of historic or prehistoric archaeological resources were encountered in any location at the project site. Based on this survey, LBNL was not determined to be eligible for listing on the NRHP (LBNL 2007).

Current Studies of Historical Resources

To evaluate the potential for historically significant buildings or structures, LBNL retained the Pacific Northwest National Laboratory team of licensed cultural resource professionals to conduct field surveys and historic research at LBNL. In coordination with LBNL, the U.S. Department of Energy (DOE), and the State Office of Historic Preservation, the team is systematically investigating and reporting on all buildings and structures at the Lab. The team is currently in the process of completing a series of reports to identify, survey, and evaluate approximately 245 buildings and structures at the LBNL site for potential eligibility for listing in the National Register. These studies have been undertaken pursuant to Section 110 of the National Historic Preservation Act, which requires that federal agencies, such as DOE, survey the lands under their control and evaluate all historic properties (including buildings and the equipment contained therein) for eligibility for listing in the National Register. When completed, these reports will be submitted to the State Historic Preservation Officer for concurrence.

Current Studies of Archaeological Resources

Field surveys and archival research at the California Historical Resources Information System's Northwest Information Center have been undertaken to determine whether any archaeological resources have been discovered at LBNL. The Northwest Information Center has indicated there is a "low potential for Native American sites in the project area" and thus "a low possibility of identifying Native American or historic-period archaeological deposits in the project area." Additionally, field studies conducted at various times at LBNL have not encountered any archaeological resources. Native American archaeological sites in this portion of Alameda County tend to be situated on terraces along ridgetops, midslope terraces, alluvial flats, near ecotones, and near sources of water, including springs. LBNL is situated on a steep slope adjacent to Strawberry Creek. Therefore, there is a low-to-moderate potential for Native American sites to be present on the project site (LBNL 2007).

4.4.3 Regulatory Considerations

National Register of Historic Places

The National Register of Historic Places is the nation's central inventory of known historic resources. The National Register is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. There are three different officials that can nominate properties into the National Register of Historic Places; the State Historic Preservation Officer of the state in which the property is located, the Federal Preservation Officer for federally owned or controlled property, or the Tribal Preservation Officer for tribally owned property. In order to be considered eligible for listing in the National Register as a significant historic resource, a structure, site, building, district, or object must be at least 50 years old or "exceptionally important."

State Office of Historic Preservation

The State Office of Historic Preservation maintains the CRHR, an authoritative listing of the state's significant historic resources as well as architectural, archaeological, and cultural resources. The California Register includes properties listed in or formally determined eligible for the National Register, pursuant to Section 4851(a) of the Public Resources Code, and lists selected California Registered Historical Landmarks. The State Office of Historic Preservation also maintains the Directory of Properties in the Historic Property Data File; however, properties on the Property Data File are not protected or regulated.

The State Office of Historic Preservation sponsors the California Historical Resources Information System (CHRIS), a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership among the citizens of California, historic preservation professionals, 11 information centers, and various agencies (Office of Historic Preservation 2003). CHRIS provides an integrated database that furnishes site-specific archaeological and historical resources information on known resources and surveys to government, institutions, and individuals. CHRIS also supplies a list of qualified consultants. Information for the project area is available through CHRIS's Northwest Information Center.

Local Plans and Policies

2006 LRDP Principles and Strategies³

The "Vision" section of the 2006 LRDP proposes fundamental principles that form the basis for the LRDP's development strategies. The main principle most applicable to the cultural resource aspects of new development are to "Preserve and enhance the environmental qualities of the site as a model of resource conservation and environmental stewardship." Development strategies provided by the 2006 LRDP are intended to minimize potential environmental impacts on valued cultural resources that could result from implementation of the 2006 LRDP.

LBNL Design Guidelines

The LBNL Design Guidelines were developed in parallel with the 2006 LRDP and provide specific guidelines for site planning, landscape and building design as a means to implement the 2006 LRDP's development principles as each new project is developed. Specific design guidelines are organized by a set of design objectives that essentially correspond to the strategies provided in the 2006 LRDP. The LBNL Design Guidelines provide the following specific planning and design guidance for the cultural resource aspects of new development to achieve these design objectives.

The design guidelines would be applied to the proposed project as part of the 2006 LRDP program. As part of the design review and approval process, the proposed project would be evaluated for adherence to the LRDP Land Use Map, the design guidelines, the Building Heights Map, and any other relevant plans and policies. Approvals would be subject to satisfactory compliance with these provisions. Design

³ While this Environmental Impact Report presents a "stand alone" impact analysis that does not rely upon tiering from any programmatic CEQA document, Berkeley Lab does actively follow the 2006 Long Range Development Plan (LRDP) as a planning guide for Lab development. Accordingly, relevant 2006 LRDP principles, strategies, and design guidelines are identified in this section.

objectives that are contained within the design guidelines and applicable to the cultural resource analysis include the following:

- Complement building aesthetics and enhance visual value through creation of land form elements that are consistent with design on the Hill. Mass and site buildings to minimize their visibility and to “ensure each building contributes to a cohesive and coherent architectural expression through the Laboratory site.”
- Each Research Cluster, because of topography, historic buildings, plant palette, and so on will develop a unique identity.
- Preserve the Hill’s rustic landscape through provision of screening landscape elements for large buildings and the integration of buildings into the overall landscape using appropriate materials.
- There are many interesting historic objects scattered around the Lab. These artifacts are important reminders of the Lab’s legacy as well as items of interest which stimulate interaction. Placement of these artifacts at major pedestrian nodes and at prominent locations in each commons is encouraged.
- Designers shall examine the architectural precedents, especially of historic buildings, present in the Research Cluster where their project is to be located. A clear rationale based on precedent for the architectural expression of each project will be developed.

City of Berkeley General Plan

The Urban Design and Preservation Element of the City of Berkeley General Plan contains policies relating to the development and preservation of cultural resources in the city. The City of Berkeley does not list as facilities at LBNL as a historical resource (City of Berkeley 2002). The Urban Design and Preservation Element policies pertaining to the proposed LRDP are as follows:

Policy UD-5 Architectural Features: Encourage, and where appropriate require, retention of ornaments and other architecturally interesting features in the course of seismic retrofit and other rehabilitation work.

Policy UD-6 Adaptive Reuse: Encourage adaptive reuse of historically or architecturally interesting buildings in cases where the new use would be compatible with the structure itself and the surrounding area.

Policy UD-10 The University of California: Strongly support actions by the University to maintain and retrofit its historic buildings, and strongly oppose any University projects that would diminish the historic character of the campus or off-campus historic buildings.

Policy UD-36 Information on Heritage: Promote, and encourage others to promote, understanding of Berkeley's built and cultural heritage, the benefits of conserving it, and how to sensitively do that.

City of Berkeley Landmarks Preservation Ordinance

The City of Berkeley's Landmarks Preservation Ordinance, adopted in 1974, requires the City to establish a list of potential buildings that should be considered for landmark, historic district, or structure of merit status. The ordinance provides a procedure for designating properties as landmarks and for reviewing proposed physical changes to landmark buildings. The City Council and City staff appoints a Landmarks Preservation Commission that administers the ordinance. In order for buildings to be designated as landmarks or as structures of merit, buildings must meet criteria for consideration set forth in the ordinance. The criteria consist of three levels of designation for historic buildings: properties of exceptional significance (landmarks), structures of merit, and properties that do not meet landmark criteria but are worthy of preservation as part of a neighborhood, block, or street front. In late 2006, the Bevatron site, but not its housing structure (Building 51) or any of its equipment, was designated as a City of Berkeley landmark and the City of Berkeley has requested that a marker or monument be placed to acknowledge the scientific research done at the site. No other structures at the LBNL main site are listed as City of Berkeley historical resources.

City of Oakland General Plan

The Oakland General Plan Historic Preservation Element, adopted in 1994 and revised in 1998, identifies several categories of historical resources. Designated Historic Properties include three classes of City Landmarks (1 through 3, in declining order of importance); two classes of Preservation Districts (Areas of Primary Importance and Areas of Secondary Importance); and Heritage Properties, which are historic resources (designated by the Landmarks Preservation Advisory Board or Planning Commission) that are not Landmarks or Preservation Districts.⁴ The Element also defines a category of Potential Designated Historic Properties (PDHPs), which are those properties that have an existing or contingency rating of "A" (highest importance), "B" (major importance), or "C" (secondary importance) in either the Oakland Cultural Heritage Survey (OCHS), a project of the City's Planning Department, or the Reconnaissance Survey, or have been determined by the surveys to contribute (or potentially contribute, based on

⁴ Eligibility requirements for designation as a Heritage Property include an existing or contingency Oakland Cultural Heritage Survey (OCHS) rating of A, B, or C; an existing or contingency Reconnaissance Survey rating of A or B; or is a contributor (or potential contributor based on contingency rating) to a potentially eligible Preservation District. The Heritage Property category was developed in the Historic Preservation Element to replace the City's Preservation Study List. However, as of 2006, the City has not initiated designation of a list of Heritage Properties.

contingency rating) to an Area of Primary Importance or Area of Secondary Importance. PDHPs are so identified by their survey rating; unlike Designated Historic Properties, PDHPs are not formally designated by any City body. None of the facilities at LBNL or in its vicinity are listed as a City of Oakland historical resource.

Historic Preservation Element goals and policies applicable to the 2006 LRDP include the following:

Historic Preservation Goal 2: To preserve, protect, enhance, perpetuate, use, and prevent the unnecessary destruction or impairment of properties or physical features of special character or special historic, cultural, educational, architectural or aesthetic interest or value. Such properties or physical features include buildings, building components, structures, objects, districts, sites, natural features related to human presence, and activities taking place on or within such properties or physical features.

Policy 3.1 Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions: The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary City actions.

Policy 3.5 Historic Preservation and Discretionary Permit Approvals: For additions or alterations to Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that (1) the design matches or is compatible with, but not necessarily identical, to the property's existing or historical design; or (2) the proposed design comprehensively modifies and is at least equal in quality to the existing design and is compatible with the character of the neighborhood; or (3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

For any project involving complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that (1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or (2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or (3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

Policy 3.8 Definition of "Local Register of Historical Resources" and Historic Preservation "Significant Effects" for Environmental Review Purposes: For purposes of environmental review

under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historic Resources:

- 1) All Designated Historic Properties, and
- 2) Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.
- 3) Until complete implementation of Action 2.1.2 (Redesignation), the "Local Register" will also include the following designated properties: Oakland Landmarks, S-7 Preservation Combining Zone properties, and Preservation Study List properties.

4.4.4 Impacts and Mitigation Measures

Significance Criteria

The impact of the proposed project on cultural resources would be considered significant if it would exceed the following Standards of Significance, in accordance with Appendix G of the CEQA Guidelines and the UC CEQA Handbook:

- Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Issues Not Discussed Further

The CRT Facility Initial Study determined that implementation of the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. This issue is not discussed further in this section.

Mitigation Measures included in the Proposed Project

The following mitigation measures, adopted as part of the 2006 LRDP, are required by the LRDP for the proposed project and are thus included as part of the proposed project. The analysis presented below evaluates environmental impacts that would result from project implementation following the application of these mitigation measures. The mitigation measures that are included in the proposed

project would be monitored pursuant to the Mitigation Monitoring and Reporting Plan that will be adopted for the proposed project.

LRDP MM CUL-3: If an archaeological artifact is discovered on site during construction under the proposed LRDP, all activities within a 50-foot radius shall be halted and a qualified archaeologist shall be summoned within 24 hours to inspect the site. If the find is determined to be significant and to merit formal recording or data collection, adequate time and funding shall be devoted to salvage the material. Any archaeologically important data recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of finding that meets professional standards.

LRDP MM CUL-4: In the event that human skeletal remains are uncovered during construction or ground-breaking activities resulting from implementation of the 2006 LRDP at the LBNL site, CEQA Guidelines Section 15064.5(e)(1) shall be followed:

- In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
 - (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
 - (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
 - (B) If the coroner determines the remains to be Native American: (1) The coroner shall contact the Native American Heritage Commission within 24 hours; (2) The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American. (3) The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
 - (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

- (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission;
- (B) The descendant identified fails to make a recommendation; or
- (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

Project Impacts and Mitigation Measures

CRT Impact CUL-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5. (Less than Significant)

The project site does not include any existing buildings, and the existing Building 50 stairway, which would be altered to accommodate pedestrians to the CRT facility, is not currently listed on any National or State Register. Furthermore, the stairway structure was built in the last 50 years, and is not likely to be considered “exceptionally important,” so is not likely eligible for the National Register of Historic Places or the State Office of Historic Preservation. Therefore, no project-level impact resources would occur, and the project would not contribute to the loss of any historic resources.

As discussed in the introduction of this chapter, the project site is located in Blackberry Canyon, outside the Strawberry Canyon area, and Strawberry Canyon has not been designated as a cultural landscape. There would therefore be no impacts related to alteration of a cultural landscape.

Mitigation Measure: No project-level mitigation measure required.

CRT Impact CUL-2: The proposed project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5. (Less than Significant)

Most of the surrounding area of the project site has been subject to extensive excavation for surrounding buildings and infrastructure. However, based on archival research from the Northwest Information Center and the project’s proximity to the North Fork of Strawberry Creek and Cafeteria Creek (a tributary to Strawberry Creek), the potential for Native American sites to exist on the project site is considered moderate and undiscovered archaeological resources could be discovered during construction. In the event of the discovery of any archaeological resources during construction, LRDP Mitigation Measure

CUL-3, which is included in the proposed project and involves work stoppage and appropriate treatment and Native American involvement, would be implemented. As a result, the proposed project would result in a less than significant impact on archaeological resources.

Mitigation Measure: No project-level mitigation measure required.

CRT Impact CUL-3: The proposed project would not disturb any human remains, including those interred outside of formal cemeteries. (Less than Significant)

As discussed above under the CRT Impact CUL-2, based on archival research from the Northwest Information Center, there is a moderate potential that undiscovered archaeological resources could be discovered during construction activities. These undiscovered archaeological resources could include human remains, including those interred outside of a formal cemetery. However, with the implementation of LRDP Mitigation Measure CUL-4, which is included in the proposed project, in the event that human remains are discovered during construction activities, all construction activities would be halted and a qualified archaeologist would be summoned within 24 hours to inspect the site. In addition, the mitigation measure would assure that any human remains, include those interred outside of formal cemeteries, are handled and preserved without further disturbance and maintaining appropriate dignity.

Mitigation Measure: No project-level mitigation required.

4.4.5 References

- City of Berkeley. 2002. City of Berkeley General Plan, Urban Design and Preservation Element, Figure 25: City-Designated Landmarks, Structures of Merit and Districts as of November 2001, adopted April 23.
- Dobkin, M. and M. Corbett. 1992. Final Historic Architectural Evaluation of Building 7, Lawrence Berkeley Laboratory, University of California, November.
- Harvey, D.W. 2003. Identification and Evaluation of Old Town Buildings, Ernest Orlando Lawrence Berkeley National Laboratory, January.
- Kielusiak, C. 2000. Archaeological Survey of 70 Acres of Land and Recordation and Evaluation of Four Historic Resources at the Lawrence Berkeley National Laboratory, February.
- Kroeber, A.L. 1925. Handbook of the Indians of California. Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, DC (Reprint by Dover Publications, Inc., New York, 1976).
- Lawrence Berkeley National Laboratory. 2007. 2006 Long Range Development Plan Final Environmental Impact Report, SCH No. 200102046, July.

Northwest Information Center. 2003. Records Search for Lawrence Berkeley National Laboratory, December.

Office of Historic Preservation, State of California. 2003. Historic Properties Listing, by City (through June 2003). State of California Office of Historic Preservation, Sacramento, CA.