EXECUTIVE SUMMARY

PURPOSE

The EIR evaluates the potential for significant environmental impacts from the construction and operation of the Solar Energy Research Center project (SERC project) proposed by the University of California Lawrence Berkeley National Laboratory (UC LBNL). It is the intent of this Executive Summary to provide the decision makers, responsible agencies, and the public with a clear, simple, and concise description of the proposed project and its potential significant environmental impacts. Section 15123 of the *California Environmental Quality Act (CEQA) Guidelines* requires that the summary identify each significant effect, recommended mitigation measure(s), and alternatives that would minimize or avoid potential significant impacts. The summary is also required to identify areas of controversy known to the lead agency, including issues raised by agencies and the public and issues to be resolved. These issues include the choice among alternatives and whether or how to mitigate significant effects. This section focuses on the major areas of importance in the environmental analysis for the proposed project and utilizes non-technical language to promote understanding.

PROJECT LOCATION

The approximately 1.5-acre SERC project site is located in the central portion of the LBNL hill site. LBNL is located east of the University of California, Berkeley, within the cities of Berkeley and Oakland. The project site, in the Berkeley portion of LBNL, is generally located south of McMillan Road in the "Old Town" area at the current location of Buildings 25A, 44, 44A, and 44B. These buildings are expected to be decontaminated and demolished as part of the approved Old Town Demolition and Environmental Restoration project prior to commencement of construction of the SERC project. Surrounding research facilities include the Advanced Light Source, which is a national user facility that generates intense light for scientific and technological research, and the proposed General Purpose Laboratory which would be built at the site of Building 25/25B. Other buildings in the general vicinity of the proposed SERC facility, specifically Buildings 4, 5, 14, 16, 40, 41, and 52 are also planned to be demolished under the Old Town Demolition and Environmental Restoration project. The project site is located on a ridge that separates the Strawberry Canyon and Blackberry Canyon watersheds. Scenic views of the San Francisco Bay to the west are available from the site. The LBNL 2006 Long Range Development Plan (LRDP) designates the site for Research and Academic uses.

PROJECT DESCRIPTION

The SERC project consists of an approximately 40,000-gross-square-foot (gsf) research facility focused on developing fuels from sunlight. The goal of SERC is to develop the science and technology that would allow the use of sunlight alone as the energy source to create fuels from water and atmospheric carbon dioxide. There are several fuels that might be generated from this research, including hydrogen, hydrocarbons, ethanol, and methanol. The proposed project includes the following components:

- An approximately 40,000 gsf research building. The building has been designed to meet UC Policy on Sustainable Practices with a goal of achieving a LEED Gold rating;
- Reconfiguration of approximately 200 linear feet of the service road (Medical Road) to the west of the proposed project; and
- Reconfiguration of existing parking areas.

If the General Purpose Laboratory, which is part of the approved Seismic Phase 2 project, is not constructed prior to the SERC project, the SERC project would also include the following improvements:

- Reconfiguration of the eastern and southern segments of the Medical Road loop;
- Storm drainage and natural gas improvements to the southeast of the project site;
- Wastewater disposal and electrical improvements to the southwest of the project site; and
- Electrical connections to the southwest of the project site.

The proposed building would be a three-story facility with three components: a plinth[1] that would be partially buried to minimize the building mass, a glazed office floor acting as a "breezeway" atop the plinth, and a space housing chemistry laboratories on the top level. The highest point of the building would be about 50 feet above the main entry level.

The building would accommodate approximately 60 employees. Approximately 50 people would be relocated to the SERC facility from other locations within LBNL or UC Berkeley, and there would be approximately 10 new people that would be at the LBNL hill site as a result of project implementation.

Project construction is anticipated to occur over a two-year period beginning in mid-2011 and continuing through mid-2013.

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1 The plinth is the solid base for anchoring the building.

PROJECT OBJECTIVES

Key objectives of the proposed project are to:

- Consolidate existing LBNL and UC Berkeley solar energy research programs in one facility in close proximity to the unique user facilities at the LBNL hill site that will be used by the SERC program researchers, in partnership with the researchers currently located in those LBNL facilities, including the National Center for Electron Microscopy, the Molecular Foundry, the Advanced Light Source and the proposed computing facilities of NERSC;

- Locate the SERC facility so as to optimally draw upon the intellectual, technological, and material resources of the Department of Energy LBNL programs and facilities, the primary focus of which is energy research;

- Minimize travel between the UC Berkeley campus and the LBNL hill site to allow SERC researchers to conduct research at LBNL while maintaining their teaching and research activities on the UC Berkeley campus;

- Avoid duplication of facilities and remove the physical constraints to intellectual exchange and collaboration that has resulted from the dispersed program locations; and

- Provide an integrated, economical, and appropriately designed facility for high-level research in solar energy sources and technologies that will become a benchmark for energy-efficiency in future similar building types.

IMPACT SUMMARY

A detailed discussion regarding potential impacts is provided in **Section 4.0, Environmental Setting, Impacts, and Mitigation Measures** of the Draft EIR. A summary of the project's impacts is provided in **Table ES-1, Summary of Impacts and Mitigation Measures**, presented at the end of this section. All project-level impacts of the proposed project would be less than significant and no mitigation measures are required. All cumulative impacts with the exception of one impact would also be less than significant. The project would contribute to a significant cumulative impact related to traffic. The EIR conservatively concludes that the project's contribution would be cumulatively considerable. All available mitigation measures have been included in the project. However, the cumulative impact would remain significant because it is not within the jurisdiction of the University to implement the necessary mitigations.

ALTERNATIVES TO THE PROPOSED PROJECT

The alternatives evaluated in this EIR focus on avoiding or further reducing potentially significant cumulative impacts related to traffic. Project alternatives include the following:

Alternative 1: No Project Alternative. This alternative assumes the proposed project would not be constructed at the proposed site, and that the site would remain vacant following demolition of the existing buildings under the Old Town Demolition and Environmental Restoration project, but may be developed in the future consistent with the 2006 LRDP.

Alternative 2: Upper Bevatron Alternative. Under this alternative, the new building would be constructed on the undeveloped strip between Lawrence Road to the south and McMillan Road to the north on the LBNL hill site. Because the area available at this site is limited, in order to accommodate the SERC facility, this would be a three-story, 48-foot-high building with a footprint of 300 by 60 feet. Similar to the proposed project, about 60 employees would be associated with this alternative.

Alternative 3: Former California Department of Health Services Site Alternative. Under this alternative, the SERC facility would be located on a University-owned site on the western edge of the UC Berkeley campus in the City of Berkeley. The approximately 2.4-acre site covers almost the entire block defined by Oxford, Hearst, Shattuck, and Berkeley Way, and was formerly occupied by a 215,000 gsf California Department of Health Services (DHS) building which has been demolished recently. Under this alternative, a new three-story SERC building would be constructed in the western portion of the DHS site along the Shattuck Avenue frontage. This alternative involves the relocation of 50 UC Berkeley and LBNL staff to the DHS site and the hiring of 10 new employees.

Alternative 4: Richmond Field Station Alternative. Under this alternative, the proposed SERC project would be located at the UC Berkeley Richmond Field Station (RFS). The RFS is located in Richmond off of Interstate 580. The 152-acre academic teaching and research facility consists of about 100 acres of uplands and about 52 acres of marsh and bay lands. The proposed SERC project site at RFS is a 3.2-acre parcel bound by Seaver Avenue to the west, South 47th Street to the east, and two un-named streets to the north and south. The new SERC building would be three stories tall and would have a similar footprint as the proposed project. This alternative involves the relocation of 50 UC Berkeley and LBNL staff to the RFS site and the hiring of 10 new employees.

Alternative 5: Leased Facility on San Pablo Avenue. Under this alternative, UC LBNL would lease a portion of the 508,000 gsf building located at 6701 San Pablo Avenue, in the cities of Berkeley, Emeryville, and Oakland. This alternative would involve interior tenant improvements to provide the needed office and laboratory space. To provide adequate cooling, cooling towers and chillers would be constructed on

top of the building. This alternative involves the relocation of about 50 persons to the leased facility and hiring 10 new employees.

Table ES-2, Summary Comparison of Project Alternatives, which follows **Table ES-1**, presents a comparison of the significant environmental impacts of each alternative to those that are expected to result from the proposed project.

Based on the analysis presented in the EIR, Alternative 4, Richmond Field Station Alternative, was identified as the Environmentally Superior Alternative (see **Section 5.0** of the Draft EIR).

AREAS OF CONTROVERSY

On May 13, 2010, the University issued a Notice of Preparation (NOP)/Initial Study announcing the preparation of a Draft EIR and describing its proposed scope. The Initial Study determined that implementation of the proposed project would not adversely affect agricultural resources, biological resources, cultural resources, land use and planning, mineral resources, public services, population and housing, or recreation, and that further evaluation of these topics was not required in the EIR. The Initial Study also noted that in accordance with CEQA Guidelines Sections 15152 and 15168 and Public Resources Code Section 21094, the environmental analysis in the SERC Project EIR would be tiered from the EIR (State Clearinghouse No. 2000102046) that was prepared for the LBNL 2006 Long Range Development Plan (2006 LRDP). A public scoping meeting was held by UC LBNL at the North Berkeley Senior Center on May 26, 2010.

The University issued the Draft EIR on September 7, 2010 and circulated it for public review and comment for a 45-day period ending on October 21, 2010. A public hearing on the Draft EIR was held by UC LBNL on September 23, 2010 at the North Berkeley Senior Center. One agency, three organizations, and eight individuals provided written comments on the Draft EIR and/or provided comments at the September 23, 2010 public hearing. The Final EIR contains all of the comments received during the public comment period, together with comment responses prepared in accordance with CEQA, the CEQA Guidelines, and the University's procedures for implementing CEQA. Following is a list of the major issues raised in the comments received on the Draft EIR:

- Geology and Soils. Several commenters declared that no more buildings should be constructed at the LBNL hill site due to unstable geological conditions.
- Nanomaterial hazards. Some commenters emphasized the potential dangers of nanomaterials and asked for a fuller description and analysis of nanomaterials effects on human health and the environment.

- Fire hazards. Some commenters declared the LBNL hill site as unsuitable for development due to potential risks from area wildland fire.

- Alternative Siting. Many commenters asked that alternative project locations with fewer potential impacts related to geology and soils and hazardous materials should be considered or selected.

Table ES-1
Summary of Impacts and Mitigation Measures

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.1 Aesthetics			
Impact VIS-1		**Mitigation Measure**	
Construction activities associated with the project would create temporary aesthetic nuisances for adjacent land uses.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact VIS-2		**Mitigation Measure**	
The proposed project would alter views of the LBNL hill site, but it would not result in a substantial adverse effect to a scenic vista or substantially damage scenic resources.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact VIS-3		**Mitigation Measure**	
The proposed project would alter the existing visual character of the LBNL hill site but would not substantially degrade the existing visual character and quality of the site and its surroundings.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact VIS-4		**Mitigation Measure**	
The proposed project would create a new source of substantial light or glare that would not adversely affect day or nighttime views in the area.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact VIS-1		**Mitigation Measure**	
Construction of multiple projects at the LBNL hill site during the 2010 to 2013 window would not create a significant cumulative aesthetic nuisance.	Less than significant	No mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality			
Impact AQ-1		**Mitigation Measure**	
Construction of the proposed project would generate short-term emissions of fugitive dust and criteria air pollutants that would not adversely affect local air quality in the vicinity of the construction site and would not exceed the BAAQMD construction significance thresholds.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AQ-2		**Mitigation Measure**	
The proposed project would generate long-term operational emissions of criteria pollutants from increases in traffic and stationary and area sources that would not adversely affect air quality.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AQ-3		**Mitigation Measure**	
The proposed project would increase carbon monoxide concentrations at busy intersections and along congested roadways in the project vicinity but would not expose sensitive receptors to substantial pollution concentrations.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AQ-4		**Mitigation Measure**	
The proposed project would not create objectionable odors affecting a substantial number of people.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AQ-5		**Mitigation Measure**	
The proposed project would not expose the maximally exposed individual to an increased cancer risk exceeding 10 in 1 million.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact AQ-6		**Mitigation Measure**	
The proposed project would not generate ground level concentrations of noncarcinogenic toxic air contaminants that would result in a Hazard Index greater than 1.0 for the maximally exposed individual.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.2 Air Quality (continued)			
Impact AQ-7		**Mitigation Measure**	
Development of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under the federal and state ambient air quality standard.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact AQ-1		**Mitigation Measure**	
Construction emissions of the proposed project, in conjunction with emissions from other construction projects within 1,000 feet would not result in adverse health impacts.	Less than significant	No mitigation measure required.	Less than significant
4.3 Geology and Soils			
Impact GEO-1		**Mitigation Measure**	
The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault.	No impact	No project-level mitigation measure required.	No impact
Impact GEO-2		**Mitigation Measure**	
The proposed project would not expose people to potentially substantial adverse effects, including the risk of loss, injury, or death due to strong seismic ground-shaking.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact GEO-3		**Mitigation Measure**	
The proposed project would not expose people and structures to potentially substantial adverse effects due to seismically induced ground failure, including liquefaction.	No impact	No project-level mitigation measure required.	No impact
Impact GEO-4		**Mitigation Measure**	
The proposed project would not expose people and structures to potentially substantial adverse effects due to seismically induced landslides or non-seismic landslides.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.3 Geology and Soils (continued)			
Impact GEO-5		**Mitigation Measure**	
The proposed project would not result in substantial topsoil removal or soil erosion.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact GEO-6		**Mitigation Measure**	
The proposed project would not be located on a geologic unit that may be unstable or could become unstable as a result of the project.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact GEO-7		**Mitigation Measure**	
The proposed project would not be constructed on expansive soils or bedrock that could create substantial risk to life or property.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact GEO-1		**Mitigation Measure**	
Construction of multiple projects at the LBNL hill site during the 2010 to 2013 window would not create a significant short-term cumulative impact related to geology, soils, or geologic hazards.	Less than significant	No mitigation measure required.	Less than significant
4.4 Greenhouse Gas Emissions			
Impact GHG-1		**Mitigation Measure**	
Project development would generate greenhouse gas emissions, either directly or indirectly, that would not have a significant impact on the environment.	Less than significant	No mitigation measure required.	Less than significant
Impact GHG-2		**Mitigation Measure**	
The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Less than significant	No mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.5 Hazards and Hazardous Materials			
Impact HAZ-1		**Mitigation Measure**	
Implementation of the proposed project would increase the routine use, transport and storage of hazardous materials and other scientific materials at the LBNL hill site but would not create a significant hazard to the public or the environment under routine or reasonably foreseeable upset and accident conditions.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HAZ-2		**Mitigation Measure**	
The proposed project would not be located on a site that is included on a list of hazardous materials site or result in a significant hazard to the public or the environment by disturbing groundwater remediation activities.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HAZ-3		**Mitigation Measure**	
The proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HAZ-4		**Mitigation Measure**	
The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact HAZ-1		**Mitigation Measure**	
Construction of multiple projects at the LBNL hill site during the 2010 to 2013 window would not create a significant short-term cumulative impact related to hazardous materials exposure.	Less than significant	No mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.6 Hydrology and Water Quality			
Impact HYDRO-1		**Mitigation Measure**	
Development of the project site would not substantially alter the drainage pattern of the site or result in an increased volume of stormwater runoff such that the flows would exceed the capacity of planned storm drain systems, lead to flooding, or cause erosion in the receiving waters.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HYDRO-2		**Mitigation Measure**	
Project construction activities would not increase turbidity or decrease water quality in surface waterways.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact HYDRO-3		**Mitigation Measure**	
Project operations would not violate any water quality standards or waste discharge requirements or result in other water quality impacts.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact HYDRO-1		**Mitigation Measure**	
Construction of multiple projects at the UC Berkeley campus and LBNL hill site during the 2010 to 2013 window would not create a significant short-term cumulative impact on water quality.	Less than significant	No mitigation measure required.	Less than significant
4.7 Noise			
Impact NOISE-1		**Mitigation Measure**	
Construction activities would temporarily elevate noise levels at the project site and surrounding areas.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact NOISE-2		**Mitigation Measure**	
Temporary vibration related to construction activities would not cause an impact.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact NOISE-3		**Mitigation Measure**	
Vehicular traffic associated with the proposed project would result in an incremental, but imperceptible, long-term increase in ambient noise levels.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact NOISE-4		**Mitigation Measure**	
The operation of the proposed facility would not result in a substantial long-term increase in ambient noise levels.	Less than significant	No project-level mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.7 Noise (continued)			
Cumulative Impact NOISE-1		**Mitigation Measure**	
The proposed project would not make a cumulatively considerable contribution to noise impacts associated with construction of multiple projects at the LBNL hill site during the 2010 to 2013 construction window.	Less than significant	No mitigation measure required.	Less than significant
4.8 Transportation and Traffic			
Impact TRANS-1		**Mitigation Measure**	
The proposed project would not cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system under the near-term conditions.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact TRANS-2		**Mitigation Measure**	
The proposed project would not result in inefficient and unsafe operations or inadequate emergency access.	No impact	No project-level mitigation measure required.	No impact
Impact TRANS-3		**Mitigation Measure**	
The proposed SERC project would result in increases in transit ridership but would not require expanded service.	No impact	No project-level mitigation measure required.	No impact
Impact TRANS-4		**Mitigation Measure**	
The proposed project would not result in increased hazards to pedestrians or bicyclists or conflicts with adopted policies, plans, or programs promoting walking or bicycling.	No impact	No project-level mitigation measure required.	No impact
Impact TRANS-5		**Mitigation Measure**	
The construction of the proposed project would temporarily and intermittently result in impacts on vehicles, pedestrians, or bicyclists, and parking.	Less than significant	No project-level mitigation measure required.	Less than significant
Cumulative Impact TRANS-1		**Mitigation Measure**	
The proposed project would not make a cumulatively considerable contribution to traffic impacts associated with construction of multiple projects at the LBNL hill site and UC Berkeley campus during the 2010 to 2013 construction window.	Less than significant	No mitigation measure required.	Less than significant

Environmental Topic and Impact	Level of Significance before Mitigation	Mitigation Measures	Level of Significance after Mitigation
4.8 Transportation and Traffic (continued)			
Cumulative Impact TRANS-2		**Mitigation Measure**	
The proposed project would make a cumulatively considerable contribution to long-term traffic impacts in the project vicinity.	Significant	No additional mitigation is feasible.	Significant and unavoidable
4.9 Wastewater and Energy Systems			
Impact UTILS-1		**Mitigation Measure**	
Implementation of the proposed project would not require an expansion of the EBMUD wastewater treatment plant or an expansion of the City's sewer conveyance facilities.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact UTILS-2		**Mitigation Measure**	
The construction of electrical and natural gas connections for the proposed project would not result in significant environmental impacts.	Less than significant	No project-level mitigation measure required.	Less than significant
Impact UTILS-3		**Mitigation Measure**	
The proposed project would create additional demand for electricity, natural gas, and other fuels, but would not result in wasteful or inefficient consumption of energy or require the construction of new power generation facilities.	Less than significant	No project-level mitigation measure required.	Less than significant

Table ES-2
Summary Comparison of SERC Project Alternatives

SERC Project Impact		Proposed SERC Project (Before Mitigation)	No Project Alternative	Upper Bevatron Alternative	Former DHS Site Alternative	RFS Site Alternative	San Pablo Avenue Alternative
SERC NOISE-1	Construction activities would temporarily elevate noise levels at the project site and surrounding areas but not above the significance threshold for construction noise.	Less than significant	No impact However, there would be similar less than significant noise impacts from the construction of another building at the project site, pursuant to the 2006 LRDP.	Less than significant Similar to the proposed project.	Significant Construction activities would generate noise levels that would exceed significance thresholds at the nearest residential receptors.	Less than significant	Significant Construction activities would generate noise levels that would exceed significance thresholds at the nearest residential receptors.
Cumulative NOISE-1	The proposed project would not make a cumulatively considerable contribution to noise impacts associated with construction of multiple projects at the LBNL hill site during the 2010 to 2013 construction window.	Less than significant	No impact However, there would be similar less than significant impacts from the development of another project at the proposed site, pursuant to the 2006 LRDP.	Less than significant Similar to the proposed project.	Significant Construction activities would contribute to a significant cumulative noise impact.	Less than significant This alternative would not contribute to a significant cumulative noise impact.	Less than significant This alternative would not contribute to a significant cumulative noise impact.
Cumulative TRANS-1	The proposed project would make a cumulatively considerable contribution to long-term traffic impacts in the project vicinity.	Significant and unavoidable	No impact However, there would be similar or greater impacts from the development of another project at the proposed site, pursuant to the 2006 LRDP.	Significant and unavoidable Similar to the proposed project.	Significant and unavoidable This alternative would contribute to significant cumulative traffic impacts at intersections in downtown Berkeley.	Less than significant This alternative would not contribute to a significant cumulative traffic impact.	Less than significant This alternative would not contribute to a significant cumulative traffic impact.
New Impact (related to Alternatives 4 and 5)	Construction of the SERC facility could have an adverse effect on cultural resources.	Less than significant	No impact However, there could be similar less than significant impacts from the development of another project at the proposed site, pursuant to the 2006 LRDP.	Less than significant Similar to the proposed project.	Less than significant Similar to the proposed project.	Less than significant However, there is a higher potential for encountering archaeological resources compared to the proposed project.	Potentially significant This alternative could result in a significant impact on a historic resource.