University of California, Berkeley
Cal Beach Volleyball Complex Project
Draft Initial Study-Mitigated Negative Declaration

Prepared for:

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Capital Strategies
Physical and Environmental Planning
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SOURCES

In addition to the technical appendices, all documents cited in this report and used in its preparation are hereby incorporated by reference in this Initial Study. Copies of documents referenced are available for review at University of California, Berkeley, Physical and Environmental Planning, 200 A&E Building, Berkeley, California, 94720.

1. *Introduction*

This document is an Initial Study for the Cal Beach Volleyball Complex Project (project or proposed project) prepared by the University of California, Berkeley (UC Berkeley) to determine if the proposed project may have a significant effect on the environment. This Initial Study was prepared pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Sections 21000 *et seq.*) and CEQA Guidelines (California Code of Regulations [CCR] Sections 15000 *et seq.*). Pursuant to CEQA Guidelines Section 15051, the Regents of the University of California (UC Regents) is the lead agency for the proposed project.

UC Berkeley is part of the University of California (UC) system, a constitutionally created entity of the State of California with "full powers of organization and government" (California Constitution Article IX, Section 9). As a constitutionally created State entity, UC is not subject to the regulations of local agencies, such as those that may be found in the City of Berkeley General Plan or land use ordinances, whenever using property owned or controlled by UC in furtherance of UC's educational purposes.

Regulatory information provided in this document presents the applicable University, federal, and State laws, regulations, plans, and policies that are relevant to each environmental topic being discussed. As UC Berkeley is constitutionally exempt from local governments' regulations, the regulatory information provided does not include local plans, policies, or regulations unless UC Berkeley expressly uses a local plan, policy, or regulation as a threshold or standard of significance or if UC Berkeley determines that local plans, policies or regulations provide relevant context for the assessment of environmental impacts. For example, local plans, policies, and regulations are included for applicable project activities that would occur off of the UC Berkeley Campus, such as activities within City of Berkeley streets and rights-of-way.

The proposed project would involve replacing the existing parking lot and landscaping with a five-court sand volleyball facility with a viewing capacity of approximately 500 spectators on berm seating (with no fixed seating) and an approximately 3,500 square-foot team building for locker rooms and restrooms. The seating area would consist of a flat area and a sloped berm with a synthetic turf surface. The turf on the north side would be at ground level. The turf on the east side against Edwards Stadium would be elevated to seat height, and the front of the raised pad built as a concrete bench. The proposed project also includes lighting and a public-address (PA) system for sound amplification, modifications to the existing sidewalk on Fulton/Oxford Street along the site frontage, and reconfiguration of on-street parking on this segment of the road. For additional details on the proposed project, see Chapter 3, *Project Description*, of this Initial Study.

1.1 INITIAL STUDY

Pursuant to Section 15063 of the CEQA Guidelines,[1] an Initial Study is a preliminary environmental analysis that is used by the lead agency as a basis for determining what form of environmental review is required for a project. The CEQA Guidelines require that an Initial Study contain a project description, description of environmental setting, identification of environmental effects by checklist or other similar form, explanation of environmental effects, discussion of mitigation for significant environmental effects, evaluation of the project's consistency with existing and applicable land use controls, and the name of persons who prepared the study.

1.2 REPORT ORGANIZATION

This Initial Study is organized into the following chapters:

- **Chapter 1: Introduction.** This chapter provides an introduction and overview of the Initial Study document.
- **Chapter 2: Executive Summary.** A summary of the pertinent details for the proposed project, including lead agency contact information, project site, and planned land uses are in this chapter. This chapter also summarizes the significant impacts that could occur from construction and operation of the proposed project and identifies the mitigation measures recommended to reduce the impact to a less-than-significant level.
- **Chapter 3: Project Description.** This chapter describes the location and setting of the proposed project, along with its principal components.
- **Chapter 4: Environmental Analysis.** Making use of the CEQA Guidelines Appendix G, *Environmental Checklist*, this chapter identifies and discusses anticipated impacts from the proposed project, providing substantiation of the findings made.
- **Chapter 5: Mitigation Monitoring and Reporting Program.** This chapter lists the impacts found to be significant and identifies the recommended mitigation measures categorized by impact area.
- **Chapter 6: Organizations and Persons Consulted.** This chapter presents a list of UC Berkeley and consultant team members that contributed to the preparation of the Initial Study.

[1] The CEQA Guidelines are found in Title 14 CCR Section 15000 *et seq*.

2. *Executive Summary*

2.1 INITIAL STUDY CHECKLIST

Project Title:	Cal Beach Volleyball Complex Project
Location:	University of California, Berkeley Alameda County, California
LRDP Planning Zone:	Campus Park
Lead Agency:	University of California 1111 Franklin Street, 12th Floor Oakland, California 94607
Contact Person:	Shraddha Navalli Patil, Ph.D., Senior Planner University of California, Berkeley Physical & Environmental Planning shraddha@berkeley.edu
Project Sponsor:	University of California, Berkeley Capital Strategies Physical and Environmental Planning 200 A&E Building Berkeley, California 94704-1382
Description of Project:	See Chapter 3, *Project Description*
Surrounding Land Uses and Setting:	Athletic, residential mixed-use, and commercial uses in an urban environment
Other Public Agencies whose Approval is Required:	See Section 3.5, Required Permits and Approvals, of Chapter 3, Project Description

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

See Section XVIII, Tribal Cultural Resources, of Chapter 4, Environmental Analysis.

2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a potentially significant impact, as shown in Chapter 4, *Environmental Analysis*, of this Initial Study.

☐	Aesthetics	☐	Agriculture & Forestry Resources	☐	Air Quality
☐	Biological Resources	☒	Cultural Resources	☐	Energy
☐	Geology & Soils	☒	Greenhouse Gas Emissions	☐	Hazards & Hazardous Materials
☐	Hydrology & Water Quality	☐	Land Use & Planning	☐	Mineral Resources
☒	Noise	☐	Parks & Recreation	☐	Population & Housing
☐	Public Services	☐	Transportation	☒	Tribal Cultural Resources
☐	Utilities & Service Systems	☐	Wildfire	☒	Mandatory Findings of Significance

2.3 DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Approved by: _____ Date: January 16, 2025
Wendy Hillis
Campus Architect, Assistant Vice Chancellor

2.4 SUMMARY OF IMPACTS AND MITIGATION MEASURES

The following lists the significant impacts by topic that could occur from construction and operation of the proposed project and identifies the mitigation measures recommended to reduce the impact to a less-than-significant level. All other topic areas were identified to have less-than-significant impacts. A detailed discussion of the proposed project's impacts is provided in Chapter 4, *Environmental Analysis*, of this Initial Study.

CULTURAL RESOURCES

Impact CUL-1: Relocation of the ticket booths could damage the structures and result in a significant impact to a historical resource.

Mitigation Measure CUL-1: Prior to the initiation of any site or building demolition of construction activities, a moving/structural engineering company with demonstrated experience in the relocation of historic buildings shall be contracted for the work. The relocation shall be planned in accordance with provisions in the California Historic Building Code. When preparing the relocation plan, the moving/structural engineering company shall consult with a qualified preservation architect who meets the Secretary of the Interior's Professional Qualifications Standards to confirm their proposed relocation plan and that the proposed methods for relocation are consistent with professional best practices. Bracing and securing the buildings for the move shall be undertaken in a manner that will avoid any damage to their historic materials. In case of inadvertent damage from the move, the buildings should be documented using photogrammetry, lidar, or other similar technology that will provide measured drawings prior to the move to inform repair work, if needed. The Campus Architect shall review and approve the relocation plan prior to the initiation of site or building demolition of construction activities and after construction shall verify that the relocation was completed in compliance with the approved relocation plan.

Impact CUL-2: The proposed project has the potential to disturb unknown archaeological resources that could exist beneath the depth of previous ground disturbances and result in a significant impact to an archaeological resource.

Mitigation Measure CUL-2: UC Berkeley shall implement the following steps to ensure impacts to archaeological and tribal cultural resources will be less than significant during ground-disturbing activities.

- Prior to soil disturbance, UC Berkeley shall confirm that contractors have been notified of the procedures for the identification of federal- or State-eligible cultural resources, and that the construction crews are aware of the potential for previously undiscovered archaeological resources or tribal cultural resources on-site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.
- If a resource is discovered during construction (whether or not an archaeologist is present), the following measures shall be implemented:
- All soil-disturbing work within 35 feet of the find shall cease.
- UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site in the project area to determine whether the resource is significant and would be affected by the project.
- Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist.
- If the resource is a tribal cultural resource, the consulting archaeologist, approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission, shall consult with the appropriate tribe to evaluate the significance of the resource and to recommend appropriate and feasible avoidance, testing, preservation or mitigation measures, in light of factors such as the significance of the find, proposed project design, costs, and other considerations.
- If avoidance is infeasible, other appropriate measures (e.g., data recovery) may be implemented.
- If the resource is a non-tribal resource determined significant under CEQA, a qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant.
- The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources if appropriate.

- The report shall be submitted to the City of Berkeley, California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required, and the applicable Native American tribes, if requested.
- Ground-disturbing activities shall be monitored from the outset. Tribal monitoring shall occur for soil removal, parcel grading, new utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. Based on project-specific daily construction schedules, field conditions, and archaeological observations, full-time monitoring may not be warranted following initial observations.

GREENHOUSE GAS EMISSIONS

Impact GHG-1: The proposed project exceeds the threshold of a no net increase in greenhouse gas (GHG) emissions and, therefore, would generate GHG emissions that may have a significant impact on the environment.

Mitigation Measure GHG-1: UC Berkeley shall offset net new GHG emissions for the proposed project. UC Berkeley shall purchase GHG carbon offsets of no less than 48 metric tons of carbon dioxide equivalent (MT CO_2e) per year until the campus's new Berkeley Clean Energy Campus is fully operational and the proposed project is verified as utilizing that system for electricity. UC Berkeley shall purchase GHG carbon offsets from a voluntary GHG carbon offset provider with an established protocol that requires projects generating GHG carbon offsets to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code Sections 38562(d)(1) and (2)). UC Berkeley may purchase GHG carbon offsets from UC developed voluntary carbon offset projects that are real, permanent, quantifiable, peer verifiable, enforceable, and additional. Definitions for these terms follow.

a. **Real**: Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage"). (To ensure that GHG reductions are real, the California Air Resources Board (CARB) requires the reduction be a direct reduction in a confined project boundary.)

b. **Additional:** GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration.

c. **Permanent:** To function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.

d. **Quantifiable:** The ability to accurately measure and calculate GHG reductions or GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the offset project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage.

e. **Verified:** GHG reductions must result from activities that have been verified. Verification requires third party review of monitoring data for a project to ensure the data are complete and accurate. If a voluntary carbon offset project is developed by the UC, the monitoring data shall be peer reviewed by a qualified third party to ensure the data are complete and accurate.

f. **Enforceable**: The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means. Note that for this mitigation measure, only credits originating within the United States are allowed.

Mitigation Reporting. GHG reductions achieved by the purchase of carbon offsets shall be incorporated into UC Berkeley's annual GHG inventory and annual reporting practices established by the UC Sustainable Practices Policy. Carbon offsets for the purpose of offsetting net new emissions generated by the proposed project shall be purchased by UC Berkeley until the cogeneration plant is replaced by the new Berkeley Clean Energy Campus and the proposed project is confirmed to source 100 percent of its electricity demand from the Berkeley Clean Energy Campus.

NOISE

Impact NOI-1: Construction of the proposed project would result in noise levels that exceed the City of Berkeley construction noise thresholds at applicable land use receptors, resulting in a significant impact.

Mitigation Measure NOI-1: In order to reduce noise levels generated during construction of the proposed project to below the City's required threshold, the following construction noise control measures shall be implemented:

- Prior to the initiation of construction activities at the project site, temporary noise barriers/blankets shall be installed by the project construction contractor along the western and northern boundaries of the project site to shield nearby sensitive receptors from construction noise. The temporary barriers/blankets shall have a minimum height of 15 feet and be constructed with a solid material that has a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier.
- Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer.

Impact NOI-2: Construction of the proposed project would result in groundborne vibration levels at Edwards Stadium that could exceed the FTA's threshold for minor architectural damage to engineered concrete structures, resulting in a significant impact.

Mitigation Measure NOI-2: Project construction activities that occur within 12 feet of Edwards Stadium and involve earthmoving (i.e., grading, excavation, etc.), shall be conducted with equipment that is limited to 100 horsepower or less. This construction requirement shall be included on the final construction plans for the proposed project.

TRIBAL CULTURAL RESOURCES

Impact TCR-1: Ground-disturbing activities could encounter and cause a substantial adverse change to unknown subsurface tribal cultural resources.

Mitigation Measure TCR-1: Implement Mitigation Measure CUL-2.

EXECUTIVE SUMMARY

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3. *Project Description*

The University of California, Berkeley (UC Berkeley or university) Cal Beach Volleyball Complex Project (project or proposed project) is about gender equity. Gender equity is a crucial, over-arching value for UC Berkeley that demands equitable facilities for its women and men student athletes. Relatedly, the campus must also maintain compliance with Title IX. UC Berkeley is dedicated to supporting all of its student-athletes with access to equitable resources and amenities. Aligning with UC Berkeley's mission to provide all student-athletes with a well-rounded experience, complete with first-rate opportunities for their athletic, academic, and personal growth, new and upgraded facilities remain a critical component.

UC Berkeley aims to provide its existing women's teams with fields, courts and associated amenities that are similar to what their male counterparts already enjoy while also meeting the university's obligations under Title IX. The existing Beach Volleyball Courts at Clark Kerr Campus does not meet current National Collegiate Athletic Association Division I (NCAA) standards for number of courts, seating, and lighting. This puts Intercollegiate Athletic (IA) Women's Beach Volleyball Program at a competitive disadvantage in terms of practices, game play, and hosting tournaments and postseason games. Consistent with its Title IX commitment to provide equitable athletics facilities for male and female student athletes, the fundamental purpose of the project is to provide an equitable facility for women's volleyball. The proposed project would involve the demolition of an existing surface parking lot and landscaping and the construction and operation of a new five-court sand volleyball facility. This chapter provides a detailed description of the proposed project, including the location, setting, and characteristics of the project site, the principal project features, construction phasing and schedule, as well as a list of required permits and approvals.

3.1 PROJECT LOCATION AND SITE CHARACTERISTICS

LOCATION AND SETTING

The project site for the proposed project is the UC Berkeley campus in the city of Berkeley in Alameda County, on the east side of the San Francisco Bay, as shown on Figure 3-1, *Regional Project Location*. The project site is an approximately 1.1-acre part of the UC Berkeley campus. The project would disturb approximately 0.14-acre in the City right of way beyond campus park. The campus is organized into five zones—the Campus Park, Hill Campus West, Hill Campus East, Clark Kerr Campus, and the City Environs Properties. The project site is in the Campus Park zone.[2] Major regional roadways serving the UC Berkeley campus include Interstate 80/580, State Route 13, and State Route 24. Oxford Street is the main local roadway serving the project site. The project site is on the east side of Oxford Street, which

[2] U.C. Berkeley. 2021. U.C. Berkeley Long Range Development Plan. Retrieved on March 27, 2024, from https://capitalstrategies.berkeley.edu/planning-documents

becomes Fulton Street along the project site frontage. Bancroft Way is at the southern boundary of the project site. Edwards Stadium marks the eastern boundary of the site. Essentially, as shown on Figure 3-2, *Aerial View of Project Site and Surroundings*, the project site is the area bound by Oxford/Fulton Street, Bancroft Way, and Edwards Stadium. Figure 3-3 shows the location of the project site on the land use zones of the campus as defined in the campus's 2021 Long Range Development Plan (LRDP).

EXISTING SITE CHARACTER

The site is largely covered by an existing asphalt concrete surface parking lot. Two landscape areas with mature trees, including a mix of coniferous and eucalyptus trees and an olive tree, occur on the site to the north and south of the parking lot. Other landscaped areas on the site are otherwise largely bare dirt/gravel or unmaintained grass; one of these areas includes curb cuts to treat stormwater runoff from the parking lot before running off-site to the City of Berkeley storm system. The site slopes from east to west with an approximate 6-foot grade change at the lowest point. The site borders the west edge of Edwards Stadium, adjacent to the west bleachers. Edwards Stadium is listed on the National Register of Historic Places. The surface parking lot contains two vacant ticket-booths for Edwards Stadium, which are cited as contributing resources in the National Register listing for Edwards Stadium. These ticket booths are no longer in use, and show signs of weathering, deterioration, and vandalism.

Figure 3-1 Regional Project Location

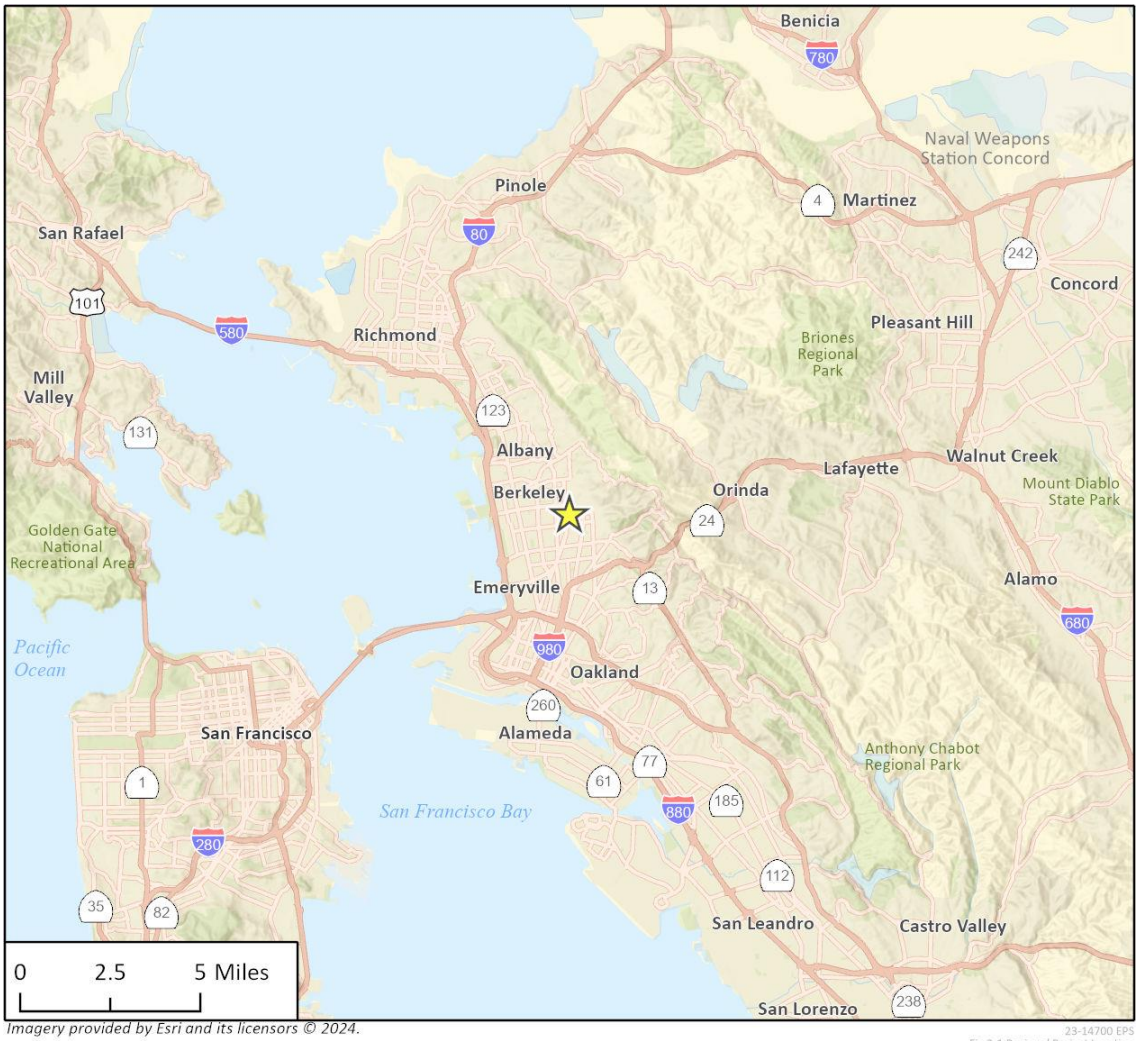
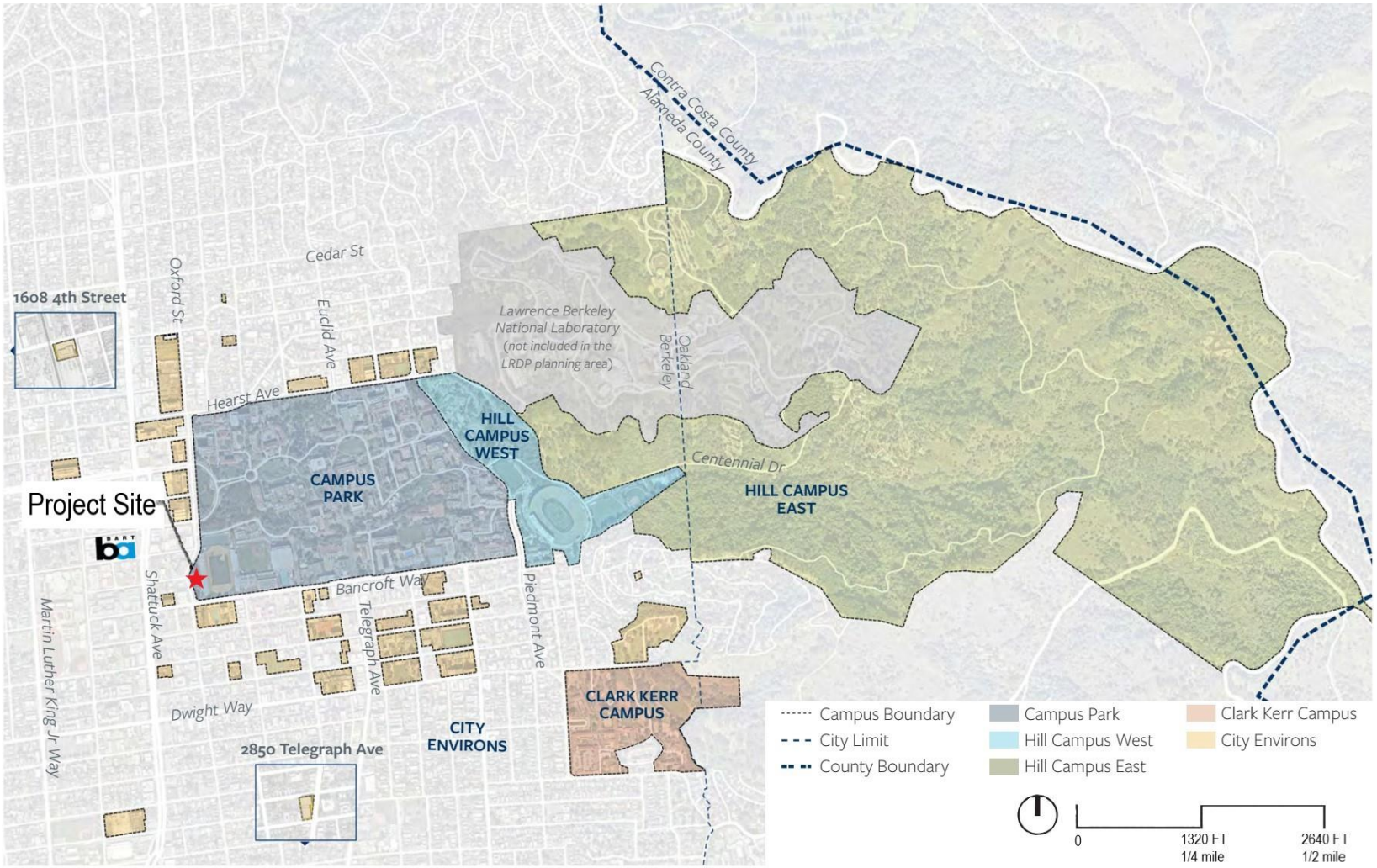


Figure 3-2 Aerial View of Project Site and Surroundings

Imagery provided by Microsoft Bing and its licensors © 2024.

23-14700 EPS
Fig 3-2 Aerial View of Project Site and Surroundings

Figure 3-3 Long Range Development Plan Land Use Zones



Prior to development with a surface parking lot, the project site contained a small building that housed the UC Berkeley Athletic Ticket Office. The ticket office building was demolished in 2018 and replaced with the surface parking lot that now exists on the project site.

3.2 PROJECT BACKGROUND

The project site is one of the parking areas in the Campus Park zone with 62 parking spaces, which are typically full during business hours on weekdays. It currently accepts the Central Campus Permit and faculty/staff permit. The proposed project would replace this parking area with a beach volleyball complex. The project site is included in the 2021 LRDP as a future building area. The environmental impact report (EIR) certified by the University of California in 2021 for the LRDP (State Clearinghouse Number 2020040078) assumed development of future building areas; the 2021 LRDP EIR is incorporated into this Initial Study by reference and applicable relevant information from the EIR is referred to where applicable and summarized pursuant to the requirements of CEQA Guidelines section 15150.[3]

As described on Page 39 of the LRDP, redevelopment of existing parking facilities is a strategy UC Berkeley plans to implement in order to develop new campus facilities and buildings.[4] The 2021 LRDP EIR evaluates the construction of new parking facilities and elimination of some existing parking facilities and spaces for a net increase that preserves the ratio of parking supply to the UC Berkeley population. [5]

3.3 PROJECT COMPONENTS

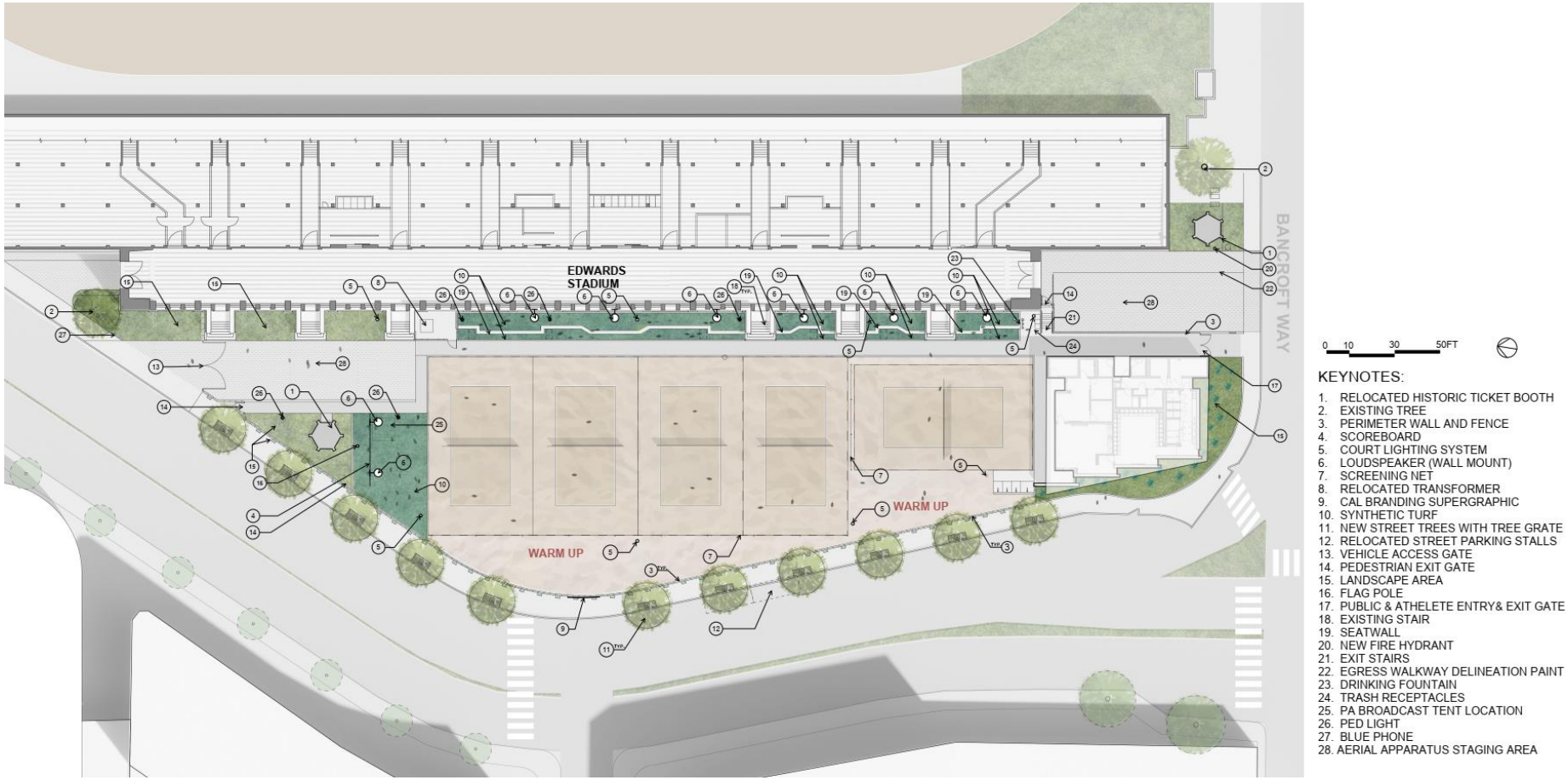
UC Berkeley proposes the conversion of an existing parking area to recreational and IA beach volleyball courts to improve the training and competition facilities provided to female student athletes, support ongoing gender equity, and comply with Title IX. The proposed project would include five beach volleyball courts and an approximately 3,500-square-foot team building for locker rooms and restrooms, a scoreboard and lighting system, a PA system, and lawn berm areas for spectators to watch matches. The project would also include modifications to the existing sidewalk on Fulton/Oxford Street along the site frontage, and reconfiguration of on-street parking on this segment of the road. Major components of the project are shown on Figure 3-4, *Conceptual Site Plan*, and are described below in more detail. The entrance to the site would be gated and from the south, and would be the main access for players, visitors and staff. Two blue light emergency phones would be installed as part of the project and would be located at the northern edge of the site and at the southeastern edge.

[3] The LRDP EIR is available for review at https://capitalstrategies.berkeley.edu/planning-documents or at University of California, Berkeley Capital Strategies, Physical and Environmental Planning, 200 A&E Building, Berkeley, CA 94720-1382

[4] .U.C. Berkeley. 2021. U.C. Berkeley Long Range Development Plan. Retrieved on March 27, 2024, from https://capitalstrategies.berkeley.edu/planning-documents

[5] The 2021 LRDP EIR was certified by the UC Regents in July 2021.

Figure 3-4 Conceptual Site Plan



BEACH VOLLEYBALL COURTS AND SEATING

The majority of the site would be covered by five sand volleyball courts and adjacent sand warm up areas. Based on program requirement and site constraints, UC Berkeley selected a layout with four courts oriented east/west and one court oriented north/south. Each of the five courts would meet National Collegiate Athletic Association (NCAA) requirements for Women's Division 1 Beach Volleyball.

The volleyball courts would consist of a minimum depth of 12-inches of beach sand at perimeters with subgrade sloping to a maximum depth of 18-inches at the court nets. The court sand would be clean, washed, naturally weathered beach sand that is specifically used for beach volleyball. The courts would include drainage consisting of multiple perforated high-density polyethylene (HDPE) subdrain pipes. The subdrain pipes would be encased in drain rock and wrapped in filter fabric running the length of the entire sand court area. Subdrains would be set in subgrade below the full depth of the beach sand.

Each court would have a volleyball net system consisting of aluminum poles with net measuring approximately 32 feet by 39 inches attached. Each net system would include an official's stand which could be clamped to a pole to officiate the match. Court boundary lines would be marked with vinyl strips measuring approximately 2 inches wide. A see-through ball screen made of fabric mesh or net approximately 25 feet tall would be provided at the west edge of the courts and between the north/south and east/west oriented courts. The ball screen would be provided to prevent volleyballs from leaving the facility and entering the right-of-way of Oxford/Fulton Street.

Spectator seating would be provided along the east and north sides of the courts. The seating would consist of a flat and berm synthetic turf surface. The turf on the north side would be at ground level. The turf on the east side against Edwards Stadium would be elevated to seat height, and the front of the raised pad would be built as a concrete bench. Seating would accommodate approximately 500 spectators. The location of the spectator seating areas in context with the volleyball courts is shown on Figure 3-4, *Conceptual Site Plan*.

TEAM BUILDING

A team building of approximately 3,500 square feet would be constructed at the south end of the site to provide office and team space, locker rooms and restrooms for the facility, as shown on Figure 3-4, *Conceptual Site Plan*. The building would be one story with a maximum height of approximately 23.5 feet. A roof screen would be provided if needed to screen rooftop equipment and is included in the maximum height of approximately 23.5 feet.

The new team building would be a horizontally proportioned pavilion element at a human scale in order to avoid competing with the larger scaled angled massing of the Edwards Stadium grandstands adjacent to the site. This pavilion design would be a composition of interconnected spaces, corridors, and light portals that occur between the solid building elements. A mass timber construction system would be

used with the underside of the cross-laminated timber panels exposed as the finished surface. The design of the team building is intended to blur the distinction between indoors and outdoors.

LIGHTING, SCOREBOARD, AND SOUND AMPLIFICATION

The volleyball facility would include lighting to facilitate evening practices and games extending into the night hours no later than 10:00 P.M. The lights would be mounted on poles of 50 to 70 feet in height. Generally, eight poles (and light fixtures) would be installed along the courts, four each on the east side and west side, spaced evenly from the north edge to the south edge of the courts. The proposed location of the light fixtures is shown on Figure 3-4, *Conceptual Site Plan*. The court lighting would be light-emitting diode (LED) products that provide a uniform average 210-footcandles on the volleyball court areas with minimal light cast beyond the court area and adjacent walkways. The lighting controls would have real-time system monitoring and adjustment of lighting levels.[6] User interface would have cloud-based data and wireless controls, per electrical plans and specifications.

Site or building mounted lighting would be provided at the athlete entry to the team building to ensure this area is well lit and comfortable for night use. Site lighting would consist of site poles and lower level lights mounted to the lighting poles. Site lighting would achieve minimum 1 foot candle across occupied areas of the site project site, in addition to lights for the volleyball courts. All exterior lighting would be angled downward or have cut-offs to control exterior light pollution.

The scoreboard would be located in the northern area of the project site, adjacent to the spectator seating area, north of the volleyball courts, as shown on Figure 3-4, *Conceptual Site Plan*. The scoreboard would be approximately 30 feet wide and 17 feet tall. The scoreboard would face south, allowing both spectators and athletes to see the score and other game information in real time as games are in play. The scoreboard would be atop an approximately 10-foot-tall pole, making the total height approximately 27 feet. For this reason, the scoreboard could be visible from certain angles outside of the volleyball facility.

The PA system would consist of a series of small speakers mounted near the spectator seating areas. Placing small speakers at the seating areas would allow for the PA system to have a lower decibel rating compared to larger typical PA system mounted to a scoreboard, for example. The decibel rating of the proposed PA system would be approximately 107 sound pressure level (SPL) at 100W per speaker. Sound pressure level is a logarithmic measure of the effective pressure of a sound relative to the threshold of human hearing. Sound amplifiers and other sound processing equipment comprising the PA system would be in the audio-visual (AV) equipment room, which would be inside of the team building.

[6] A foot-candle is defined as the illuminance on a one square foot surface from a uniform source of light. One footcandle illuminates one square foot of location from one foot away.

CIRCULATION

No parking for the facility would be provided. Existing parking on the site would be demolished and would not be replaced by the proposed project. No vehicles would operate within the project site following project construction. However, aerial fire apparatus access for Edwards Stadium would be provided at the south and north ends of the project site. The north apparatus access would have a 20-foot-wide locked vehicle access gate at the fence line. When volleyball events are happening, but no events are occurring within Edwards Stadium, the north aerial fire apparatus access area could be used by vehicles supporting the volleyball event, such as broadcast equipment and vans.

Athlete and public entrance would be provided at the south side of the site from Bancroft Way. During events and other public hours, the entry gate would remain open, but otherwise access would be restricted via card key at the fence. A second exit gate would be provided on the north side of the site with direct access to Oxford Street. Spectator walkways would also be provided within the volleyball complex, such as a walkway between the spectator seating area and the team building.

EDWARDS STADIUM

The proposed project would be located adjacent to existing Edwards Stadium, which is listed on the National Register of Historic Places. The proposed project would not require modifications or alterations to the stadium structure. However, the proposed project would require relocation of two ticket booths associated with Edwards Stadium, although these ticket booths are no longer in use. One of these ticket booths, located at the southern end of the site, adjacent to Bancroft Way, would be relocated approximately 60 feet west of its current location, remaining adjacent to Bancroft Way and proximate to the southwest corner of Edwards Stadium. The other ticket booth is located at the northern end of the project site, adjacent to Oxford Street at the northwestern corner of Edwards Stadium. This ticket booth would be relocated approximately 50 feet south of its current location, remaining adjacent to Oxford Street and proximate to the northwest corner of Edwards Stadium. The proposed locations of the ticket booths are shown on Figure 3-4, *Conceptual Site Plan*.

LANDSCAPING

Landscape and irrigation improvements would include vine planting along the new retaining wall that would face Oxford/Fulton Street (see Grading and Drainage section). Low-maintenance planting zones would be constructed around the relocated ticket booths (see Edwards Stadium section) and between the sidewalk and new team building. Native and adaptive plants would be used for landscaping applications. In addition, the project proposed would include planting new street trees along the city sidewalk adjacent to the western boundary of the project site, to be confirmed with the City of Berkeley. Additionally, two existing trees on or adjacent to the project site would be protected in-place during construction, as shown on Figure 3-5, *Demolition Plan*. As shown on Figure 3-5, 14 existing trees on or adjacent to the project site would be removed during project construction.

GRADING AND DRAINAGE

The project site slopes downward from east to west with an elevation change of approximately 6 feet across the site. In order to create a level playing surface for the volleyball courts the project would include importing fill material to raise the site by as much as 6 feet at the western boundary of the site. New fill material would be held behind a retaining wall that would be constructed along the western boundary of the site, next to sidewalk along Oxford/Fulton Street. The retaining wall would be approximately 7 feet tall at its highest point, with the top of wall being level across the site and the bottom of wall sloping with street grade. A metal picket fence would be anchored in the retaining wall. The fence would be approximately 6 feet tall with areas up to 8 feet tall at the fire access area on the north side of the site. The pickets would be spaced to block site lines along the fence adjacent the courts and become less dense to allow views into the facility where the fence is away from the courts and blocking site lines into the facility is not required. A UC Berkeley logo could be mounted to the fence, facing Oxford/Fulton Street. A conceptual rendering of the wall and fence is shown on Figure 3-6, *Conceptual View of Project from Above Oxford Street*.

Pervious pavers would be used throughout the site for new hardscape walking surfaces. Proposed new impervious areas on site would be under 10,000 square feet, total. Ultimate outfall from the court subdrains would connect to the City of Berkley storm drain in the Fulton Street and Bancroft Way public rights-of-way. Improvements made in public rights-of-way would be to City of Berkeley standards.

Figure 3-5 Demolition Plan

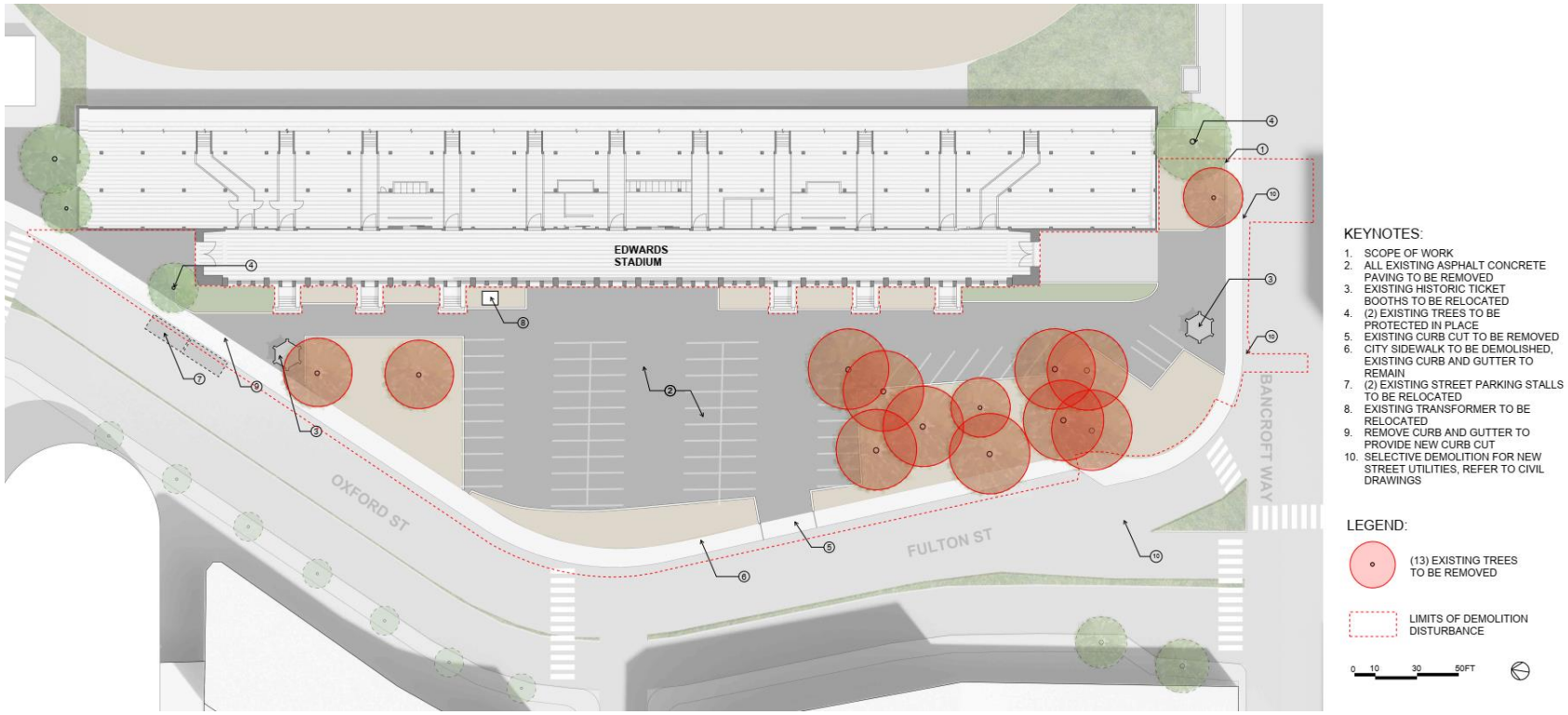


Figure 3-6 Conceptual View of Project from Above Oxford Street

UTILITIES

The proposed utility infrastructure would connect to the existing water, storm drain system, electricity, telecom, and sanitary sewer network in the area, and would be served by an existing solid waste landfill.

WATER SUPPLY

Water service for the site would be served by a new 6-inch lateral extending from the existing main in Bancroft Way. The new service line would require a new meter and backflow prevention device. Irrigation water would be split from domestic supply with a meter and a backflow device. A new 6-inch lateral with backflow device would be provided for fire water, and a new 6-inch lateral would connect to a new hydrant at the south edge of the Project.

Water infrastructure improvements, pipe material, fittings, and valves on-site would be per UC Berkeley design standards 2020 Section 33.10.00 for Water Utilities. Improvements made in the public right-of-way would be per East Bay Municipal Utility District or governing agency standards. In accordance with the UC Berkeley Campus Fire Marshal, a new fire hydrant would be installed along Bancroft Way in the southeast corner of the project site.

ELECTRICITY

The existing Edwards Field campus transformer (located just behind Edwards Field, behind the Edwards Field bleachers) has sufficient capacity to serve the new volleyball facility. Electrical service conductors would be routed underground from the existing transformer to a new switchboard. Construction of the electrical system for the proposed project would require temporary shutdown of power for Edwards Stadium. A new electrical switchboard would be located in the proposed team building. A new main electrical switch and transformer could be added in the future to separate the project's electrical system from Edwards.

Emergency power system for this project would be provided with a new 20 kW pad-mounted central battery inverter with 90 minutes of battery run-time ability. The emergency battery inverter would also be located inside of the proposed team building.

SOLID WASTE SERVICES

The proposed project would include a set of three Big Belly trash receptacles – landfill, recycling and compost – to be located within the facility. The trash units, which would be serviced by Cal Zero Waste, UC Berkeley's solid waste collection, and would be non-solar unless they can be located in the open air in the sun.

SANITARY SEWER

The proposed team building would contain restrooms with toilets, showers, and sinks, and drinking water fountains would be provided within the volleyball complex. The wastewater from these fixtures would be conveyed to an existing public sewer main in Bancroft Way via a new high-density polyethylene pipe. Sanitary sewer improvements on-site would be per UC Berkeley design standards 2020 Section 33.30.00 for sanitary sewerage utilities. Improvements made in the public right-of-way would be City of Berkeley or governing agency standards.

Portable toilets for use by the public attending volleyball events would be available on or adjacent to the site.

SUSTAINABILITY

The proposed project has been designed to incorporate strategies to minimize energy usage. The project would be designed to LEED Gold per UC Berkeley standards. The design would maximize daylight use, enhancing the indoor environment of the team building and reducing reliance on artificial lighting during the day. The integration of energy-efficient fixtures and appliances in the team building would contribute to a reduced energy footprint. Smart climate control systems, occupancy sensors/timers, and well-insulated building envelopes would be installed in the team building to ensure optimal thermal performance, minimizing the need for excessive heating. Hot water would be produced by a heat pump system to minimize energy expenditure, and no on-site fossil fuel burning equipment would be installed. The building would be constructed ready for photovoltaic solar energy pursuant to the California Building Code. Additionally, the team building would be constructed to use renewable energy sources to harness clean energy for its operational needs. One-hundred percent of the annual building cost would be offset for a minimum of five years using green power, renewable energy credits, or carbon offsets.

Mass timber would be used for the building structure to minimize project embodied carbon. High-performance, durable materials would be used for exterior elements and robust interior finishes, are integrated into the design of the team building to ensure the longevity of the facility. These materials would contribute to the sustainability of the proposed project by reducing the need for frequent replacements and maintenance.

Outdoor water use for landscape irrigation would be reduced by at least 30 percent below baseline conditions by using native and adaptive plants for landscaping applications, as well as using more efficient fixtures and schedules. Water-efficient indoor fixtures, such as toilets, urinals, aerated faucets, and showers would be utilized for the project, reducing indoor water use by at least 20 percent below baseline.

The proposed project does not include parking. The exclusion of parking would encourage spectators to arrive at volleyball matches by more sustainable modes of transportation than single-occupancy vehicles, such as public transit, bicycles, or walking. Additionally, existing parking removed by the proposed project would not be replaced Additionally, public transit is less than 0.25 mile from the project site, and it takes approximately 6 minutes to walk from the Bart station to the project site.

OFF-SITE IMPROVEMENTS

There is existing sidewalk along the site frontage on both Bancroft Way and Oxford/Fulton Street. These sidewalks, which are owned by the City of Berkeley, would be demolished and replaced with new sidewalk as part of the proposed project. Demolition of the sidewalks along the site frontage is required for site grade adjustments, described above in Grading and Drainage. The new sidewalk would conform to the adjacent sidewalk segments, which would not be modified by the proposed project. The curb and gutter would be maintained with damaged sections replaced; only the sidewalk would be demolished and replaced with new sidewalk. However, the existing curb cut at the existing parking entry on Fulton Street would be demolished and replaced with typical curb and gutter and sidewalk, as a driveway for parking would no longer be required after the proposed project is constructed, as shown on Figure 3-5, *Demolition Plan*. The proposed project would also include removal of existing curb to allow installation of a new curb cut at the proposed fire apparatus access area at the north end of the site. Restriping of two existing street parking stalls to allow for proposed fire apparatus access on the north side of the site would also occur as part of the proposed project.

3.4 CONSTRUCTION

Demolition and construction would take place over an approximately 12-month period, which is anticipated to begin in Spring 2025 and end in Summer 2026, subject to project approval.[7] UC Berkeley proposes to demolish the existing surface parking lot and remove the existing on-site landscaping. Table 3-1, *Demolition and Construction,* shows the approximate demolition and construction phasing.

TABLE 3-1 DEMOLITION AND CONSTRUCTION

Activity	Work Days
Asphalt and Building Demolition	10
Site Preparation	5
Grading	12
Building Construction	225
Paving	35
Architectural Coating	10

Source: UC Berkeley, 2024.

Demolition would take place over a period of approximately two weeks, while grading and site preparation would be completed over an additional four-week period; construction is expected to occur over a ten-month period. Demolition and construction work would be conducted between 7:00 a.m. and 7:00 p.m. on weekdays. The campus's 2021 LRDP contains Continuing Best Practice (CBP) NOI-2, which limits construction and demolition activities to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park would be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary.

[7] Given the timing of the project, it is assumed that the new building would be constructed in compliance with the California 2022 Building Energy Efficiency Standards (effective January 1, 2023).

Demolition would include removal of existing asphalt pavement on the project site; existing curb and site walls within the project site; clearing of all existing vegetation and landscaping within the project site; and, existing city sidewalk adjacent to the project site, as shown on Figure 3-5, *Demolition Plan*. Demolition debris, including soil, pavement, and vegetation, would be hauled off for disposal. Debris to be hauled would include approximately 31,000 square feet of asphalt/concrete material, and 1,300 cubic yards of grading and soil import. Typical equipment to be used for demolition and site preparation would include excavators, a skid steer loader, a grader, a rubber-tired dozer, scrapers, and an off-highway truck. No pile driving, rock blasting, or crushing would occur during the construction phase. Typical equipment to be used during construction of the project would include a backhoe, a crane, aerial lifts, a generator, a diesel pump, dumpers, rollers, and a paver.

During demolition and construction, vehicles, equipment, and materials would be staged and stored on the project site when practical. During periods of demolition and construction, the sidewalk along Oxford/Fulton Street along the project site frontage could be temporarily inaccessible; pedestrian routes in the public right-of-way would be re-rerouted during these times. The construction site and staging areas would be clearly marked, and construction fencing would be installed to prevent disturbance and safety hazards. A combination of on- and off-site parking facilities for construction workers would be identified during demolition, grading, and construction.

3.5 PROJECT OPERATIONS/PROGRAMS

The proposed programming and schedule for the proposed project is provided in Table 3-2, *Summary of Existing and Proposed Operations*, below. Table 3-2 also shows the existing volleyball program at the existing Clark Kerr Center sand courts.

TABLE 3-2 SUMMARY OF EXISTING AND PROPOSED OPERATIONS

Key Elements	Existing Clark Kerr Center Sand Courts	Proposed Project
Uses	Intercollegiate Athletics (IA) training and competitions, club/intramural play, recreational sports, youth camps, training camps, recreational rentals	Same as existing Clark Kerr Center Sand Courts uses.
Competitive Season	January to May	January to May
Number of Regular Season Competitive Matches	Up to 7 event days for matches	Up to 10 event days for matches
Post Season Play	None	Up to two 4-day additional event days per season that will support regional and final NCAA championships rounds
Number of Streamed (Broadcast) Games	None	Up to 14 games per regular- and post-season play based on conference obligations and existing or future contracts
Typical Competitive Match Days	Friday, Saturday, Sunday series; occasional mid-week match	Friday, Saturday, Sunday series; occasional mid-week match
Average Number of Participants and Spectators	Approximately 50 to 75	Approximately 100
Maximum Number of Participants and Spectators	200	570

Hours of Operation	7:00 a.m. until dusk, 7 days per week	7:00 a.m. until dusk, 7 days per week
Lighting	No existing lighting but portable lights are used on some occasions	New lighting would be used for night games or when community uses are scheduled at night
Public Address (PA) System	No fixed equipment, but a portable PA system is used if needed	New PA system

Notes:
The daily average number of existing beach volleyball participants and spectators using the CKC sand courts fluctuates by season and team success. The daily average number of existing participants and spectators of the CKC sand courts also reflects the fluctuation in the use of the courts by the various sports/recreation groups.
Source: UC Berkeley, 2023.

The proposed program would operate from 7:00 a.m. to approximately dusk, 7 days a week. During the academic school year, the courts would be used for IA beach volleyball practice, training, and youth camps (managed by IA), recreational sports programming (managed by the UC Berkeley Recreational Sports Department), and reservation-based community recreation. In addition, IA beach volleyball competitions would be held in the spring semester. The design of the proposed project includes adequate space for volleyball matches and training. During the summer (June to August), the new beach volleyball courts would also be used for IA training and other recreational sports programming. All of these programs, aside from the special beach volleyball match events, currently operate on the UC Berkeley campus and such programs and participants would not change with the proposed project. In addition, the new beach volleyball courts would also be open to the broader community on a reservation basis, consistent with IA's current reservation practices.

Existing average and maximum participants and spectators associated with existing programs identified in Table 3-2 (i.e., club/intramural play, recreational sports, youth camps, training camps, recreational rentals) would continue with the implementation of the proposed project but would shift to other sites in CKC with the development of the new beach volleyball complex. Such programs could also use the new beach volleyball courts when not in use by IA beach volleyball for training or competitive matches. Portable toilets would be available to the public attending volleyball events. The portable toilets would be on or adjacent to the site.

Existing volleyball matches typically occur on Friday and Saturday afternoons and currently attract an average of approximately 50 to 75 participants and spectators. Game time is approximately 90 to 150 minutes. The participant and spectator attendance are anticipated to be similar to existing conditions at the existing sand courts after implementation of the proposed project with an average of approximately 100 participants and spectators. Matches at the new facility would run approximately 90 minutes to 120 minutes because the project would include five courts. Up to a maximum of approximately 570 participants and spectators during some matches could be physically accommodated by the new beach volleyball complex, including spectators who would use the lawn area. While it is unclear whether the new courts would experience such attendance given past match attendance levels, this Initial Study considers this level of attendance to provide for a conservative analysis.

Up to 14 streamed matches would be possible per IA beach volleyball season, although it is unlikely that there would be that many. Each streamed match is anticipated to have several camera operators on the

court, and additional employees to support the production. A linear broadcast would require satellite truck, a production truck, approximately eight camera operators, and five additional employees. A portable generator would be required for the linear broadcasts. Television trucks would be staged outside the footprint of the facility and park in striped spots on Fulton St. directly west of the site. Linear broadcasts are rare and most likely would not occur each year. Linear broadcasts are determined and scheduled by the conference the University and its Beach Volleyball team are aligned with.

After project implementation, the existing CKC sand courts would be available for daytime use by recreational student participants and the community and would be maintained by Recreational Sports. No physical changes to the existing CKC courts are proposed as part of the project and existing use of the CKC courts for recreational use would continue.

3.6 REQUIRED PERMITS AND APPROVALS

This Initial Study and Mitigated Negative Declaration will be presented to the UC Berkeley Chancellor for adoption and its consideration regarding a final decision on the project. No other agency approval is required for the proposed project. City of Berkeley approval will be required for any activity within the City's right-of-way. UC Berkeley Campus Fire Marshal and Building Department permits are required prior to demolition and construction.

4. *Environmental Analysis*

I. AESTHETICS

Except as provided in Public Resources Code Section 21099 (transit priority area/major transit stop), would the proposed project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?	❒	❒	❒	■
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	❒	❒	❒	■
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	❒	❒	■	❒
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is on the western edge of the Campus Park, which forms the main part of the UC Berkeley campus. The most significant visual characteristics of the Campus Park are the architectural styles of many of the buildings and the natural areas, including Strawberry Creek, that give the Campus Park a parklike feel.

The project site is bound along its eastern edge by Edwards Stadium. However, due to its location at the edge of Campus Park, the project site is surrounded mostly by City streets, including Bancroft Way to the south and Oxford/Fulton Street to the west and north. Low- to mid-rise buildings are on the opposite side of Oxford/Fulton Street, generally containing retail uses on the ground floors and residential on upper floors. The landscape of the project site is consistent with the rest of the Campus Park and includes a partial tree canopy consisting of eucalyptus and evergreen/conifer species.

The project site does not include any scenic vistas as the topography of the vicinity and intervening existing buildings do not provide views of the San Francisco Bay or any other scenic vistas such as the

Berkeley Hills. According to the California Department of Transportation, the project site is not near or in the viewshed of a State scenic highway.[8] The nearest officially designated State scenic highway is State Route 24 approximately 2.5 miles southeast of the project site.

Sources of light and glare at the project site include street lighting along Bancroft Way and Oxford/Fulton Street, and exterior lights typical of the commercial and residential buildings along these roads. More distantly, numerous other lights in Berkeley and on campus contribute to lighting of the night sky. For example, during night matches, lights from the nearby Hellman Tennis Center may illuminate the night sky. Most of the existing buildings around the project area have concrete or stucco finishes that do not produce substantial glare. However, the windows in these buildings contribute to glare when in direct sunlight.

DISCUSSION

a) Would the proposed project have a substantial adverse effect on a scenic vista?

The project site is adjacent to Edwards Stadium and other buildings along Bancroft Way and Oxford/Fulton Street surround the site. These buildings and existing topography of the area block views of scenic vistas such as the San Francisco Bay and Berkeley Hills through the project site. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista. The proposed project would have *no impact* on scenic vistas.

b) Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

The project site is not near or in the viewshed of a State scenic highway. Therefore, the proposed project would not substantially damage scenic resources in a State scenic highway. The proposed project would have *no impact* on scenic resources located within a State scenic highway.

c) Would the proposed project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? Is the project in an urbanized area, and would the project conflict with applicable zoning and other regulations governing scenic quality?

The project site qualifies as an "urban area," as defined in CEQA Guidelines Section 21094.5, because it is in an incorporated city with a population over 100,000 and surrounded by other incorporated cities in the San Francisco Bay Area. UC Berkeley is the only agency with land use jurisdiction on the project site. Therefore, applicable regulations governing scenic quality include UC Berkeley policies and plans. The

[8] California Department of Transportation, 2024, California State Scenic Highway System Map, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa, accessed April 1, 2024.

proposed project would be required to comply with UC Berkeley policies and would be subject to design review by UC Berkeley to ensure adherence to applicable design policies and guidelines, including the campus's Physical Design Framework. The Framework implements the LRDP's goals for aesthetics and visual quality, and includes strategies and guidance for the campus structure, facilities, buildings and public realm. As part of the proposed project, the following UC Berkeley continuing best practices (CBP) pertaining to aesthetics (AES) would be implemented:

- **CBP AES-1:** New projects will as a general rule conform to the Physical Design Framework. While the guidelines in the Physical Design Framework would not preclude alternate design concepts when such concepts present the best solution for a particular site, UC Berkeley will not depart from the Physical Design Framework except for solutions of extraordinary quality.
- **CBP AES-2:** Major new campus projects will continue to be reviewed at each stage of design by the UC Berkeley Design Review Committee. The provisions of the LRDP, as well as project-specific design guidelines prepared for each such project, will guide these reviews.

These CBPs are designed to reduce impacts to visual resources. In addition, UC Berkeley's design review process for new projects ensures adherence to UC Berkeley objectives for preserving important existing visual resources. Compliance with existing UC Berkeley policies, in addition to CBP AES-1 and CBP AES-2, would ensure that the proposed project would not conflict with applicable regulations governing scenic quality. The project's nature, with most of the space dedicated to open volleyball courts, would generally preserve views of the western façade of Edwards Stadium from public viewpoints.

Proposed modifications to the public sidewalk on Bancroft Way and Oxford/Fulton Street and parking on Oxford/Fulton Street would be subject to City of Berkeley requirements and regulations. These project components would not change the aesthetics of the area because the sidewalk would be replaced to generally match existing adjacent sidewalk, and restriping parking would be consistent with the existing parking striping on Oxford/Fulton Street. The proposed project would not adversely change the aesthetics of the public right-of-way.

For the reasons described above, the project would not conflict with applicable zoning and other regulations governing scenic quality. Project impacts in this respect would be *less than significant.*

d) Would the proposed project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

The project site is in an already urbanized and densely populated area containing existing sources of light and glare typical of an urbanized environment. The proposed project would be required to minimize light spillage and glare in accordance with UC Berkeley's Campus Design Standards. These standards require that light fixtures include cut-off shields to prevent light trespass and would be downlit for events within the volleyball complex. These standards also require that, in general, exterior lighting is designed to reduce light pollution and energy consumption while creating a safe and appropriately illuminated campus environment. In addition, lighting would be required to be designed in accordance with other applicable standards, such as the CBC, which includes standards for light power and brightness, shielding, and sensor controls to reduce light pollution and glare.

As describe above in Section 3.3, Project Components, the court lighting would be light-emitting diode (LED) products that provide uniform 80-foot horizontal and vertical candle illumination of the volleyball court areas with minimal light cast beyond the court area and adjacent walkways. The lighting system can and would be managed through scheduling and can be adjusted and monitored in real time. Lights would be turned off (or scheduled to be turned off) each night when recreational or competition has concluded (or the reservation has ended). Illumination of the volleyball court areas would only occur during volleyball events into dusk, lasting no later than 10:00 P.M. Illumination of the volleyball court areas would not be overnight. Site or building mounted lighting would be provided at the athlete entry on the team building to ensure this area is well lit and comfortable for night use. All exterior lighting would be angled downward or have cut-offs to control exterior light pollution.

Furthermore, as part of the proposed project, the following CBPs related to light and glare would be implemented:

- **CBP AES-6:** Lighting for new development projects will be designed to include shields and cut-offs that minimize light spillage onto unintended surfaces and minimize atmospheric light pollution. The only exception to this principle will be in those areas where such features would be incompatible with the visual and/or historic character of the area.
- **CBP AES-7:** As part of UC Berkeley's design review procedures, light and glare will be given specific consideration and measures will be incorporated into the project design to minimize both. In general, exterior surfaces will not be reflective; architectural screens and shading devices are preferable to reflective glass.

These CBPs in combination with the design of the proposed project would ensure that lighting is designed to reduce potential light spillage and glare. Although court lighting would be visible from surrounding streets as well as residences on Oxford/Fulton Street when in use, adherence to applicable UC Berkeley and State standards for reducing substantial light and glare, combined with UC Berkeley's CBPs, would ensure that project impacts would be *less than significant*.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	❒	❒	❒	■
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❒	❒	❒	■
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	❒	❒	❒	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	❒	❒	❒	■
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	❒	❒	❒	■

EXISTING CONDITIONS

The project site is in an urbanized area without agricultural or forest uses. The California Department of Conservation classifies the project site as Urban and Built-Up Land; the site does not contain farmland or grazing land.[9] In addition, the city of Berkeley does not contain land zoned for farmland or timberland production.[10]

[9] California Department of Conservation, 2022, California Important Farmland Finder, https://maps.conservation.ca.gov/dlrp/ciff/, accessed on April 1, 2024.

[10] City of Berkeley, October 2023, Official Zoning Map, https://berkeley.municipal.codes/BMC/OfficialZoningMap, accessed on April 1, 2024.

DISCUSSION

a) Would the proposed project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

The California Department of Conservation classifies the project site as urban and built-up land. The project site is developed with a paved surface parking lot. Therefore, the proposed project would not convert Farmland to non-agricultural use, and *no impact* would occur.

b) Would the proposed project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The project site is in an urbanized area without agricultural uses or zoning. Therefore, the proposed project would not conflict with existing zoning for agricultural use or a Williamson Act contract, and *no impact* would occur.

c) Would the proposed project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

The project site is in an urbanized area without land zoned for forest uses. Therefore, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland, and *no impact* would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

The project site is in an urbanized area without forest uses. Therefore, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use, and *no impact* would occur.

e) Would the proposed project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The project site is in an urbanized area without agricultural or forest uses and is classified as urban and built-up land. Therefore, the proposed project would not result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use, and *no impact* would occur.

III. AIR QUALITY

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	❒	❒	■	❒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standard?	❒	❒	■	❒
c) Expose sensitive receptors to substantial pollutant concentrations?	❒	❒	■	❒
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	❒	❒	■	❒

EXISTING CONDITIONS

Existing conditions at the project site generate very little criteria air pollutants. There is limited landscaping and trees that require routine maintenance, such as mowing. Lawn equipment, such as mowers and trimmers, generate criteria air pollutants. The primary use of the project site currently is a surface parking lot. Vehicles parking on-site generate criteria air pollutants as they travel to and from the parking lot. However, similar emissions would likely occur regardless of the existence of the on-site parking lot because these vehicles would instead park elsewhere in the project area. Specifically, people who currently use the project site for parking would likely utilize the Bancroft Parking Structure, less than one mile from the project site. This is a reasonable assumption because people generally prefer to park as close to their destination as possible and therefore would use parking nearest the project site after parking is no longer available at the site.

The existing UC Berkeley volleyball program generates criteria air pollutants, primarily through the consumption of fuel from vehicle trips associated with spectators and visiting teams to the Clark Kerr Center sand courts. Note that most spectators of the volleyball matches are UC Berkeley students, staff and faculty already on campus and therefore the volleyball program generates very few vehicle trips and associated criteria air pollutants.

DISCUSSION

Criteria Air Pollutants

This section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthy pollutant concentrations. The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O_3), carbon monoxide (CO), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and lead (Pb). Areas are classified under the federal and

California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The San Francisco Bay Area Air Basin (SFBAAB), which is managed by the Bay Area Air Quality Management District (BAAQMD), is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, and nonattainment for PM_{10} under the California AAQS.

Furthermore, BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate an air quality standard or standards, contribute substantially to an existing or projected air quality violation, or substantially contribute to health impacts. Emissions modeling for the proposed project used the latest version of the California Emissions Estimator Model (CalEEMod) and is contained in Appendix A, *Air Quality and Greenhouse Gas Emissions Modeling Data*, of this Initial Study.

Toxic Air Contaminants

In addition to criteria air pollutants, both the State and federal government regulate the release of TACs. The California Health and Safety Code define a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code [USC] Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency, acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make determinations on TAC impacts.

a) Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

BAAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. BAAQMD's most current air quality plan is the 2017 Clean Air Plan, which is a regional and multiagency effort to reduce air pollution in the SFBAAB. In April 2022, BAAQMD updated its CEQA Air Quality Guidelines, which updated the best practices for using performance-based standards requiring guidance on evaluating the climate impacts of land use projects and plans.[11] Regional growth projections are used by BAAQMD to forecast future emission levels in the SFBAAB; typically, only large, regionally significant projects have the potential to affect regional growth

[11] Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act Air Quality Guidelines. Retrieved on November 5, 2024, from https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

projections. The proposed project would involve the demolition of an existing parking lot and the construction of a new volleyball facility to accommodate volleyball events already happening at UC Berkeley but in a new location.

The proposed project would not result in or facilitate an increase in student enrollment or faculty or staff employment. The proposed project is not considered a regionally significant project under CEQA Guidelines Section 15206 that could affect regional vehicle miles traveled (VMT) and warrant intergovernmental review by the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC).

Because the proposed project would not increase student capacity at UC Berkeley, it would not exceed the level of population or housing currently projected by the university, and it would therefore not have the potential to substantially affect housing, employment, or population projections within the region, which is the basis of the 2017 Clean Air Plan projections.

Furthermore, regional emissions generated by the proposed project would be less than BAAQMD's emissions thresholds with mitigation, as discussed under criterion (b) that follows. These thresholds were established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the proposed project would not conflict with or obstruct implementation of the 2017 Clean Air Plan, and impacts would be considered *less than significant.*

b) Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under applicable federal or State ambient air quality standards?

BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$. Development projects below these significant thresholds are not expected to generate sufficient criteria air pollutant emissions to violate an AAQS or contribute substantially to an existing or projected air quality violation.

Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on-site would vary daily as construction activity levels change. Construction activities associated with the proposed project would result in emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$. An estimate of construction emissions associated with construction of the proposed project are shown in Table 4-1, *Construction-Related Criteria Air Pollutant Emissions Estimate.* The average daily emissions shown in Table 4-1 were quantified based on the annual construction emissions divided by the total number of active construction days.

TABLE 4-1 CONSTRUCTION-RELATED CRITERIA AIR POLLUTANT EMISSIONS ESTIMATE

	Criteria Air Pollutants (Total lbs.) [a]					
Year	**ROG**	**NO_X**	**Fugitive PM_{10} [b]**	**Exhaust PM_{10}**	**Fugitive $PM_{2.5}$ [b]**	**Exhaust $PM_{2.5}$**
2025 Construction	120	1,220	80	60	20	40
2026 Construction	80	320	10	20	10	20
	Criteria Air Pollutants (Average lbs./day)[a]					
	ROG	**NO_X**	**Fugitive PM_{10} [b]**	**Exhaust PM_{10}**	**Fugitive $PM_{2.5}$ [b]**	**Exhaust $PM_{2.5}$**
Average Daily Construction Emissions at all Construction Phases	<1	4	<1	<1	<1	<1
Air District Average Daily Project-Level Threshold	54	54	Implement BMPs	82	Implement BMPs	54
Exceeds Average Daily Threshold	**No**	**No**	**NA**	**No**	**NA**	**No**

Notes: BMP = Best Management Practices; NA = not applicable; emissions may not total to 100 percent due to rounding; shading represents the fugitive dust component of the emissions that are mitigated through BAAQMD's best management practices.

a. Construction modeling assumed a 12-month construction duration, based on the schedule provided for the proposed project. CalEEMod assumes that vehicle fuel efficiency and emissions standards incrementally improve over time. If the construction schedule moves to a later date, modeling based on a start year of 2025 would be conservative as vehicle and equipment emission rates are assumed to improve with each year. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.

b. Includes implementation of best management practices for fugitive dust control required by the Bay Area Air Quality Management District (BAAQMD). Implementation of BAAQMD construction best management practices is considered to result in construction-related fugitive dust emissions that are acceptable. See CBP AIR-2.

Source: CalEEMod 2022.1.1.28

Construction Exhaust Emissions

Construction emissions are based on the preliminary construction schedule developed for the proposed project, included as Table 3-1, *Demolition and Construction*, which would involve asphalt and building demolition, site preparation, grading, building, paving, and architectural coating. To determine potential construction-related air quality impacts, criteria air pollutants generated by project-related construction activities are compared to BAAQMD's significance thresholds.

As shown in Table 4-1*,* criteria air pollutant emissions from construction equipment exhaust would not exceed BAAQMD's average daily thresholds. Therefore, construction-related criteria pollutant emissions from exhaust would be *less than significant*. In addition, as part of the proposed project, the following UC Berkeley CBP pertaining to air quality (AIR) would be implemented:

- **CBP AIR-3:** UC Berkeley will continue to implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:
    - Equipment will be properly serviced and maintained in accordance with the manufacturer's recommendations.

- Construction contractors will also ensure that all nonessential idling of construction equipment is restricted to five minutes or less, in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Fugitive Dust

Ground-disturbing activities during project construction could generate fugitive dust (PM_{10} and $PM_{2.5}$) that, if left uncontrolled, could expose the areas downwind of the construction site to air pollution from construction dust. Fugitive PM_{10} is typically the most substantial source of air pollution from the dust generated from construction. The amount of fugitive dust generated during construction would be highly variable and depends on the amount of material being demolished, the type of material, moisture content, and meteorological conditions. BAAQMD does not provide a quantitative threshold for construction-related fugitive dust emissions, and a project's fugitive dust emissions are considered to be acceptable with implementation of BAAQMD's best management practices. In other words, there could be a significant impact if the best management practices are not enforced.

The following UC Berkeley CBP pertaining to air quality (AIR) addresses fugitive dust generated by construction activities:

- **CBP AIR-2:** UC Berkeley will continue to comply with the current Bay Area Air Quality Management District basic control measures for fugitive dust control. The requirement to comply with the basic control measures will be identified in construction bids. The Bay Area Air Quality Management District's current basic control measures include:
  - Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering shall be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water shall be used whenever possible.
  - Pave, apply water twice daily, or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
  - Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
  - Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas, and staging areas at the construction site to control dust.
  - Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
  - Hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
  - Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).

- Limit vehicle traffic speeds on unpaved roads to 15 miles per hour.
- Replant vegetation in disturbed areas as quickly as possible.

With implementation of CBP AIR-2, the proposed project would be consistent with BAAQMD's best management practices, and this impact would be *less than significant*.

Operational Emissions

The BAAQMD developed screening criteria for criteria air pollutants and precursors in its 2022 CEQA Air Quality Guidelines. These screening criteria are not thresholds of significance for CEQA impacts. Instead, the screening criteria provides lead agencies with a conservative indication of whether implementing a proposed project could result in potentially significant criteria air pollutants and precursors impacts. If the screening criteria for criteria air pollutants and precursors are met by a proposed project, then the lead agency need not perform a detailed assessment of the project's criteria air pollutant and precursor emissions.[12]

The BAAQMD 2022 CEQA Air Quality Guidelines do not provide screening criteria specific to beach volleyball facilities. However, the BAAQMD 2022 CEQA Air Quality Guidelines do provide screening criteria for sports arenas. According to the BAAQMD 2022 CEQA Air Quality Guidelines, the operation of sports arenas that are 600,000 square feet or less meet the screening criteria and therefore require no detailed assessment of air pollutant and precursor emissions. Accounting for the entire project site, the proposed project would be 1.1 acre, which is equal to approximately 47,916 square feet:

1.1 acres X 43,560 square feet per acre = 47,916 square feet

Therefore, at approximately 47,916 square feet, the proposed project would be well below the screening criteria for a sports arena, which is 600,000 square feet. Although the project is not a sports arena, it is appropriate to apply the screening criteria to the proposed project because the proposed project would be home to a sports team (i.e., UC Berkeley women's beach volleyball), include a team building, spectator seating, scoreboard, support for broadcasting, and other components typical of a sports arena, albeit on a substantially smaller scale.

The proposed project would generate operational criteria air pollutant emissions principally from area sources. As shown in Table 4-2, *Operational Criteria Air Pollutant Emissions Estimates*, the operational emissions generated by the proposed project would not exceed the BAAQMD daily pounds per day or annual tons per year project-level thresholds. Table 4-2 does not include criteria air pollutant emissions resulting from mobile sources, which are the vehicle trips made by spectators and visiting teams for volleyball matches and events. While the proposed project would accommodate more spectators than

[12] Bay Area Air Quality Management District (BAAQMD). 2022. California Environmental Quality Act Air Quality Guidelines. Retrieved on November 5, 2024, from https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines

the existing Clark Kerr sand courts. Even if attendance numbers were to increase, it is reasonable to exclude mobile source emissions from project operation because the proposed project would generate low vehicle miles traveled (VMT) (see Section XVII. Transportation). Briefly, as described in Section XVII. Transportation, the *Technical Advisory on Evaluating Transportation Impacts in CEQA* states that certain types of projects within 0.5 mile of high-quality transit stops, such as the BART station at the corner of Shattuck Avenue and Allston Way, can be assumed to have less than significant impacts related to VMT. The types of projects for which this assumption applies include residential, retail, and office projects, or a mix of these projects. Sports and athletics projects are not described. However, given that the project includes no vehicle parking, is approximately 1,000 feet from high-quality transit, and would redistribute trips from Clark Kerr sand courts rather than create new trips, it is reasonable to assume that project VMT would not be substantial. Studies have documented a correlation in VMT and air pollution, such that increased VMT results in more tailpipe emissions.[13,14] As the project would have low VMT given its proximity to the BART station and campus housing and facilities, it can be reasonably assumed that mobile emissions would be negligible, especially when existing trips to the Clark Kerr sand courts are accounted for. Visting team trips, which may be lengthier than spectator trips, would happen only several times per volleyball season and therefore would result in negligible emissions. As shown in Table 4-2, the proposed project would not result in an exceedance of any BAAQMD significance threshold during operation. Therefore, the proposed project would not cumulatively contribute to the nonattainment designations of the SFBAAB. Project-related operation impacts to the regional air quality would be *less than significant*.

TABLE 4-2 OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (tons per year)			
Category	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	<1	<1	<1	<1
Energy	<1	<1	<1	<1
On-Road Mobile	N/A	N/A	N/A	N/A
Total	<1	<1	<1	<1
BAAQMD Annual Project-Level tons/year Threshold	**10**	**10**	**15**	**10**
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No

[13] California Department of Transportation (Caltrans). 2024. SB 743 at 10: The Environmental Effects of Traffic. Retrieved on November 5, 2024, from https://dot.ca.gov/programs/esta/sb-743/resources/10-years-sb743

[14] Coalition for Clean Air. 2023. Vehicle Miles Traveled. Retrieved on November 5, 2024, from https://www.ccair.org/advocacy/vehicle-miles-traveled/#:~:text=The%20Coalition%20for%20Clean%20Air%20is%20particularly%20interested%20in%20VMT,due%20to%20increased%20tailpipe%20emissions.

TABLE 4-2 OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (average pounds per day)			
Category	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project Total	<1	<1	<1	<1
BAAQMD Average Daily Project-Level lbs/day Threshold	**54**	**54**	**82**	**54**
Exceeds BAAQMD's lbs/day Threshold?	No	No	No	No

Notes: Emissions may not total to 100 percent due to rounding; Reactive Organic Gases = ROG; Nitrogen Oxides = NO_x; Coarse Inhalable Particulate Matter = PM_{10}; Fine Inhalable Particulate Matter = $PM_{2.5}$.

Source: CalEEMod Version 2022.1.1.28

c) Would the proposed project expose sensitive receptors to substantial pollutant concentrations?

The proposed project would not include sources of stationary equipment that would require an air permit from the BAAQMD. Additionally, the project would not generate long-term operational emissions at the project site. Furthermore, as discussed above under subpart (b) of this section, the proposed project would not exceed BAAQMD thresholds for criteria pollutants; therefore, it would not expose sensitive receptors to substantial concentrations of criteria pollutants.

Construction-related activities would result in temporary project-generated emissions of DPM exhaust emissions from off-road, heavy-duty diesel equipment for demolition, site preparation, grading, building construction, paving, and other construction activities. DPM was identified as a toxic air contaminant (TAC) by CARB in 1998 (CARB 2022b). The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these requirements would minimize emissions of TACs during construction. As shown in Table 3-1, these construction activities would require a total of approximately 27 days. There would be no extended duration of exposure to substantial pollutant concentrations resulting from construction of the proposed project. Also as show in Table 4-1, average particulate matter exhaust emissions (typically the primary TACs in health risk assessments [HRAs]) are a small percentage of the threshold. The proposed project would not result in substantial VMT (see Section XVII. Transportation) or include any stationary sources, so TAC emissions from operations are anticipated to be negligible.

This impact would be *less than significant*.

Mobile-Source Emissions: Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of CO, called hotspots. These pockets have the potential to exceed the State 1-hour standard of 20 ppm or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for periods of time and are subject to reduced speeds.

A project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—to generate a significant CO impact.[15] The proposed project would change the routes that spectators and visiting teams to use to travel to and from beach volleyball events at UC Berkeley. However, the proposed project would include capacity for no more than 500 spectators. The project site is proximate to public transit (see Section XVII, Transportation) and campus and student housing, which would encourage spectators to use transit rather than drive to events. Nonetheless, even if every spectator were to drive to a volleyball match, the number of trips would be well below 44,000 or 24,000 vehicles per hour. Most of the spectator trips would occur on roads that would be used regardless of whether the volleyball match occurs at their existing location or the project site, such as Shattuck Avenue. In other words, because the proposed project would not result in an increase in student capacity or employment and would not generate substantial new VMT (see Section XVII. Transportation), the proposed project would not increase traffic volumes at nearby intersections to more than BAAQMD's screening criteria of 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Therefore, the proposed project would not have the potential to substantially increase CO hotspots at intersections in the project vicinity, and localized air quality impacts related to mobile-source emissions would be *less than significant.*

d) Would the proposed project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The type of facilities that are typically considered to have objectionable odors include wastewater treatment plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. Based on the scope and nature of the project, it would not be a facility that generates substantial odors that would affect a substantial number of people. A beach volleyball facility is not a land use associated with foul odors that constitute a public nuisance.

[15] Bay Area Air Quality Management District, 2023. *2022 California Environmental Quality Act Air Quality Guidelines*, https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa-guidelines-2022/ceqa-guidelines-chapter-4-screening_final-pdf.pdf?sc_lang=en.

During project-related construction activities on the project site, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, such as residences on the opposite side of Oxford/Fulton Street they would be diluted with similar existing odors in the area, such as exhaust odors from vehicles traveling on Oxford/Fulton Street. Impacts would be *less than significant*.

IV. BIOLOGICAL RESOURCES

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plan, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	❒	❒	■	❒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	❒	❒	❒	■
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❒	❒	❒	■
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	❒	❒	■	❒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❒	❒	■	❒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	❒	❒	❒	■

EXISTING CONDITIONS

The UC Berkeley campus is on the western slopes of the Berkeley Hills, comprising the upper watersheds of Strawberry and Claremont Canyons. The project site is in the southwest corner of the Campus Park at the campus boundary at Bancroft Way and Oxford/Fulton Street. Both Bancroft Way and Oxford/Fulton Street are developed with urban uses in the project area. Because of the developed character of the project area, vegetation is limited to small street trees. However, mature and large eucalyptus and conifer trees occur on the project site or immediately adjacent to the project site within the right-of-way of Oxford/Fulton Street. Maintained or mowed grass occurs beneath the trees and around the paved parking areas on the project site.

Due to the extent of development on the site and surrounding the site, the project site does not provide suitable habitat for special-status plant or animal species, except for nesting by raptors such as the peregrine falcon pair and possibly roosting by several species of bats. Impervious surfaces provide little opportunity for use by wildlife, and species found in the vicinity are typical in urbanized areas. The

project site does not include sensitive natural communities or wetlands. No important wildlife movement corridors or nursery areas are present on the project site. The project site is not within the boundaries of an adopted or approved Habitat Conservation Plan or Natural Community Conservation Plan.

DISCUSSION

a) Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plan, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No special-status species are known or expected to occur at the project site, especially with the intensity of human activity in the urbanized area and proximity to Edwards Stadium, Bancroft Way, and Fulton/Oxford Street, as well as downtown Berkeley development. However, there is a remote possibility that one or more raptors and other native birds may establish a nest in the scattered trees on or immediately adjacent to the project site prior to construction. In addition, there is a remote potential for roosting by one or more special-status bat species in the mature trees, although this is unlikely because of the extent of ongoing human activity on and next to the project site. Preconstruction surveys for nesting birds and roosting bats would be necessary where suitable habitat for these species is present on the project site. As part of the proposed project, the following UC Berkeley CBPs pertaining to biological resources (BIO) would be implemented:

- **CBP BIO-1:** Avoid disturbance or removal of bird nests protected under the federal Migratory Bird Treaty Act and California Department of Fish and Game Code when in active use. This will be accomplished by taking the following steps.
    - If tree removal and initial construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds will be conducted by a qualified biologist within 14 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within up to 500 feet of proposed construction, with the distance to be determined by a qualified biologist based on project location. The site will be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or curtailed for more than seven days during the nesting season.
    - If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), tree and vegetation removal and building construction may proceed with no restrictions.
    - If bird nests are found, an adequate setback will be established around the nest location and vegetation removal, building demolition, and other construction activities shall be restricted within this no-disturbance zone until the qualified biologist has confirmed that birds have either not begun egg-laying and incubation, or that the juveniles from those nests are foraging independently and capable of survival outside the nest location. Required setback distances for the no-disturbance zone will be based on input received from the California

Department of Fish and Wildlife and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone will be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the site.

- A report of findings will be prepared by the qualified biologist and submitted to the UC Berkeley's Office of Physical & Environmental Planning for review and approval prior to initiation of vegetation removal, building demolition and other construction activities during the nesting season. The report will either confirm absence of any active nests or confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if vegetation removal and other construction is initiated during the non-nesting season and continues uninterrupted according to the above criteria.

- **CBP BIO-2:** Avoid remote potential for direct mortality of special-status bats and destruction of maternal roosts. A preconstruction roosting survey for special-status bat species, covering the project construction site and any affected buildings, will be conducted during the months of March through August prior to commencement of any project that may impact suitable maternal roosting habitat on the Campus Park, the Hill Campus East, and other UC Berkeley properties with suitable roosting habitat, as defined below. The survey will be conducted by a qualified biologist no more than 30 days prior to initiation of disturbance to potential roosting habitat, as defined below.

  Suitable roosting habitat shall be determined as follows: In the Campus Park and other urbanized UC Berkeley properties, surveys will be conducted for construction projects prior to remodel or demolition of buildings with isolated attics. A report of findings will be prepared by the qualified biologist and submitted to the UC Berkeley project manager for review and approval prior to initiation of grading, vegetation removal, or construction activities. If any maternal roosts are detected during the months of March through August, construction activities will either stop or continue only after the roost is protected by an adequate setback approved by a qualified biologist. To the full extent feasible, the maternal roost location will be preserved, and alteration will only be allowed if a qualified biologist verifies that bats have completed rearing young, that the juveniles are foraging independently and capable of survival, and bats have been subsequently passively excluded from the roost location.

These CBPs establish a series of actions with which UC Berkeley and project contractors would comply to ensure that no significant impacts to special-status species would occur consistent with other existing federal, State, and UC regulations. These CBPs would serve to identify sensitive resources and provide adequate avoidance, and impacts on special-status species would therefore be *less than significant*.

b) Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The project site and immediate surroundings do not include any riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. Therefore, *no impact* to riparian habitat or other sensitive natural communities would occur as a result of the proposed project.

c) Would the proposed project have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The project site is not in or near protected wetlands. Therefore, *no impact* to State or federally protected wetlands would occur as a result of the proposed project.

d) Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The project site is of limited wildlife habitat value due to the extent of past disturbance, lack of protective cover, and intensity of on-site and nearby human activity. The project site does not contain aquatic habitat that would support migratory fish, and the urbanized surroundings do not contain an important wildlife corridor. Compliance with CBP BIO-1 and CBP BIO-2 would ensure that impacts of the proposed project would remain *less than significant*.

e) Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed project would involve the removal of 14 trees, which could include potential specimen trees. The proposed project would be required to comply with UC Berkeley policies, including the Campus Specimen Tree Program and the Campus Design Standards, which protect biological resources, including sensitive habitat, trees, and waterways. In compliance with the Campus Specimen Tree Program, the proposed project would either transplant the specimen trees, or replace them at a 3:1 ratio. Furthermore, as part of the proposed project, the following biological resources CBPs would be implemented:

- **CBP BIO-9:** Adverse effects to specimen trees and plants will be avoided. UC Berkeley will continue to implement the Campus Specimen Tree Program to reduce effects to specimen trees and flora. Replacement landscaping will be provided where specimen resources are adversely affected, either through salvage and transplanting of existing trees and shrubs or through new horticulturally appropriate replacement plantings, as directed by the Campus Landscape Architect.
- **CBP BIO-10**: Implementation of the recommendations of the Landscape Master Plan and subsequent updates, and project-specific design guidelines, will provide for stewardship of existing landscaping, and use of replacement and expanded tree and shrub plantings to improve the important open space characteristics and resilience of the Campus Park. Native plantings and horticulturally appropriate species will continue to be used in future landscaping, serving to partially replace any trees lost as a result of development.
- **CBP BIO-11**: Trees and other vegetation require routine maintenance. As trees age and become senescent, UC Berkeley will continue to undertake trimming, thinning, or removal, particularly if trees become a safety hazard. Vegetation in the Hill Campus East requires continuing management for fire safety, emergency evacuation, habitat enhancement, and other objectives. This may include removal of mature trees such as native live oaks and non-native plantings of eucalyptus and pine.

The Landscape Master Plan, Landscape Heritage Plan and their subsequent updates will provide guidance on potential species to replace trees that are removed, where appropriate.

Compliance with UC Berkeley's CBPs would ensure that the proposed project would not conflict with local policies or ordinances protecting biological resources and impacts would remain *less-than-significant*.

f) Would the proposed project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

The proposed project is not on land that is within a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Therefore, the proposed project would not conflict with the provisions of any conservation plans and *no impact* would occur.

V. CULTURAL RESOURCES

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	❒	❒	■	❒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	❒	■	❒	❒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	❒	❒	■	❒

EXISTING CONDITIONS

The San Francisco Bay region has been occupied by humans for at least 12,000 years. Prior to European arrival in the eighteenth century, the project site was in territory occupied by the Ohlone people, specifically the Huchiun Ohlone who spoke the Chochenyo Ohlone dialect. The Spanish and Mexican Period began around 1769, when Spanish explorers first arrived in the San Francisco Bay. Native peoples were relocated to various Franciscan missions established throughout the region in efforts to convert them into Spanish citizens and to Catholicism. During the Spanish period, Ohlone populations were subjected to disease and poor conditions of the Mission System; however surviving descendants remain an important part of the social fabric of the Bay Area today. The lands where the project site is located were part of the East Bay ranch holdings of Mission Dolores in present-day San Francisco, and later Mission San José in present-day Fremont. When Mexico gained independence from Spain in 1822, these mission lands were supposed to be granted to the Native Americans residing in the area. However, Mexican authorities offered generous land grants to prominent families and military officers, and by the end of 1823, private landholders had taken control of the entire East Bay shore north of San Leandro Creek. Present-day Berkeley and surrounding areas were part of a large grant called Rancho San Antonio, where primary economic activities included cattle ranching and logging. The California Gold Rush, starting in 1848, combined with California statehood in 1850, drew many more settlers to the area. Permanent settlement and development of the East Bay region began in the 1850s. Anglo-American pioneers soon claimed ownership of much of the land in what was formerly the Rancho San Antonio lands. The first intensive settlement in the East Bay region was in present-day downtown Oakland, which was incorporated as a town in 1852. Alameda County was established in 1853.

Frederick Law Olmsted, a renowned landscape architect and urban planner, was hired in 1864 by the College of California to develop the UC Berkeley campus's master plan. Development on the UC Berkeley campus expanded steadily along with the city of Berkeley, which incorporated in 1878. Today, many of the buildings on the UC Berkeley campus are on the National Register, California Register of Historic Resources (California Register), or California Historical Landmarks. With regard to the project site, the

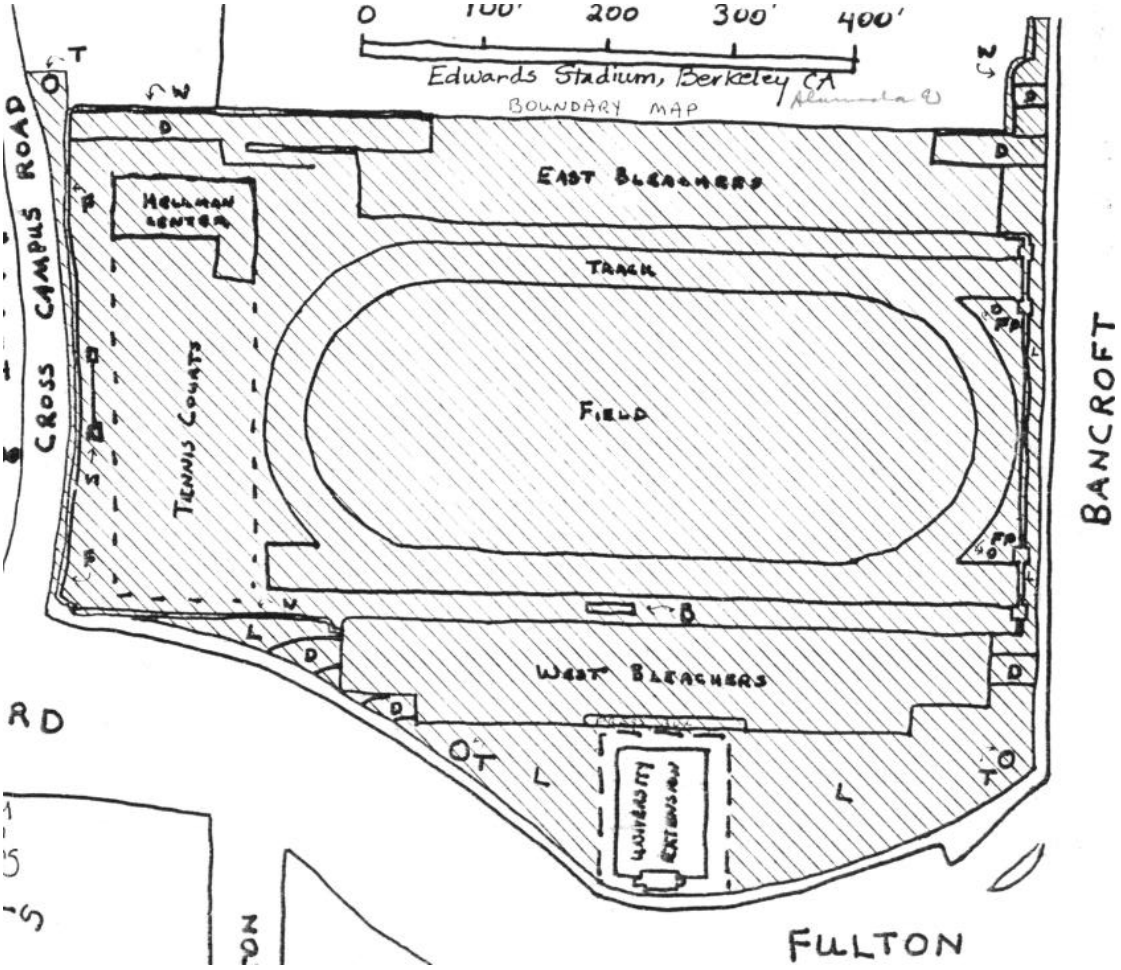
existing Edwards Stadium, immediately adjacent to the eastern site boundary, is listed on the National Register of Historic Places in 1993.

A Historical Resources Impact Assessment (HRIA) was prepared for the proposed project by Rincon Consultants, Inc. (see Appendix B, *Historical Resources Impact Assessment*, of this Initial Study).[16] The HRIA provides a detailed discussion of Edwards Stadium. Edwards Stadium is a reinforced-concrete, track and field stadium with cast concrete ornament in the Moderne style. The stadium's footprint is generally rectangular, while the facility occupies an irregular site that slopes downward from east to west. When Edwards Stadium was listed on the National Register of Historic Places in 1993, the nomination described eligibility for listing under Criterion A and Criterion C.

The resource boundary for the nominated property included the entirety of the stadium, its frontage along Bancroft Way, areas to the north to Cross Campus Road (now Frank Schlessinger Way) and areas to the west of the stadium's frontage along Fulton/Oxford Street, as shown in Figure 4-1. As shown in Figure 4-1, the designation boundary fully encompasses the project site.

[16] Rincon Consultants, Inc., August 2024, *Historical Resources Impact Assessment for the Cal Womens Beach Volleyball Project*. See Appendix B, *Historical Resources Impact Assessment*, of this Initial Study.

Figure 4-1 Designation Boundary of Edwards Stadium



As discussed in the HRIA, contributing elements included in the nomination of Edwards Stadium include not only the stadium structure, but also ancillary features like ticket booths and flagpoles. Table 4-3, *Edwards Stadium Contributing and Non-Contributing Elements*, provides a summary of the contributing and non-contributing elements included in the nomination of Edwards Stadium to the National Register of Historic Places. Table 4-3 lists three ticket booths. Originally there were four ticket booths, but one was demolished when the University baseball field was constructed.

TABLE 4-3 EDWARDS STADIUM CONTRIBUTING AND NON-CONTRIBUTING ELEMENTS

Contributing Elements	Non-Contributing Elements
3 Ticket Booths	Tennis Building (Hellman Center)
Central field (stadium interior)	Tennis center-related structures
Landscape areas	Track (stadium interior)
East and west Bleachers, walls, and fence	
Scoreboard frame (stadium interior)	
2 Flagpoles (stadium interior)	
Memorial Bench (stadium interior)	

Source: Rincon Consultants, Inc., August 2024, *Historical Resources Impact Assessment for the Cal Womens Beach Volleyball Project*. See Appendix B, *Historical Resources Impact Assessment*, of this Initial Study

As discussed in the HRIA, of the contributing elements identified in Table 4-3, two of the ticket booths and remnants of historic landscaping are located within the project site, while the stairs and concourse entrances of the west bleachers are located directly adjacent to project site. The National Register of Historic Places nomination notes the west side of the Stadium's site resulted from the extension of Oxford Street at angle to join Fulton Street at the time the stadium was built.

As part of the HRIA, a Rincon Architectural Historian visited the project site on June 19, 2024. As described in the HRIA, the site visit in June 2024 confirmed that several changes have occurred in the western area of the stadium site since the 1993 nomination. Changes include the demolition of the University Extension Building from the area now containing a surface parking lot at the center of the project site in 2018. Since 2018, the former site of the building has been paved over with asphalt. Landscaped areas to the north and south of the former building site appear to have been reduced in size since their original construction and now feature mature trees. Asphalt paving has also been extended to most areas abutting the west bleacher stairs, where grass appears to have been in place historically. Overall, the landscaping within the western perimeter of the stadium site does not strongly convey its appearance relative to Edwards Stadium's period of significance. As such, it does not contribute to the stadium's significance.

According to Preservation Brief 17, *Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character*, there is a three-step process to identifying character-defining features.[17] Step 1 involves assessing the distinguishing physical aspects of the exterior of the building as a whole, including its setting, shape and massing, orientation, roof and roof features, projections, and openings. Step 2 looks at the building more closely—at materials, trim, secondary features, and craftsmanship. Step 3 encompasses the interior, including individual spaces, relations or sequences of spaces (floor plan), surface finishes and materials, exposed structure, and interior.

As described in the HRIA, Edwards Stadium embodies the distinctive characteristics of a type, represents the work of a master, and it possesses high artistic values, and is associated with the track and field program of the University of California and its many distinguished athletes and teams. As such, its character-defining features relate to its association with the stadium's historic athletic programming and its architectural characteristics present during the period of significance 1932-1943. These include the following:

- Reinforced-concrete construction
- East and West Bleacher structures
- North and south concourse gates beneath West Bleachers
- Cast concrete ornamentation with Moderne styling
- Concrete wall with pylons, obelisks, and paneling that encloses field at south end of stadium
- Concrete stairs extending westward from entrance gates along the west side of stadium
- Wood gates at concourse's vehicle and pedestrian (stair) entrances
- Ticket Booths at northwest, southwest, and southeast corners of stadium

Besides the Edwards Stadium site, there are no other properties listed on the National Register of Historic Places adjacent to or within the project site. However, two nearby properties, defined in this section of the Initial Study as immediately facing the project site, have been designated as Berkeley City Landmarks. The two properties facing the project site that are designated as Berkeley City Landmarks include: Odd Fellows Temple at 2288 Fulton Street (Landmark #55) and William T. Such Building at 2140 Oxford Street (Landmark #43). Edwards Stadium is also a Berkeley City Landmark (Landmark #177).[18]

UC Berkeley conducted a records search of the Northwest Information Center of the California Historical Resources Information System (CHRIS) to determine if there are known archaeological resources on or immediately adjacent to the project site. The CHRIS search results indicate there are no known

[17] Lee H. Nelson, *Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character*, Preservation Brief No. 17. U.S. Department of the Interior, National Park Service, Technical Preservation Services.

[18] City of Berkeley, January 2023. List of Designated City Landmarks, Structures of Merit & Historic Districts. Available at: https://berkeleyca.gov/sites/default/files/documents/COB%20Landmarks%20Updated%20Jan%202023_0.pdf

archeological resources within or immediately adjacent to the project site. While no precontact or historic archeological cultural resources have been identified in the project site, the vicinity does contain Native American precontact resources. [19]

DISCUSSION

a) Would the proposed project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

CEQA Section 21084.1 requires a lead agency to determine whether a project may have a significant effect on the environment, which includes historical resources. Impacts to a historical resource occur when there is a substantial adverse change in the significance of a resource such that it is materially impaired. Material impairment is defined as demolition or alteration "in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register."[20] Under Section 15064.5 of the CEQA Guidelines, a project that is found to conform with the Secretary of the Interior's Standards for Rehabilitation (Standards) is generally found to not result in significant impacts to historic resources under CEQA.

The Standards establish professional standards and provide guidance on the preservation and protection of historic properties. The Standards make broad-brush recommendations for maintaining, repairing, and replacing historic materials, as well as designing new additions or making alterations. They cannot, in and of themselves, be used to make essential decisions about which features of a historic property should be saved and which might be changed. Rather, they provide philosophical consistency to the work.[21] There are Standards for four distinct, but interrelated, approaches to the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction. Following the guidance of the Standards, the Rehabilitation Standards are most appropriate for the current project because of the stadium's current physical condition and the work proposed.

A Historical Resources Impact Assessment (HRIA) was prepared for the Proposed Project by Rincon Consultants, Inc. (see Appendix B, *Historical Resources Impact Assessment*, of this Initial Study).[22] This discussion is based on the conclusions in the HRIA and considers potential impacts to Edwards Stadium resulting from construction and operation of the proposed project. The impact assessment relies upon an analysis of the applicable Secretary's Standards for Rehabilitation. A summary of the analysis of each applicable Rehabilitation Standard in the HRIA is provided below.

[19] The CHRIS search results are confidential information but kept on file at UC Berkeley, Capital Strategies, Physical and Environmental Planning.

[20] CEQA Guidelines Section 15064.5[b][2][A].

[21] Weeks and Grimmer 2017, 3.

[22] Rincon Consultants, Inc., August 2024, *Historical Resources Impact Assessment for the Cal Womens Beach Volleyball Project*. See Appendix B, *Historical Resources Impact Assessment*, of this Initial Study.

Rehabilitation Standard No. 1: A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

The proposed project would demolish existing landscaped areas at the north, south, and west perimeter of the site. Construction of the project would require relocation of two historic ticket booths within the site. The two historic ticket booths would be relocated to accommodate aerial fire apparatus access. Components of the proposed project, including the sand volleyball courts, ball screens, berm spectator seating, and the team building would be built to the west of Edwards Stadium. A concrete retaining wall with fence would be constructed along the west perimeter of the site. The berm seating areas would be built to the north of the courts and along the west side of Edwards Stadium, between the stadium's concrete stairs. The stairs are not included within the project site and the proposed project does not include altering or modifying the stadium stairs. The proposed berm seating would not touch the historic stairs.

Overall, the proposed project would not result in a change of use of Edwards Stadium; the stadium would continue to serve as a track and field facility with no changes proposed to the stadium's structure, character-defining architectural features adjacent to the site (west bleachers, stairs, concrete detailing). Landscaping that would be removed represents remnants of historic landscaping that have been periodically modified since 1932 and do not appear to convey their historic design to a high degree.

The ticket booths proposed for relocation would be situated within a similar setting adjacent to the stadium, with one at the north end of the project site and one at the south. Overall, their ability to contribute to the significance of Edwards Stadium would remain, as they would feature a similar spatial relationship with the stadium and continue to be contributing elements to the historical resource.

The proposed volleyball courts and team building would be physically separated from the stadium, such that the stadium's mass, angular forms of the west bleachers, and exterior features adjacent to the project site would not be altered and would continue convey the site's historic character. The design of the proposed project is consistent with guidance provided in the Standards that advises, "locating new construction far enough away from the historic building, when possible, where it will be minimally visible and will not negatively affect the building's character, the site, or setting."[23] The setting would be altered, but the courts and team building are designed as subordinate to the stadium in terms of scale and massing and would result in minimal change to the defining characteristics of Edwards Stadium. Therefore, Rehabilitation Standard No. 1 would be satisfied.

[23] Revised by Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings.* Washington, D.C.: U.S. Department of the Interior, National Park Service, Technical Preservation Services. 2017. https://www.nps.gov/orgs/1739/upload/treatment-guidelines-2017-part1-preservation-rehabilitation.pdf

Rehabilitation Standard No. 2: The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

The historic character of Edwards Stadium is comprised of the physical elements that represent its significance as a track and field stadium constructed of reinforced-concrete and detailed in the Moderne style. As originally designed, the stadium's West Bleachers and entrance stairs faced a landscaped, irregularly shaped site to the west with a nonextant University building at center. Since 1932 several alterations have occurred within this landscaped area, including demolition of the building that stood in at the center of the project site in 2018, and an overall reduction in landscaped area with additional non-historic paved areas. The stadium's character-defining features, as described above, including its reinforced-concrete construction, stairs and entrances, and cast concrete ornamentation would to be retained without modification as part of the proposed project. The historic ticket booths proposed for relocated within the project site would be retained and would have a similar spatial relationship to the stadium in their relocation positions. Furthermore, the overall spatial relationship between the stadium and the adjacent area to the west would remain largely the same and retain the same visual rhythm of generally open space adjacent to the enclosed walls of the stadium. Therefore, Rehabilitation Standard No. 2 would be satisfied.

Rehabilitation Standard No. 4: Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

Edwards Stadium's period of significance is 1932 to 1943. No changes that occurred to the stadium or its site after 1943 have gained significance. Therefore, the project would be compliant with Rehabilitation Standard No. 4.

Rehabilitation Standard No. 5: Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

The only historic character-defining features of the Edward's Stadium property that would be altered by the proposed project are the two historic ticket booths proposed for relocation within the project site. The materiality, form, and overall design of the ticket booths would remain intact. The ticket booths would remain within the historic designation site and retain a similar spatial relationship to the stadium. Therefore, the ticket booths would continue to convey their historic character to be contributing elements to the historical resource. Accordingly, the project would be compliant with Rehabilitation Standard No. 5.

Rehabilitation Standard No. 6: Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

No additional work to Edwards Stadium is proposed as part of this project. Work undertaken as part of this project would not include the repair or replacement of historic features. Rehabilitation Standard No. 6 does not apply.

Rehabilitation Standard No. 8: Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

The proposed scope of work includes ground-disturbing activities. The project is subject to standard provisions related to the potential disturbance of archeological resources to comply with CEQA. A project that complies with such standard provisions would be in conformance with Rehabilitation Standard No. 8.

Rehabilitation Standard No. 9: New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

The construction of project components would be new construction within the site of Edwards Stadium. As noted under Rehabilitation Standard No. 1, the proposed volleyball courts and team building would be separated from the stadium, and the stadium's mass, angular forms of the West Bleachers, and exterior features adjacent to the project site would not be altered. Although the current setting of the site would be altered by the project, the project, including the courts and team building are designed as subordinate to the stadium in terms of scale and massing, consistent with guidance in Preservation Brief 14, *New Exterior Additions to Historic Buildings: Preservation Concerns*. The proposed new construction would be clearly differentiated from the historic construction of Edwards Stadium and its associated ticket booths. The proposed retaining wall at the west end of the project site would be rendered in textured concrete and new concrete on the site will be integrally colored, and would be compatible with the historic smooth concrete and cast concrete detailing of Edwards Stadium. The courts and related berm seating areas would be set on level ground, achieved by regrading and supported by the retaining wall. Although the new retaining wall would reduce visibility of the base of the stadium along the sidewalk on the east side Fulton/Oxford Street, the new construction would be concentrated toward the center of the project site and set at a height that would not substantially obscure visibility of the stadium's exterior**.** Visibility of the stadium's character-defining features from the north end of the project site could be be increased given the reduction in tree coverage that would result from tree removal during project construction.

The proposed team building would be a horizontally proportioned pavilion element at a human scale in order to avoid competing with the larger scaled angled massing of the Edwards Stadium grandstands adjacent to the site. A mass timber construction system would be used with the underside of the cross-laminated timber panels exposed as the finished surface. Consistent with NPS guidance, the building would be sufficiently separated from the stadium and subordinate in scale such that it would not substantially reduce visibility of the stadium. Its materials, massing, and detailing would be clearly compatible and differentiated from those of the stadium and its ticket booths such that new construction would be clearly differentiable from the historic. Overall, the proposed project would result in new construction that is secondary to the historic stadium and does not detract from its significance, as recommended by the Standards. The relocated ticket booths would retain similar proximity and spatial relationships to the stadium. Therefore, the proposed project would be compliant with Rehabilitation Standard No. 9.

Rehabilitation Standard No. 10: New additions and adjacent or related new construction will be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The construction of the project components would occur on areas of the site that are currently paved with asphalt or that contain remnant landscaping. If the project components were removed in the future, which is not currently proposed, the project site could be returned to a similar state as existing conditions with repaving or reintroduced landscaping without impairing Edwards Stadium's integrity, as the project proposes no direct alteration of the stadium itself. Therefore, the project would be compliant with Rehabilitation Standard No. 10.

As detailed above, the proposed project would comply with the Standards, thereby avoiding an impact to a historical resource pursuant to Section 15064.5(b)(3) of the CEQA Guidelines. The project's nature, with most of the space dedicated to open volleyball courts, would generally preserve views of the western façade of Edwards Stadium from public viewpoints.

The project's nature, such as the new team building, would also be cohesive with newer construction in the surrounding area, such as multi-family construction near the project site. The project would not have adverse impacts related to the historic integrity of the two nearby properties that have been designated as Berkeley City Landmarks, consisting of the Odd Fellows Temple at 2288 Fulton Street (Landmark #55) and William T. Such Building at 2140 Oxford Street (Landmark #43). These landmarks are farther from the project site than Edwards Stadium. Therefore, the project would not require construction activity proximate to the landmarks such that groundborne vibration would damage the structures (see Section XIII., *Noise*).

The proposed relocation of the ticket booths would comply with the Standards and the ticket booths would be relocated pursuant to the requirements of Mitigation Measure CUL-1, ensuring that there would be no damage to the resource.

Impact CUL-1: Relocation of the ticket booths could damage the structures and result in a significant impact to a historical resource.

Mitigation Measure CUL-1: Prior to the initiation of any site or building demolition of construction activities, a moving/structural engineering company with demonstrated experience in the relocation of historic buildings shall be contracted for the work. The relocation shall be planned in accordance with provisions in the California Historic Building Code. When preparing the relocation plan, the moving/structural engineering company shall consult with a qualified preservation architect who meets the Secretary of the Interior's Professional Qualifications Standards to confirm their proposed relocation plan and that the proposed methods for relocation are consistent with professional best practices. Bracing and securing the buildings for the move shall be undertaken in a manner that will avoid any damage to their historic materials. In case of inadvertent damage from the move, the buildings should be documented using photogrammetry, lidar, or other similar technology that will provide measured drawings prior to the move to inform repair work, if needed. The Campus Architect shall review and approve the relocation plan prior to the initiation of site or building demolition of construction activities and after construction shall verify that the relocation was completed in compliance with the approved relocation plan.

Significance with Mitigation: Implementation of Mitigation Measure CUL-1 would ensure that relocation of the ticket booths is monitored and are undertaken by a moving/structural engineering company with demonstrated experience in the relocation of historic buildings. Therefore, with implementation of Mitigation Measure CUL-1, impacts would be *less than significant*.

b) Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Though there are no known archaeological resources at the project site, ground-disturbing activities during project construction would have the potential to uncover unknown resources and cause damage or destroy resources. Should this occur, the ability of the deposits to convey their significance, either as containing information about prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired. This could lead to a potentially significant impact to archaeological resources. This impact is identified as potentially significant in the EIR for the UC Berkeley's Long Range Development Plan. The EIR provides mitigation measures that would reduce the impact to less than significant. Consistent with the EIR, implementation of Mitigation Measure CUL-2 would ensure that impacts of the proposed project would be *less than significant*.

Impact CUL-2: The proposed project has the potential to disturb unknown archaeological resources that could exist beneath the depth of previous ground disturbances and result in a significant impact to an archaeological resource.

Mitigation Measure CUL-2: UC Berkeley shall implement the following steps to ensure impacts to archaeological and tribal cultural resources will be less than significant during ground-disturbing activities.

- Prior to soil disturbance, UC Berkeley shall confirm that contractors have been notified of the procedures for the identification of federal- or State-eligible cultural resources, and that

the construction crews are aware of the potential for previously undiscovered archaeological resources or tribal cultural resources on-site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.

- If a resource is discovered during construction (whether or not an archaeologist is present), the following measures shall be implemented:
- All soil-disturbing work within 35 feet of the find shall cease.
- UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site in the project area to determine whether the resource is significant and would be affected by the project.
- Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist.
- If the resource is a tribal cultural resource, the consulting archaeologist, approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission, shall consult with the appropriate tribe to evaluate the significance of the resource and to recommend appropriate and feasible avoidance, testing, preservation or mitigation measures, in light of factors such as the significance of the find, proposed project design, costs, and other considerations.
- If avoidance is infeasible, other appropriate measures (e.g., data recovery) may be implemented.
- If the resource is a non-tribal resource determined significant under CEQA, a qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant.
- The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources if appropriate.
- The report shall be submitted to the City of Berkeley, California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required, and the applicable Native American tribes, if requested.

- Ground-disturbing activities shall be monitored from the outset. Tribal monitoring shall occur for soil removal, parcel grading, new utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. Based on project-specific daily construction schedules, field conditions, and archaeological observations, full-time monitoring may not be warranted following initial observations.

Significance with Mitigation: Implementation of Mitigation Measure CUL-2 would ensure that ground-disturbance activities are monitored and are undertaken by trained construction crews.

Further, Mitigation Measure CUL-2 would require proper procedures to be followed in the event that cultural and tribal cultural resources are encountered during construction. Therefore, with implementation of Mitigation Measure CUL-2, impacts would be *less than significant*.

c) Would the proposed project disturb any human remains, including those interred outside of dedicated cemeteries?

Human remains associated with precontact archaeological deposits could exist at the project site and could be encountered during construction. The associated ground-disturbing activities, such as site grading and trenching, have the potential to disturb human remains interred outside of formal cemeteries. Any human remains encountered during ground-disturbing activities would be required to be treated in accordance with California Health and Safety Code Section 7050.5, PRC Section 5097.98, and CCR Section 15064.5(e) (CEQA), which state the mandated procedures of conduct following the discovery of human remains. As part of the proposed project, the following UC Berkeley CBP pertaining to cultural resources (CUL) would be implemented:

- **CBP CUL-1:** UC Berkeley will follow the procedures of conduct following the discovery of human remains that have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (California Environmental Quality Act [CEQA]). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the California Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the NAHC is unable to identify an MLD, the MLD fails to make a recommendation within 48 hours after being notified, or the landowner rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance.

Additionally, the UC Berkeley Campus Design Standards include that in the event human remains are discovered during construction activities, the project contractor shall protect the discovered items, cease work within a 35-foot radius, and notify the owner's representative in writing. The owner may retain an archaeological consultant to evaluate findings in accordance with standard practice and applicable regulations. While descendant communities may ascribe religious or cultural significance to such remains and may view their disturbance as an immitigable impact, implementation of CBP CUL-1 and the UC Berkeley Campus Design Standards would ensure that impacts to human remains are *less than significant*.

VI. ENERGY

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	❒	❒	■	❒
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	❒	❒	■	❒

EXISTING CONDITIONS

Existing energy consumption at the project site consists primarily of transportation fuels associated with vehicles traveling to and from the existing parking lot.

DISCUSSION

a) Would the proposed project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

The following discusses the potential energy demands from construction activities associated with the development and operation of the proposed project.

Short-Term Construction Impacts

Energy use during demolition and construction would be temporary in nature, and construction equipment used would be typical of construction projects in the region, such as backhoes, dozers, dump trucks, and excavators. Construction equipment would be required to comply with applicable CARB regulations that restrict the idling of heavy-duty diesel motor vehicles and govern the accelerated retrofitting, repowering, or replacement of heavy-duty diesel on- and off-road equipment. Construction contractors would be required to comply with the provisions of 13 California Code of Regulations sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, which would minimize unnecessary fuel consumption. Construction equipment would be subject to the United States Environmental Protection Agency Construction Equipment Fuel Efficiency which would minimize inefficient fuel consumption. These construction equipment standards (i.e., Tier 4 efficiency requirements) are contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Pursuant to applicable regulatory requirements such as current CALGreen regulations, the project would be required to comply with construction waste management practices to divert a minimum of 65 percent of construction and demolition debris and to

recycle and salvage 100 percent of excavated soil and land-clearing debris, concrete, and of asphalt during construction and demolition activities. These practices would result in efficient use of energy necessary to construct the proposed project.

Long-Term Operation Impacts

Operation of the proposed project would contribute to regional energy demand by consuming electricity and gasoline and diesel fuels. Electricity would be used for powering the scoreboard and sound amplification system, the team building heating and cooling systems, lighting, and water and wastewater conveyance, among other purposes. Gasoline and diesel consumption would be associated with vehicle trips generated by visiting teams. However, given that not every volleyball event during the season would be a home event at the project site and that there are a limited number of events during the volleyball season, fuel consumption from visiting teams would be negligible. The proposed project would relocate the events on campus and would not substantially generate new vehicle trips from spectators. As described further in Section XVII, Transportation, the project includes no vehicle parking, is approximately 1,000 feet from high-quality transit, and would redistribute trips rather than create new trips. For this reason, the vehicle miles traveled (VMT) resulting from operation of the project would be not be substantial, and therefore neither would fuel consumption.

Electrical service to the proposed project would be provided initially by the existing UC Berkeley cogeneration plant. Electrical amenities would be designed to be integrated with the Berkeley Clean Energy Campus currently being planned as part of the Clean Energy Campus project. However, the proposed project would initially be connected to the existing campus cogeneration plant. As the Berkeley Clean Energy Campus becomes fully operational, the proposed project would connect to it. The proposed team building would be compliant with the requirements of the Building Energy Efficiency Standards and CALGreen. Because the California Building Standards Code, which includes the Building Energy Efficiency Standards and CALGreen, goes through 3-year updates to improve energy efficiency in new buildings, compliance with the current standards in effect at the time of project permitting would ensure that the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy. Pursuant to CalGreen, all plumbing fixtures used for the proposed project would be high-efficiency fixtures, which would minimize the potential inefficient or wasteful consumption of energy related to water and wastewater. For example, the project would include high-efficiency heat pumps for water and space heating. Therefore, operation of the proposed project would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts would be *less-than-significant*.

b) Would the proposed project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

The State's electricity grid is transitioning to renewable energy under California's Renewable Energy Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order (EO) S-14-08, signed in November 2008, expanded the State's renewable portfolio standard (RPS) to 33 percent renewable power by 2020. This standard was adopted by the legislature in

2011 (Senate Bill [SB] X1-2). SB 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy-efficiency and conservation measures. On September 10, 2018, SB 100 was signed and raised California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also established a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under SB 100, the State cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100-percent carbon-free electricity target. Additionally, as discussed in detail in Section VIII. *Greenhouse Gas Emissions*, the University of California Office of the President (UCOP) adopted a comprehensive policy of detailed guidelines for Green Building Design and Clean Energy Standards (now the UC Sustainable Practices Policy) in 2003, including an annual sustainability reporting requirement.[24]

As previously stated, the proposed project's electricity consumption would initially be supplied by the natural gas-fired campus cogeneration plant but would be designed to be integrated with the Berkeley Clean Energy Campus. Once it is fully operational, the electricity consumed by the proposed project would be sourced from 100-percent carbon-free sources. The statewide RPS goal is not directly applicable to individual development projects, but to utilities and energy providers, such as the EBCE or PG&E. Compliance with the RPS goals would ensure that the State meets its objective in transitioning to renewable energy. Additionally, the proposed project would eventually consume electricity through EBCE's Renewable 100 electricity service and would comply with the current Building Energy Efficiency Standards and CALGreen. Therefore, implementation of the proposed project would have a *less-than-significant* impact in terms of conflicting with or obstructing plans for renewable energy and energy efficiency.

[24] University of California Office of the President, July 2023, University of California – Policy on Sustainable Practices. https://policy.ucop.edu/doc/3100155/SustainablePractices.

VII. GEOLOGY AND SOILS

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	❒	❒	❒	■
ii) Strong seismic ground shaking?	❒	❒	■	❒
iii) Seismic-related ground failure, including liquefaction?	❒	❒	■	❒
iv) Landslides, mudslides, or other similar hazards?	❒	❒	■	❒
b) Result in substantial soil erosion or the loss of topsoil?	❒	❒	■	❒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	❒	❒	■	❒
d) Be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994),creating substantial direct or indirect risks to life or property?	❒	❒	■	❒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	❒	❒	❒	■
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is in the northern portion of the Coast Ranges geomorphic province of California with active faults in the San Andreas system. The project site experiences generally uniform vertical movement. The predominant soil type is silty clay. The project site does not lie within an Alquist-Priolo Earthquake Fault Zone and is in an area that has a low susceptibility to landslide and liquefaction.[25, 26]

[25] California Geological Survey, 2022, CGS Seismic Hazards Program: Alquist-Priolo Fault Hazard Zones, https://gis.data.ca.gov/maps/ee92a5f9f4ee4ec5aa731d3245ed9f53/explore?location=37.870279%2C-122.254394%2C16.96, accessed on May 2, 2024.

[26] Metropolitan Transportation Commission and Association of Bay Area Governments, September 2023, MTC/ABAG Hazard Viewer Map, https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, accessed on May 2, 2024.

DISCUSSION

a) Would the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: (i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; (ii) Strong seismic ground shaking; (iii) Seismic-related ground failure, including liquefaction; (iv) Landslides, mudslides, or other similar hazards?

Earthquake Faults

The project site is not in an Alquist-Priolo Earthquake Fault Zone and therefore would not result in risk of loss, injury, or death related to fault rupture. *No impact* would occur.

Earthquake Ground Shaking

Given the very high level of ground shaking during a major earthquake in the San Francisco Bay Area, ground shaking is a serious geologic hazard at the project site. The proposed project would be required to comply with the CBC, as well as the UC Seismic Safety Policy, with review from the Seismic Advisory Board and UC Berkeley's Seismic Review Committee. The proposed project would also be reviewed by a structural engineer peer reviewer and the Campus Building Department structural plan review. As part of the proposed project, the following UC Berkeley CBPs pertaining to geology (GEO) would be implemented:

- **CBP GEO-1:** UC Berkeley will comply with the California Building Code and the University of California Seismic Safety Policy.
- **CBP GEO-2:** Site-specific geotechnical studies will be conducted under the supervision of a California Registered Certified Engineering Geologist or licensed geotechnical engineer and UC Berkeley will incorporate recommendations for geotechnical hazard prevention and abatement into project design.
- **CBP GEO-3:** The UC Berkeley Seismic Review Committee will review all seismic and structural engineering design for buildings on campus.
- **CBP GEO-4:** UC Berkeley will use site-specific seismic ground motions for analysis and design of campus projects. Site-specific ground motions provide more current geo-seismic data than the U.S. Geological Survey (USGS) and are used for performance-based analyses.
- **CBP GEO-5:** UC Berkeley will comply with the UC Seismic Safety Policy.
- **CBP GEO-6:** UC Berkeley will implement programs and projects in emergency planning, training, response, and recovery. Each campus Building Coordinator will prepare, and update as needed, building response plans and coordinate education and planning for all building occupants.
- **CBP GEO-7:** As stipulated in the UC Seismic Safety Policy, the design parameters for specific site peak acceleration and structural reinforcement will be determined by the geotechnical and structural engineer for each new or rehabilitation project proposed under the LRDP. The acceptable level of

actual damage that could be sustained by specific structures will be calculated based on geotechnical information obtained at the specific building site.

CBP GEO-1 through CBP GEO-7 establish a series of actions and procedures with which UC Berkeley must comply to reduce risks associated with seismic hazards, consistent with other existing federal, State, and UC requirements. Mandatory compliance with UC policies, including the CBPs, would ensure that the proposed project would not cause substantial adverse effects involving earthquake ground shaking and impacts would be *less than significant.*

Liquefaction and Related Ground Failure

The project site is in an area with low susceptibility for liquefaction. Mandatory compliance with the UC Seismic Safety Policy, review by the Seismic Review Committee and a peer reviewer experienced in structural design and performance, and compliance with CBPs GEO-1 through GEO-7 would ensure that the proposed project would not cause substantial adverse effects involving liquefaction and related ground failure, and impacts would be *less than significant*.

Landslides

The project site is an area with low susceptibility for landslides. The site is not on or adjacent to steep or unstabilized slopes. The proposed project would be required to comply with the CBC and UC Seismic Safety Policy. It would also be required to undergo review by the Seismic Review Committee and a structural engineer peer reviewer. The following geology CBP would also be implemented:

- **CBP GEO-8:** Site-specific geotechnical studies will include an assessment of landslide hazard, including seismic vibration and other factors contributing to slope stability.

CBP GEO-8 requires consideration of landslide-related hazards as part of project-geotechnical studies. Mandatory compliance with the CBC and UC Seismic Safety Policy, review by the Seismic Review Committee, and compliance with CBP GEO-1 through CBP GEO-8 would ensure that the proposed project would not result in significant impacts involving landslides, and impacts would be *less than significant.*

b) Would the proposed project result in substantial soil erosion or the loss of topsoil?

Project construction, particularly grading and site preparation, could result in erosion and loss of topsoil from the project site. The proposed project would be required to follow applicable CBC requirements to reduce soil erosion. The project must obtain coverage under UC Berkeley's Storm Water Permit, which the State Water Resources Control Board issues to the University in 2013. Under permit coverage, the proposed project would be required to implement construction phase best management practices (BMPs), post-construction site design, source control, and treatment control measures in accordance with permit requirements, such as low-impact development (LID) measures. In addition, the following geology CBP would be implemented:

- **CBP GEO-9:** Campus construction projects must comply with the Campus Design Standards, which contain regulatory and other campus requirements for construction-phase and post-construction stormwater management.

Compliance with federal, State, and CBP GEO-9 standards would reduce impacts related to soil erosion and the loss of topsoil. Impacts would be *less than significant*.

c) Would the proposed project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie close to the ground surface. The project site is not subject to landslide. The project site is in an area with low susceptibility for liquefaction. Mandatory compliance with the UC Seismic Safety Policy, review by the Seismic Review Committee and a peer reviewer experienced in structural design and performance, and compliance with CBPs GEO-1 through GEO-7 would ensure that the proposed project would not cause substantial adverse effects involving liquefaction. The probability of subsidence is low due to the generally uniform vertical movement at the project site and the fact that the proposed project would not involve pumping of groundwater from beneath the project site.[27] The project site slopes downward from east to west with an elevation change of approximately 6 feet across the site. To create a level playing surface for the volleyball courts the project would include importing fill material to raise the site at the western boundary of the site. New fill material would be held behind a retaining wall that would be constructed along the western boundary of the site, next to sidewalk along Oxford/Fulton Street. The retaining wall would be approximately 7 feet tall at its highest point, with the top of wall being level across the site and the bottom of wall sloping with street grade. Mandatory compliance with the CBC and the University of California Seismic Safety Policy, with review by the Seismic Advisory Board, would ensure that the proposed project would not cause substantial adverse effects involving landslide, lateral spreading, subsidence, liquefaction, or collapse, and impacts would therefore be *less than significant*.

d) Would the proposed project be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

The predominant soil type at the ground surface at the project site is silty clay. The clay is generally considered to be stiff to hard and the expansion potential of the clay soils varies from low to critically high.[28] Therefore, the proposed project would have the potential to expose people to hazards associated with expansive soils. The proposed project would be required to follow CBC procedures for evaluating the presence of expansive soils and employing strategies to minimize the risks of developing on

[27] Association of Bay Area Governments. 2023. MTC/ABAG Hazard Viewer Map. Updated: September 2023. https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, accessed May 20, 2024

[28] University of California Davis, Agriculture and Natural Resources. 2023. SoilWeb: An Online Soil Survey. https://casoilresource.lawr.ucdavis.edu/gmap/, accessed May, 20 2024.

expansive soils. The proposed project would also be required to comply with CBP GEO-8 that would require site-specific geotechnical studies to identify and recommend mitigation measures to reduce the impacts of expansive soil. Compliance with the CBC, CBPs, and University of California Seismic Safety Policy, with review by the Seismic Advisory Board, would ensure that impacts of expansive soil would be *less than significant.*

e) Would the proposed project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The proposed project would not include the use of septic tanks or alternative wastewater disposal systems. Therefore, *no impact* would occur regarding soil capability to adequately support the use of septic tanks or alternative wastewater disposal systems.

f) Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

It is not likely that the project site contains unique geological features as it is in a highly developed area and has already undergone ground disturbance from the construction of the existing surface parking lot. However, there is a chance that a unique paleontological resource could be identified during ground disturbance as part of project construction. As part of the proposed project, the following geology CBP would be implemented:

- **CBP GEO-10:** In the event that a unique paleontological resource is identified during project planning or construction, the work will stop immediately in the area of effect, and the find will be protected until its significance can be determined by a qualified paleontologist. If the resource is determined to be a "unique resource," a mitigation plan will be formulated pursuant to guidelines developed by the Society of Vertebrate Paleontology and implemented to appropriately protect the significance of the resource by preservation, documentation, and/or removal, prior to recommencing activities in the area of effect. The plan will be prepared by the qualified paleontologist and submitted to the UC Berkeley project manager for review and approval prior to initiation or recommencement of construction activities in the area of effect.

Compliance with CBP GEO-10 would ensure that impacts to unknown paleontological resources would be *less than significant*.

VIII. GREENHOUSE GAS EMISSIONS

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	❒	■	❒	❒
b) Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	❒	❒	■	❒

EXISTING CONDITIONS

Existing conditions at the project site generate very little GHG emissions. There is limited landscaping and trees that require routine maintenance, such as mowing. Lawn equipment, such as mowers and trimmers, generate GHG emissions. The primary use of the project site currently is a surface parking lot. Vehicles parking on-site generate GHG emissions as they travel to and from the parking lot. However, similar emissions would likely occur regardless of the existence of the on-site parking lot because these vehicles would instead park elsewhere in the area. Specifically, these vehicles would be expected to use the existing parking structure on Bancroft Way, less than 1 mile from the project site. This is a reasonable expectation because people generally prefer to park as close to their destination as possible and therefore would use parking nearest the project site after parking is no longer available at the site.

The existing UC Berkeley volleyball program generates GHG emissions, primarily through the consumption of electricity for lighting and from vehicle trips associated with spectators and visiting teams. The majority of the participants and spectators associated with the existing beach volleyball program arrive to the Clark Kerr site primarily by foot, bicycle, or transit.

UC Berkeley conducts annual GHG inventories to assess its progress in reducing emissions and meeting its climate change goals. UC Berkeley reports on ten emission sources and analyzes emissions in three different categories:

- **Scope 1 – Direct Emission Sources:** Campus cogeneration plant natural gas consumption, other purchased natural gas (e.g., space and water heating), emergency generator fuel consumption, campus fleet fuel consumption, refrigerant use.
- **Scope 2 – Indirect Emission Sources:** Purchased electricity.
- **Scope 3 – Indirect Emission Sources:** Business air travel, student/faculty/staff commute, solid waste, water.

UC Sustainable Practices Policy

In 2003, the University of California Office of the President (UCOP) adopted a comprehensive policy of detailed guidelines for Green Building Design and Clean Energy Standards (now the UC Sustainable Practices Policy), including an annual sustainability reporting requirement.[29] The policy covers the areas of green building design, clean energy, climate action, sustainable transportation, and sustainable building and laboratory operations for campuses, zero waste, sustainable procurement, sustainable foodservices, sustainable water systems, sustainability at UC health, general sustainability performance assessment, health and wellbeing, anti-racism, diversity, equity, and inclusion.[30] This policy has been revised several times; the most recent version became effective in April 2024. The policy was updated in July 2023 which replaced the former goal of achieving carbon neutrality for Scopes 1 and 2 by 2025 with a new set of targets and requirements aligned with the latest state goals under AB 1279 and the 2022 CARB Scoping Plan of achieving net-zero greenhouse gas emissions no later than 2045. The 2023 UC Sustainable Practices Policy reflects the University's desire to prioritize direct, total emissions reductions without the reliance on carbon offsets to the extent feasible and commits UC to implementing actions intended to minimize the UC system's impact on the environment and reduce its dependence on nonrenewable energy.

The UC Sustainable Practices Policy establishes guidelines and includes climate change goals for all campuses that are consistent with, or would exceed, the latest state targets. The UC Sustainable Practices Policy requires each campus to reduce GHG emissions from all scopes 90 percent by 2045 (from a 2019 baseline) and neutralize any remaining emissions through carbon removal. To support this effort, the UC Sustainable Practices Policy requires each campus to prepare a decarbonization study, currently under preparation, that will be used to establish by January 1, 2025 new interim reduction targets for 2030, 2035, and 2040; update and adopt climate action plans before 2026 with measures to achieve these targets; and allocate funds for direct emissions reductions. Specifically, UC Berkeley's decarbonization study will address replacing the natural gas-powered cogeneration plant with a new, clean and green resilient energy system aimed at eliminating the primary source of Scope 1 emissions on campus.[31]

Unchanged in the 2023 update to the UC Sustainable Practices Policy is that all campuses and UCOP will purchase 100-percent clean electricity beginning in 2025 to reduce Scope 2 emissions. UC Berkeley's Scope 3 emissions reduction targets remain aligned with the latest State of California's goals and policies

[29] University of California Office of the President, July 2023, University of California – Policy on Sustainable Practices. https://policy.ucop.edu/doc/3100155/SustainablePractices.

[30] University of California Office of the President, July 2023, University of California – Policy on Sustainable Practices. https://policy.ucop.edu/doc/3100155/SustainablePractices.

[31] UC Berkeley received a capital investment of $249 million from the State of California for the Clean Energy Campus Project. The Berkeley Clean Energy Campus Project is in the technical planning stage at the time this analysis was prepared and is reported as being on track to begin construction of the initial phase of the capital project by 2025.

to achieve net-zero statewide emissions by 2045 or sooner.[32] Additionally, the 2023 UC Sustainable Practices Policy sets new requirements and goals relevant to GHG emissions reduction for Scope 3 emissions from landfill waste.[33] Lastly, UC Berkeley also includes water conveyance and wastewater treatment in its Scope 3 emissions reporting, to which the systemwide reduction targets will apply.

Under the 2023 Sustainable Practices Policy, voluntary carbon offsets may be purchased to meet obligations under CEQA, achieve LEED certification, or for other purposes, but will not be counted towards reduction targets except for those used to meet regulatory requirements by CARB or direct carbon removals used to negate residual emissions (not to exceed 10 percent) before 2045.[34]

DISCUSSION

a) Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

A project does not generate enough GHG emissions on its own to influence global climate change; therefore, this section measures the proposed project's contribution to the cumulative environmental impact associated with GHG emissions. Development of the proposed project would contribute to climate change through direct and indirect emissions of GHG emissions, including the use of landscaping equipment and electricity consumption. Given the seriousness of climate change and the regional significance of UC Berkeley, UC Berkeley has determined that for the purposes of this analysis, any increase in project level GHG emissions above existing conditions (no net increase) would result in a significant impact on the environment.

Pursuant to CEQA Guidelines Section 15125, the environmental setting normally constitutes the baseline physical conditions by which an agency determines whether an impact is significant. The baseline for GHG impacts used for this analysis is the existing surface parking lot and landscaping on the project site and the existing UC Berkeley women's beach volleyball program with a baseline year of 2024. Therefore, in the context of CEQA, a project that achieves "no net increase" from the 2024 baseline would not result in significant GHG impacts. This is reiterated in the Natural Resources Agency's 2009 Final Statement of Reasons pursuant to SB 97, which states:

> … Section 15064.4(b)(1) [of the CEQA Guidelines] is not intended to imply a zero net emissions threshold of significance. As case law makes clear, there is no "one molecule" rule in CEQA.

[32] Scope 3 emissions at UC Berkeley under the previous UC Sustainable Practices Policy (as reflected in the 2020 UC Berkeley Sustainable Plan) were intended to be eliminated by 2050, primarily through the purchase of voluntary carbon offsets.

[33] University of California Office of the President, July 2023, University of California – Policy on Sustainable Practices. https://policy.ucop.edu/doc/3100155/SustainablePractices.

[34] University of California Office of the President, July 2023, University of California – Policy on Sustainable Practices. https://policy.ucop.edu/doc/3100155/SustainablePractices.

The Final Statement of Reasons makes clear that the CEQA significance threshold at which an impact would occur is some point above zero. Additionally, the 2022 Scoping Plan Update states that "there are recent examples of land use development projects in California that have demonstrated that it is feasible to design projects that achieve zero net additional GHG emissions." In the 2022 Scoping Plan Update, CARB recognizes that achieving a no-net increase in GHG emissions compared to existing conditions would demonstrate that a project is not contributing to climate change impacts and is a recommended objective for land use development projects that are able to feasibly achieve this goal. Therefore, for the purpose of this analysis, the proposed project would result in a significant GHG impact if its implementation increases GHG emissions above existing conditions (2024).

Because the decarbonization study, interim targets, and updated Climate Action Plan are under development and campuswide emissions reductions have not been identified or fully evaluated, this Initial Study uses a no net increase GHG emissions significance threshold.

Construction Emissions

Construction of the proposed project would generate GHG emissions. For example, the project would require heavy machinery and equipment fueled by gasoline and diesel, both of which generate GHG emissions when combusted. An estimate of the GHG emissions that would be generated during construction are provided in Table 4-4, *Proposed Project Construction GHG Emissions*. As BAAQMD has not developed a quantitative threshold of significance for construction-related GHG emissions, construction emissions generated during project construction, shown in Table 4-4, are provided for informational purposes only.

The construction emissions shown in Table 4-4 were estimated using the California Emissions Estimate Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.[35] Using CalEEMod to estimate the GHG emissions of a project is an industry accepted practice in California and routinely used for the purposes of CEQA.

CalEEMod was designed with default assumptions supported by substantial evidence to the extent available at the time of programming. However, CalEEMod was also designed to allow the user to change the defaults to reflect site- or project-specific information, when available, provided that the information is supported by substantial evidence as required by CEQA.[36] The GHG emissions estimates for the

[35] South Coast Air Quality Management District. 2017. California Emissions Estimator Model. Retrieved on July 5, 2024, from https://www.aqmd.gov/caleemod/home

[36] California Air Pollution Control Officers Association. 2017. California Emissions Estimator Model User's Guide. Retrieved on July 5, 2024, from https://www.aqmd.gov/docs/default-source/caleemod/user's-guide---october-2017.pdf?sfvrsn=6

proposed project are based on a combination of CalEEMod defaults and user changes to defaults based on specifics of the proposed project, such as construction schedule. Appendix A contains the CalEEMod datasheets, which shows the various model inputs and outputs.

TABLE 4-4 PROPOSED PROJECT CONSTRUCTION GHG EMISSIONS

Source	Proposed Project MT CO_2e [a]
Project Construction 2025	149
Project Construction 2026	38
Total Construction Emissions	**187**

Note: Construction modeling assumed a 12-month construction duration. CalEEMod assumes that vehicle fuel efficiency and emissions standards incrementally improve over time. If the construction schedule moves to a later date, modeling based on a start year of 2025 would be conservative as vehicle and equipment emission rates are assumed to improve with each year. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.

Source: CalEEMod v. 2022.1.1.28 (See Appendix A, *Air Quality and Greenhouse Gas Emissions Modeling Data*, of this Initial Study).

Operational Emissions

As previously discussed, UC Berkeley conducts annual GHG inventories and reports on ten emission sources categorized as Scope 1, Scope 2, or Scope 3 emissions. Almost all of the emissions associated with the proposed project would be considered Scope 1 emissions (e.g., landscaping equipment use, emergency generator fuel use, electricity generated by the cogeneration plant). The project would generate minimal Scope 3 emissions from water consumption due to the treatment of water resources for the landscaped areas and potable water for the proposed project; however, irrigation infrastructure and potable water fixtures and equipment of the proposed project would be energy and water efficient due to compliance with current CALGreen standards. Because there would be less than 1 MT CO_2e generated annually from water consumption, as shown in Table 4-5, *Proposed Project Operational GHG Emissions*, these Scope 3 emissions would have a less than significant impact on climate change and would not preclude UC Berkeley from achieving its overall emission reduction goals. Regarding mobile source GHG emissions, as described in Section III, Air Quality, the distance at which a vehicle travels correlates to its GHG emissions, as the longer the combustion engine is operating the longer tailpipe emissions occur. As described in the Section XVII, *Transportation*, because the project site is proximate to high-quality transit, as well as proximate to sidewalks, bicycle lanes, and dense residential areas, and because no parking is provided for vehicles, the vehicle miles traveled (VMT) resulting from the project would not be substantial. Competing volleyball teams would travel to the proposed volleyball facility for matches and events. However, these trips would effectively be the same length as the existing trips made to the Clark Kerr Campus for volleyball events. Therefore, the mobile-source GHG emissions of the

proposed project would have negligible change on existing conditions and are not the focus of this analysis.

TABLE 4-5 PROPOSED PROJECT OPERATIONAL GHG EMISSIONS

Source	Proposed Project MT CO_2e/year
Scope 1 Emissions	
Area Sources	1
Energy Sources (Cogeneration Plant)	38
Refrigerant	<1
Total Scope 1 Emissions	**40**
Existing Scope 1 Emissions	*Conservatively Assumed Zero*
Net Increase from Existing	**40**
Exceeds No Net Increase Threshold?	**Yes**
Scope 2 Emissions	
Total Scope 2 Emissions	**0**
Existing Scope 2 Emissions	*0*
Net Increase from Existing	**0**
Exceeds No Net Increase Threshold?	**No**
Scope 3 Emissions	
Water Sources	<1
Waste Sources	7
Total Scope 3 Emissions	**8**
Existing Scope 3 Emissions	*Conservatively Assumed Zero*
Net Increase from Existing	**8**
Exceeds No Net Increase Threshold?	**No**

Notes: Totals may not add up due to rounding.
Source: CalEEMod v. 2022.1. (See Appendix A, *Air Quality and Greenhouse Gas Emissions Modeling Data*, of this Initial Study)

As discussed in Section 3.3, Project Components, the proposed project would involve the operation of a team building, scoreboard, sound amplification, and lighting. The components of the proposed project would generate additional electric demand beyond what is required for existing beach volleyball events at the Clark Kerr Center sand courts. Additionally, existing conditions at the project site require negligible electricity demand.

The proposed project would initially use UC Berkeley's cogeneration plant to meet anticipated electricity demands, which is currently natural gas fueled. Therefore, the available information pertaining to the cogeneration plant's electricity generation, natural gas consumption, and fuel carbon intensity factors was used to identify pounds-per-megawatt hour (MWh) carbon intensity factors for CO_2, CH_4, and N_2O to be used in CalEEMod. Additionally, it is anticipated that UC Berkeley could take up to 5 years to switch this proposed project's electricity consumption coming from the cogeneration plant to the new Berkeley Clean Energy Campus; once the Berkeley Clean Energy Campus is fully operational, all of the electricity consumed by the proposed project would be 100-percent carbon free.

Total proposed project GHG emissions generated during operation are provided in Table 4-5, which accounts for electricity consumption anticipated during volleyball events, such as powering the scoreboard and lights. As discussed in the paragraph before Table 4-5 above, mobile source GHG emissions are not included in Table 4-5 because the project would not generate substantial VMT..

As shown in Table 4-5, the proposed project would exceed the significance threshold of no net increase in GHG emissions from the Scope 1 emissions generated by on-site landscaping equipment use and mostly from natural gas use at UC Berkeley's cogeneration plant. Notably, the proposed project would exceed UC Berkeley's no net increase GHG emissions threshold until UC Berkeley's cogeneration plant is replaced with the new Berkeley Clean Energy Campus, which represents a vast majority of Scope 1 emissions generated by the proposed project. Once the cogeneration plant is replaced, the proposed project's annual GHG emissions are expected to be reduced to below what is currently generated under existing conditions, resulting in a net decrease in emissions. Nonetheless, the proposed project would present a potentially *significant* impact related to GHG emissions upon initial operation. However, implementation of Mitigation Measure GHG-1 would ensure that impacts would be *less than significant*.

Impact GHG-1: The proposed project exceeds the threshold of a no net increase in greenhouse gas (GHG) emissions and, therefore, would generate GHG emissions that may have a significant impact on the environment.

Mitigation Measure GHG-1: UC Berkeley shall offset net new GHG emissions for the proposed project. UC Berkeley shall purchase GHG carbon offsets of no less than 48 metric tons of carbon dioxide equivalent (MT CO_2e) per year until the campus's new Berkeley Clean Energy Campus is fully operational and the proposed project is verified as utilizing that system for electricity. UC Berkeley shall purchase GHG carbon offsets from a voluntary GHG carbon offset provider with an established protocol that requires projects generating GHG carbon offsets to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code Sections 38562(d)(1) and (2)). UC Berkeley may purchase GHG carbon offsets from UC developed voluntary carbon offset projects that are real, permanent, quantifiable, peer verifiable, enforceable, and additional. Definitions for these terms follow.

g. **Real**: Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage"). (To ensure that GHG reductions are real, the California Air Resources Board (CARB) requires the reduction be a direct reduction in a confined project boundary.)

h. **Additional:** GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration.

i. **Permanent:** To function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.

j. **Quantifiable:** The ability to accurately measure and calculate GHG reductions or GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the offset project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage.

k. **Verified:** GHG reductions must result from activities that have been verified. Verification requires third party review of monitoring data for a project to ensure the data are complete and accurate. If a voluntary carbon offset project is developed by the UC, the monitoring data shall be peer reviewed by a qualified third party to ensure the data are complete and accurate.

l. **Enforceable**: The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means. Note that for this mitigation measure, only credits originating within the United States are allowed.

Mitigation Reporting. GHG reductions achieved by the purchase of carbon offsets shall be incorporated into UC Berkeley's annual GHG inventory and annual reporting practices established by the UC Sustainable Practices Policy. Carbon offsets for the purpose of offsetting net new emissions generated by the proposed project shall be purchased by UC Berkeley until the cogeneration plant is replaced by the new Berkeley Clean Energy Campus and the proposed project is confirmed to source 100 percent of its electricity demand from the Berkeley Clean Energy Campus.

Significance with Mitigation: Mitigation Measure GHG-1 would require that UC Berkeley offset GHG emissions from the proposed project to achieve a no net increase in GHG emissions significance threshold beyond existing conditions. Because Mitigation Measure GHG-1 would reduce GHG emissions resulting from implementation of the proposed project by no less than the net new 48 MT CO_2e emissions generated annually by the proposed project, the proposed project would not exceed the no net increase in GHG emissions significance threshold. Consequently, this impact is *less than significant* with mitigation.

b) Would the proposed project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

The following section discusses project consistency with applicable plans adopted for the purpose of reducing GHG emissions, which include CARB's Scoping Plan, MTC/ABAG's Plan Bay Area 2050, the UC Sustainable Practices Policy, and UC Berkeley's Sustainability Plan. The UC Sustainability Practices Policy has been revised several times; the most recent substantial revision in July 2023, which commits the UC to implementing actions intended to minimize the UC's impact on the environment and reduce the UC's

dependence on non-renewable energy resources. The policy covers the areas of green building design, clean energy, climate protection, sustainable transportation, sustainable operations, zero waste, sustainable purchasing, sustainable foodservices, and sustainable water systems. The UC Sustainable Practices Policy establishes guidelines and includes climate change goals for all campuses that are consistent with, or would exceed, the State's emission reduction and carbon neutrality goals of SB 32 and AB 1279.

CARB 2022 Scoping Plan

CARB's latest Climate Change Scoping Plan (2022) outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32, SB 32, EO S-03-05, EO B-55-18, and AB 1279. The Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Statewide strategies to reduce GHG emissions in the 2022 Climate Change Scoping Plan include implementing SB 100, which expands the RPS to 60 percent by 2030; expanding the LCFS to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Statewide strategies to reduce GHG emissions include the low carbon fuel standard, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the CAFE standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32, SB 32, EO S-05-03, EO B-55-18, and AB 1279. In addition, new developments are required to comply with the current Building Energy Efficiency Standards and CALGreen. The proposed project would not conflict with these GHG emissions-reduction measures since they are statewide strategies. The proposed project's GHG emissions would be reduced from compliance with statewide measures that have been adopted since AB 32, SB 32, EO S-03-05, and EO B-55-18 were adopted. Therefore, this impact would be *less than significant*.

Plan Bay Area

Plan Bay Area 2050 is the Bay Area's RTP/SCS that identifies the sustainable vision for the Bay Area.[37] To achieve MTC's/ABAG's sustainable vision for the Bay Area, the Plan Bay Area 2050 land use concept plan for the region concentrates the majority of new population and employment growth in the region in

[37] Association of Bay Area Governments/Metropolitan Transportation Commission. 2021. *Plan Bay Area 2050*. https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed July 5, 2024

Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas in existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per-capita passenger vehicle, VMT, and associated GHG emissions reductions. The project site is not within a PDA, which would be expected given the project site is part of the UC Berkeley Campus; however, the project site is immediately adjacent to the Downtown PDA and the Southside/Telegraph Avenue PDA.[38] The proposed project would accommodate existing volleyball events that already happen on the UC Berkeley Campus but would locate these events closer to public transit. The proposed project would not directly affect regional population and employment projections. Therefore, the proposed project would not conflict with the land use concept in Plan Bay Area 2050 and this impact would be *less than significant*.

UC Sustainability Practices

In 2003, the University of California Office of the President adopted a comprehensive policy of detailed guidelines for Green Building Design and Clean Energy Standards (now the UC Sustainable Practices Policy), including an annual sustainability reporting requirement. This policy has been revised several times; the most substantial version became effective in July 2023, which commits the UC to implementing actions intended to minimize the UC's impact on the environment and reduce the UC's dependence on non-renewable energy resources. The policy covers the areas of green building design, clean energy, climate protection, sustainable transportation, sustainable operations, zero waste, sustainable purchasing, sustainable foodservices, and sustainable water systems. The UC Sustainable Practices Policy establishes guidelines and includes climate change goals for all campuses that are consistent with, or would exceed, the State's emission reduction and carbon neutrality goals of SB 32 and AB 1279.

As discussed under criterion (a), the proposed project would achieve UC Berkeley's no net increase GHG emissions threshold through the purchase of carbon offsets under Mitigation Measure GHG-1 until UC Berkeley's cogeneration plant is replaced with the new ECHP, which reflects consistency with the UC Sustainability Practices policy objectives. Moreover, a vast majority of Scope 1 emissions generated by the proposed project would be from electricity generation at UC Berkeley's cogeneration plant. Once the cogeneration plant is replaced, the proposed project's annual GHG emissions are expected to be reduced to below what is currently generated under existing conditions, as the current volleyball program generates GHG emissions. Therefore, once the cogeneration plant is replaced, the resulting net increase in GHG emissions resulting from the project would be reduced significantly. As such, the proposed project is considered consistent with the UC Sustainability Practices policy, and this impact would be *less than significant*.

[38] Metropolitan Transportation Commission and Association of Bay Area Governments, 2020. Priority Development Areas (Plan Bay Area 2050) ArcGIS. https://opendata.mtc.ca.gov/datasets/priority-development-areas-plan-bay-area-2050/explore, accessed July 5, 2024.

UC Berkeley Sustainability Plan

The UC Berkeley Sustainability Plan (2020) includes an update to UC Berkeley's Carbon Neutrality Planning Framework and guides future work on the campus relative to UC Berkeley's carbon neutrality and reduction goals. The UC Berkeley Sustainability Plan provides a clear structure to articulate the vision, goals, and corresponding strategies to become more sustainable and align with systemwide UC Sustainable Practices Policy. The UC Berkeley Sustainability Plan also integrates UC Berkeley–specific goals that exceed the UC policies, including climate and resiliency strategies for UC Berkeley.

As discussed under criterion (a), the proposed project would achieve UC Berkeley's no net increase GHG emissions threshold through the purchase of carbon offsets under Mitigation Measure GHG-1 until UC Berkeley's cogeneration plant is replaced with the new ECHP, which reflects consistency with the UC Sustainability Practices policy objectives. Moreover, a vast majority of Scope 1 emissions generated by the proposed project would be from electricity generation at UC Berkeley's cogeneration plant. Once the cogeneration plant is replaced, the proposed project's annual GHG emissions are expected to be reduced to below what is currently generated under existing conditions, resulting in negligible GHG emissions. As such, the proposed project is considered consistent with the UC Berkeley Sustainability Plan, and this impact would be *less than significant*.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	❒	❒	■	❒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❒	❒	■	❒
c) Emit hazardous emissions or handle hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	❒	❒	❒	■
d) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?	❒	❒	■	❒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area?	❒	❒	❒	■
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❒	❒	■	❒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	❒	❒	■	❒

EXISTING CONDITIONS

The following databases were searched for hazardous materials sites at the project site and the surrounding 1-mile radius:

- Department of Toxic Substances Control's (DTSC's) EnviroStor online database[39]
- State Water Resources Control Board's GeoTracker online database[40]

[39] Department of Toxic Substances Control, 2024, EnviroStor Database, https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=2223+Fulton+Street%2C+Berkeley%2C+CA, accessed May 20, 2024.

[40] State Water Resources Control Board, 2024, GeoTracker Database, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=2223+fulton+street%2C+berkeley%2C+CA#, accessed May 20, 2024.

- United States Environmental Protection Agency's EJScreen online database[41]

Of the three databases, hazardous materials sites were reported on EnviroStor and on GeoTracker. EnviroStor identifies the entire UC Berkely Campus Park as a Tiered Permit site, which is a facility that handles and treats hazardous materials under a permit. Additional sites identified on EnviroStor include:

- Voluntary Cleanup Site: Virginia Cleaners, approximately 0.6-mile northwest of the project site
- Site under Evaluation: Former Cal Cleaners, approximately 0.5-mile southeast of the project site

The GeoTracker online database reported the following hazardous material sites:

- Six Cleanup Program Sites, including Campus Park, within a 1-mile radius of the project site, including:
    - 2001 Ashby Avenue, approximately 0.9-mile southwest of the project site
    - 2009 Addison Street, approximately 0.3-mile northwest of the project site
    - 2127-2159 Dwight Way, approximately 0.3-mile southwest of the project site
    - 2531 Telegraph Avenue, approximately 0.5-mile southeast of the project site
    - 2089-2091 Rose Street, approximately 0.9-mile northwest of the project site
    - 1840/1894 University Avenue, approximately 0.4-mile northwest of the project site
- Five open Leaking Underground Storage Tank (LUST) cleanup sites, including:
    - 2176 Kittredge Street, approximately 300-feet west of the project site
    - 2996 Telegraph Avenue, approximately 0.9-mile southeast of the project site
    - 2590 Bancroft Way, approximately 0.5-mile east of the project site
    - 1484-1498 University Avenue, approximately 0.9-mile northwest of the project site
    - 1894 University Avenue, approximately 0.4-mile northwest of the project site

While the database search revealed that the entire UC Berkley Campus Park is a hazardous materials site, the project site itself does not include facilities that would involve the handling or treatment of hazardous materials. Examples of facilities at Campus Park where handling or treatment of hazardous materials could occur include the chemistry building or the Hazardous Materials Facility. The Hazardous Materials Facility is approximately 570 feet northeast of the project site.

There are two existing kindergarten through 12th grade (K-12) schools within one-quarter mile of the project site: East Bay School for Boys and Berkeley High School. The nearest public airport is Oakland

[41] United States Environmental Protection Agency, 2023, EJScreen Database, https://ejscreen.epa.gov/mapper/, accessed May 20, 2024.

International Airport, approximately 14 miles south of the project site.[42] The project site is not in a Very High Fire Hazard Severity Zone (VHFHSZ) for wildland fires designated by the California Department of Forestry and Fire Protection.[43]

Emergency response issues in the project area are addressed by UC Berkeley's Emergency Operations Plan (EOP) and the City of Berkeley's EOP. UC Berkeley's Office of Emergency Management (OEM) is responsible for emergency response preparedness programs, plans, and procedures to protect the health and safety of students and staff. The OEM works collaboratively with the City of Berkeley's Office of Emergency Services, as necessary, to respond to, recover from, and reduce the effects of risks associated with emergencies of all types and sizes.

DISCUSSION

a) Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

The existing surface parking lot, landscaping and off-site sections of sidewalk to be demolished would not contain substantial concentrations of hazardous materials because these uses do not involve the routine use of such materials. Potentially hazardous materials would be used during construction such as fuels, lubricants, and greases in construction equipment and coatings used in construction. However, the materials used would not be in such quantities or stored in such a manner as to pose a significant safety hazard. The proposed project would be required to adhere to the existing UC Berkeley, State, and federal laws, such as the Resource Conservation and Recovery Act, Hazardous Materials Transportation Act, Code of Federal Regulations, Health and Safety Code, CCR, CBC, California Fire Code (CFC), and BAAQMD's District Regulation 11, Rules 1 and 2. This also includes hazardous materials regulations set forth by both the federal- and State-level Department of Transportation, Environmental Protection Agency, and Occupational Safety and Health Administration (Cal/OSHA). Specifically, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, exposure warnings, availability of safety equipment, and preparation of emergency action/prevention plans. As part of the proposed project, the following UC Berkeley CBPs pertaining to hazards and hazardous materials (HAZ) would be implemented:

- **CBP HAZ-1:** UC Berkeley will implement the same (or equivalent) health and safety plans, programs, practices, and procedures related to the use, storage, disposal, or transportation of hazardous materials and wastes (including chemical, radioactive, and biohazardous materials and waste) during the proposed project. These include, but are not limited to:

[42] Oakland International Airport, December 2010, *Land Use Compatibility Plan,* https://www.acgov.org/cda/planning/generalplans/documents/OAK_ALUCP_122010_FULL.pdf, accessed May 20, 2024.

[43] California Department of Forestry and Fire Protection, 2024, FHSZ Viewer, https://experience.arcgis.com/experience/03beab8511814e79a0e4eabf0d3e7247/, accessed May 20, 2024.

- Requirements for safe transportation of hazardous materials
- UC Berkeley Office of Environment, Health & Safety training programs and oversight
- Soil management procedures
- The Hazard Communication Program
- Publication and promulgation of the Water Protection Policy, the drain disposal guidelines, the Wastewater Toxics Management Plan, and the Slug Control Plan
- Requirements that laboratories have Chemical Hygiene Plans and a chemical inventory database
- The Aboveground Storage Tank Spill Prevention Control and Countermeasure Plan and monitoring of underground storage tanks
- Implementation of the hazardous waste management program and policies
- The Green Labs Program
- The Biosafety Program
- The Medical Waste Management Program
- The Laser Safety Program
- The Radiation Safety Program

These programs may be subject to modification as regulations or UC Berkeley policies are developed or if the programs become obsolete through replacement by other programs that incorporate similar or more effective health and safety protection measures. However, any modifications must incorporate similar or more effective health and safety protection measures.

- **CBP HAZ-4:** UC Berkeley will continue to perform hazardous materials surveys prior to capital projects in existing UC Berkeley buildings. UC Berkeley will continue to comply with federal, State, and local regulations governing the abatement and handling of hazardous building materials and each project will address this requirement in all construction.

Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials, including the CBPs, would ensure that all potentially hazardous materials are used and handled in an appropriate manner and impacts would be *less than significant*.

Operation

Operation, and more often maintenance and upkeep, of the proposed project would involve the use of small amounts of hazardous materials, such as cleansers and paints for cleaning and maintenance purposes, or fertilizers and herbicide/pesticides for landscaping. However, the proposed land use is not associated with uses that use, generate, store, or transport large quantities of hazardous materials; such uses generally include manufacturing, industrial, medical (e.g., hospital), and other similar uses. Additionally, it is unlikely the proposed project would require UC Berkeley to obtain and store more

materials compared to existing conditions. Compliance with applicable laws and regulations governing the use, storage, transportation, and disposal of hazardous materials as previously listed, including CBP HAZ-1, would ensure that all potentially hazardous materials are used and handled in an appropriate manner and impacts would be *less than significant*.

b) Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c) Would the proposed project emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Use of hazardous materials during construction of the proposed project could potentially include fuels, lubricants, greases, and coatings. Use of hazardous materials after construction could potentially include cleaning solvents, fertilizers, pesticides, and other materials used in the regular maintenance and operation of the proposed uses. An accidental release of any of these materials could pose a health hazard to the public or result in emissions of hazardous materials proximate to schools.

Existing UC Berkeley, State, and federal laws and regulations would serve to prevent the release of hazardous materials into the environment, including those mentioned under criterion (a), above. Specifically, work that would potentially expose schools, workers or the public to hazardous building materials would be regulated by CCR, Title 8, Section 1529 and Section 1532.1, CFR, Title 40, Part 61, Subpart M and Title 29, Section 1926.62, and BAAQMD's District Regulation 11, Rule 2, and District Regulation 11, Rule 1. Additionally, the stormwater best management practices required for the proposed project would assist in the prevention of accidental release of hazardous materials (see Section X, Hydrology and Water Quality, for additional detail). Compliance with these existing laws, regulations, policies, and procedures, including CBP HAZ-1, would ensure that the proposed project would not create a significant hazard to the public or schools and impacts would be *less than significant*.

d) Would the proposed project be on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?

The project site is on the Campus Park area of UC Berkeley, and the database search revealed that Campus Park is on a list of hazardous materials sites due to operation under a Tiered Permit. As described above in Existing Conditions, the Tiered Permit is for the handling and treatment of hazardous materials, which occurs in certain buildings and areas of Campus Park, such as Gilman Hall where academic chemistry labs are located or the Hazardous Materials Facility. Gilman Hall is approximately 3,100 feet northeast of the project site, and the Hazardous Materials Facility is located approximately 570 feet northeast of the project site.

As part of the proposed project, the following hazards and hazardous materials CBP would be implemented:

- **CBP HAZ-5:** UC Berkeley will continue to perform site histories and due diligence assessments of all sites where ground-disturbing construction is proposed, to assess the potential for soil and groundwater contamination resulting from past or current site land uses at the site or in the vicinity. The investigation will include review of regulatory records, historical maps and other historical documents, and inspection of current site conditions. UC Berkeley will act to protect the health and safety of workers or others potentially exposed should hazardous site conditions be found.

CBP HAZ-5 establishes a series of actions and procedures that UC Berkeley and future development must comply with to reduce risks associated with hazardous materials sites. The proposed project would also be required to comply with CBP HAZ-1 and CBP HAZ-4, as listed under criterion (a), and conduct further analysis and appropriately manage any contamination that could be encountered during construction. Therefore, impacts would be *less than significant*.

e) For a project within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the proposed project result in a safety hazard or excessive noise for people living or working in the project area?

The project site is not within an airport land use plan or within two miles of a public use airport. The nearest public airport is Oakland International Airport, approximately 14 miles south of the project site. Therefore, the proposed project would not result in a safety hazard or excessive noise for people residing in the project area and *no impact* would occur.

f) Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The proposed project would be required to comply with the provisions of the California Fire Code (CFC) and CBC. The proposed project would not involve street closures, access restrictions or other physical components that would interfere with the ability of UC Berkeley, the City of Berkeley, Alameda County, or emergency response service providers to implement emergency response activities on the project site or in its vicinity.

The proposed project would be required to comply with applicable federal, State, and local agency regulations related to roadway and transportation facility design. The proposed project would not conflict with or block fire access routes. Potential temporary closures of fire access routes during construction would be coordinated with the City of Berkeley Fire Department, if necessary. In the event a temporary street closure would be necessary, protocols included within emergency response plans which may include the use of alternate routes, sirens, emergency vehicle preemption at traffic signals, and other methods to bypass congestion and minimize response times would be required.

The proposed project would not interfere with the operation of UC Berkeley's EOP and would not interfere with the operations of emergency response agencies or with coordination and cooperation between such agencies. The proposed project would not result in substantial changes to the circulation patterns or emergency access routes and would not block or otherwise interfere with the use of evacuation routes. Therefore, impacts to emergency response planning would be *less than significant*.

g) Would the proposed project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project site is not in a VHFHZ and would be adequately served by the Berkeley Fire Department. The proposed project would be required to comply with regulations to minimize fire risk during construction and operation. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires and impacts would be *less than significant*. Wildfire impacts are discussed in further detail in Section XX, Wildfire.

X. HYDROLOGY AND WATER QUALITY

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	❒	❒	■	❒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	❒	❒	■	❒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial erosion or siltation on- or off-site;	❒	❒	■	❒
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	❒	❒	■	❒
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	❒	❒	■	❒
iii) Impede or redirect flood flows?	❒	❒	❒	■
d) In a flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	❒	❒	❒	■
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is in the service area of the East Bay Plain groundwater subbasin. While the Regional Water Quality Control Board (RWQCB) identifies beneficial uses of the basin as municipal, industrial, and agricultural water supply, the East Bay Municipal Utility District does not currently extract groundwater to meet the water demand in its service area.[44] The northern portion of the East Bay Plain groundwater basin does not have sufficient groundwater yield to be used as a future groundwater supply source. The confined, deep aquifer of the East Bay Plain is only present in the southern half of the subbasin in sufficient quantities to meet municipal supply demands. The deep aquifer thins out to the north and becomes an insignificant source of groundwater south of downtown Oakland. The remaining portion of

[44] East Bay Municipal Utility District, June 2021, *Urban Water Management Plan 2020*, https://www.ebmud.com/download_file/force/9151/735?UWMP-2020-FINAL-bookmarks.pdf, accessed May 21, 2024.

the East Bay Plain Subbasin has shallow aquifers that cannot serve as a significant source of groundwater.[45] The groundwater basin is not currently the local water supply and does not serve local or planned land uses.

The project site lies within the Strawberry Creek Watershed. The approximately 3-square mile watershed encompasses much of the Campus Park portion of UC Berkeley. Specifically, the watershed begins at Grizzly Peak in the Berkeley Hills, flows through UC Berkeley as North and South Forks of Strawberry Creek and Strawberry Creek before flowing through residential areas of Berkeley and into the San Francisco Bay. The off-site improvements included as part of the proposed project on Oxford/Fulton Street and Bancroft Way are in the Potter and Derby Creeks Watershed. The off-site improvements on Bancroft Way lie in the Potter and Derby Creeks Watershed. The approximately 3.8-square-mile watershed encompasses parts of the UC Berkeley campus south of Strawberry Creek. Runoff runs mostly underground in a westerly direction and drains to south Berkeley from the Berkeley Hills to Aquatic Park and the San Francisco Bay.[46] Derby Creek drains the Clark Kerr Campus and the surrounding areas, while small parts of the creek's headwaters are open to the sky, north of the Clark Kerr Campus.[47] Both Potter Creek and Derby Creek stream channels have been filled in and replaced by storm drain networks.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No. *06001C0057G*, dated August 3, 2009, the project site is not in a 100-year flood hazard zone.[48] The project site is also not in a tsunami inundation area or a dam inundation zone and there are no nearby bodies of water that could trigger seiches that would impact the site. [49, 50]

[45] East Bay Municipal Utility District, June 2021, *Urban Water Management Plan 2020*, https://www.ebmud.com/download_file/force/9151/735?UWMP-2020-FINAL-bookmarks.pdf, accessed April 3, 2024.

[46] Alameda County Flood Control and Water Conservation District, Interactive Map: Alameda County Watersheds, https://acfloodcontrol.org/the-work-we-do/resources/#explore-watersheds, accessed April 3, 2024.

[47] University of California Berkeley, 2023, *Creeks of Uc Berkeley: Derby Creek*, https://creeks.berkeley.edu/creeks-and-watersheds/derby-creek, accessed April 3, 2024.

[48] Federal Emergency Management Agency, FEMA Flood Map Service Center, 2009, *Map No. 06001C0057G*, https://msc.fema.gov/portal/search?AddressQuery=2651%20Bancroft%20Way%2C%20Berkeley%2C%20CA%2094704, accessed April 3, 2024.

[49] California Governor's Office of Emergency Services, updated August 12, 2019, Tsunami Inundation Zones, https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=4d56b41ba6c64d538ec3a91d40078dff, accessed April 3, 2024.

[50] California Division of Safety of Dam, 2023, California Dam Breach Inundation Maps, https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2, accessed April 3, 2024.

DISCUSSION

a) Would the proposed project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

Demolition, clearing, grading, excavation, and construction activities associated with the proposed project would have the potential to impact water quality through soil erosion and by increasing the amount of silt and debris carried in stormwater runoff. Additionally, the use of construction materials, such as fuels, solvents, and paints, would present a risk to surface water quality. Finally, the refueling and parking of construction vehicles and other equipment on-site during construction could result in oil, grease, or related pollutant leaks and spills if they were to discharge into the storm drain system.

To minimize these potential impacts, development of the proposed project would require compliance with the Construction General Permit Water Quality Order 2022-0057-DWQ, which includes the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP requires the incorporation of BMPs to control sediment, erosion, and hazardous materials contamination of runoff during construction to prevent contaminants from reaching receiving water bodies. The State Water Resources Control Board (SWRCB) mandates that projects that disturb one or more acres of land must obtain coverage under the Statewide Construction General Permit. The Construction General Permit also requires that, prior to the start of construction activities, the project applicant must file Permit Registration Documents with the SWRCB, which includes a notice of intent, risk assessment, site map, annual fee, signed certification statement, and SWPPP. The construction contractor is required to maintain a copy of the SWPPP at the project site and implement all construction BMPs identified in the SWPPP during construction activities. Prior to the issuance of a grading permit, the project applicant is required to provide proof of filing of the Permit Registration Documents with the SWRCB. Additionally, as part of the proposed project, the following UC Berkeley CBP pertaining to hydrology and water quality (HYD) would be implemented:

- **CBP HYD-1:** During the plan check review process and construction phase monitoring, UC Berkeley Office of Environment, Health & Safety will review the proposed project to determine whether project runoff would increase pollutant loading and verify that the proposed project complies with all applicable requirements (e.g., Regional Water Quality Control Board and Campus Design Standards requirements) and best management practices (e.g., those described in the California Stormwater Quality Association's Construction BMP Handbook).

Submittal of the Permit Registration Documents and implementation of the SWPPP for the construction phase of the proposed project would address anticipated and expected pollutants of concern from construction activities. Furthermore, during the construction monitoring phase, UC Berkeley Office of Environment, Health & Safety (EH&S), or an approved third party, would verify that the proposed project complies with all applicable requirements, BMPs, and CBP HYD-1. As a result, water quality impacts associated with construction activities would be *less than significant*.

Operation

Once the proposed project has been constructed, operation of the project would potentially improve water quality compared to existing conditions. Currently, the site is developed with an asphalt parking lot, which can allow oil, grease and other pollutants associated with cars, such as heavy metals in break dust, to accumulate. These contaminants become mobilized during precipitation events and runoff into storm drains, eventually being discharged to surface waters. The proposed project would not include impervious vehicle parking lots, eliminating this source of stormwater pollution.

Although the proposed project would eliminate much of the existing pollutants from vehicles in stormwater runoff from the site and result in additional pervious surface on-site, the proposed project would include new impervious surfaces, such as the new team building. Runoff from impervious surfaces on the site could mobilize trash and debris improperly discarded outside of trash bins during events at the volleyball facility. Stormwater flows from on-site impervious areas would be treated via a subsurface infiltration trench with a perforated pipe located at the subgrade of the beach volleyball courts. Proposed new impervious areas on site would be under 10,000 square feet, total.

Additionally, the proposed project would be regulated under the National Pollutant Discharge Elimination System (NPDES) permit program, which was established by the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States, including discharges from municipal separate storm sewer systems (MS4s). In California, the NPDES permit program is administered by the SWRCB through the nine RWQCBs. The UC Berkeley campus lies within the jurisdiction of the San Francisco Bay RWQCB (Region 2) and is subject to the waste discharge requirements for the Phase II Small MS4 Permit (Order No. 2013-0001-DWQ, NPDES Permit No. CAS000004) with the last amendment, Order No. WQ 2018-0007-EXEC, issued in March 2018.

Water quality in stormwater runoff is regulated by the Non-Traditional Phase II Small MS4 permit, which includes the F.5.g provisions that incorporate post-construction stormwater control/Low-Impact Development (LID) measures. All new development or redevelopment projects that create and/or replace more than 5,000 square feet of impervious surface would be classified as Regulated Projects and would be subject to the F.5.g provisions of the permit, requiring site design, source control, runoff reduction, and stormwater treatment. Additionally, as part of the proposed project, the following hydrology and water quality CBPs would be implemented:

- **CBP HYD-2:** UC Berkeley will continue implementing an urban runoff management program containing best management practices, as published in the Strawberry Creek Management Plan, and as developed through the Stormwater Permit Annual Reports completed for the Phase II municipal separate storm sewer system (MS4) permit. UC Berkeley will continue to comply with the MS4 stormwater permitting requirements by implementing construction and post-construction control measures and best management practices required by project-specific Stormwater Pollution Prevention Plans (SWPPPs) and by the Phase II MS4 permit to control pollution. SWPPPs will be prepared by the project contractor as required to prevent discharge of pollutants and to minimize sedimentation resulting from construction and the transport of soils by construction vehicles.

- **CBP HYD-3:** UC Berkeley will maintain a campuswide educational program regarding safe use and disposal of facilities maintenance chemicals and laboratory chemicals to prevent the discharge of these pollutants to Strawberry Creek and campus storm drains.
- **CBP HYD-5:** Landscaped areas of development sites will be designed to absorb runoff from rooftops and walkways. Open or porous paving systems will be included in project designs, where feasible, to minimize impervious surfaces and absorb runoff.

With the design of the proposed project including an infiltration trench for runoff and reducing the amount of impervious surface on-site compared to existing conditions, compliance with the F.5.g provisions of the Phase II Small MS4 permit, and adherence to UC Berkeley's policies, including CBP HYD-2 through CBP HYD-5, operational impacts to water quality would be *less than significant*.

b) Would the proposed project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The proposed project would result in a net decrease in impervious surfaces on the project site and include an infiltration trench, thus increasing the potential for groundwater recharge. However, the proposed project would utilize water, such as for drinking fountains, bathroom fixtures, and landscaping, which would increase demand for water. Water is supplied by East Bay Municipal Utility District, which sources its water supply from surface waters, primarily the Mokelumne River (East Bay Municipal Utility District 2021). Therefore, the water demand generated from the proposed project would not increase demand for groundwater.

If construction dewatering is required due to the presence of shallow groundwater, any related effects would be temporary in nature and would not substantially interfere with groundwater recharge nor contribute to the lowering of the local groundwater table. As part of the proposed project, the following hydrology and water quality CBPs would be implemented:

- **CBP HYD-7:** UC Berkeley will continue to review each development project, to determine whether rainwater infiltration to groundwater is affected. If it is determined that existing infiltration rates would be adversely affected, UC Berkeley will design and implement the necessary improvements to retain and infiltrate stormwater. Such improvements could include retention basins to collect and retain runoff, grassy swales, infiltration galleries, planter boxes, permeable pavement, or other retention methods. The goal of the improvement should be to ensure that there is no net decrease in the amount of water recharged to groundwater that serves as freshwater replenishment to Strawberry Creek. The improvement should maintain the volume of flows and times of concentration from any given site at pre-development conditions.
- **CBP HYD-8:** Dewatering, when needed, will be monitored and maintained by qualified engineers in compliance with the Campus Design Standards and applicable regulations.

Continued implementation of CBP HYD-7 and CBP HYD-8 would minimize impacts to groundwater recharge from the proposed project. In summary, compliance with UC Berkeley's policies and CBPs and

the proposed stormwater design of the proposed project would ensure a *less-than-significant* impact on groundwater supply and recharge.

c) Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) Result in substantial erosion, siltation, or flooding on- or off-site; (ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; (iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or (iv) Impede or redirect flood flows?

Storm drainage for the proposed project would connect to the City of Berkeley's storm drain system within Fulton Street and Bancroft Way. Before discharge to the City's storm drain system, precipitation and stormwater runoff from impervious surfaces of the project site would be directed to an internal infiltration trench with a perforated pipe located subgrade. The proposed project would not involve the alteration of natural drainage channels or watercourses.

Erosion and Siltation

The proposed project would involve site improvements that require grading, excavation, and soil exposure during construction, with the potential for erosion or siltation to occur. If not controlled, the transport of these materials to local waterways could temporarily increase suspended sediment concentrations and release pollutants attached to sediment particles. To minimize this impact, the proposed project would be required to comply with the requirements in the State's Construction General Permit, including preparation of a Notice of Intent and SWPPP prior to the start of construction activities, as described under criterion (a). The SWPPP would describe the BMPs to be implemented during the project's construction activities. The implementation of the BMPs during the construction phase would include the following measures to minimize erosion and siltation:

- Minimize disturbed areas of the site
- Implement dust control measures, such as silt fences and regular watering of open areas
- Stabilize construction entrances/exits
- Install storm drain inlet protection measures
- Install sediment-control measures around the site, including silt fences and/or gravel bag barriers

Once the proposed project has been constructed, runoff would be directed to either pervious landscaping areas or to an infiltration trench. Runoff reaching the infiltration trench would either infiltrate the ground surface or enter a new perforated pipe. These measures would comply with Provision F.5.g requirements in the Phase II Small MS4 permit. Additionally, as part of the proposed project, the following hydrology and water quality CBPs would be implemented:

- **CBP HYD-9:** The campus storm drain system will be maintained and cleaned to accommodate existing runoff.

- **CBP HYD-11:** Development that encroaches on creek channels and riparian zones will be prohibited. An undisturbed buffer zone will be maintained between proposed capital projects and creek channels.
- **CBP HYD-13:** UC Berkeley will continue to manage runoff into storm drain systems such that the aggregate effect of projects implemented pursuant to the LRDP creates no net increase in runoff over existing conditions.

Collectively, implementation of the BMPs outlined in the SWPPP, the stormwater management design, and UC Berkeley's listed CBPs would address the potential erosion and siltation impacts during the construction and operational phases of the proposed project. Therefore, the proposed project would not result in substantial erosion or siltation on- or off-site and impacts would be *less than significant*.

Flooding On- or Off-Site and Stormwater Drainage System Capacity

As previously mentioned, there would be a net reduction in impervious surfaces on-site, which could increase infiltration and decrease the rate of surface runoff compared to existing conditions.

In compliance with the Phase II Small MS4 permit, the proposed project would include a new infiltration trench that would hold and treat stormwater before it is released into a new perforated pipe connected to the City of Berkeley's off-site storm drain infrastructure in Fulton Street and Bancroft Way. The infiltration trench and increase in on-site pervious surface would decrease peak-flow rates, thus reducing the rate of stormwater runoff entering the storm drain system. In addition, UC Berkeley manages runoff into storm drain systems such that the aggregate effect of new projects is no net increase in runoff over existing conditions. Adherence to regulatory requirements and compliance with UC Berkeley's CBPs would minimize the amount of stormwater runoff from the proposed project.

Additionally, the proposed project would not create substantial additional sources of polluted runoff. During the construction phase, the proposed project would be required to prepare a SWPPP, thus limiting the discharge of pollutants from the project site. During operation, the proposed project would implement BMPs according to the stormwater management plan that minimize the amount of stormwater runoff and associated pollutants per the Phase II MS4 permit.

With implementation of the proposed project's operational stormwater runoff management (i.e., pervious surfaces and an infiltration trench), BMPs listed in the SWPPP for construction, and UC Berkeley's policy of no net increase in stormwater runoff from redevelopment sites, stormwater runoff from the proposed project would not result in substantial flooding on- or off-site or exceed the capacity of existing or planned storm drain facilities, and impacts would be *less than significant*.

Redirecting Flood Flows

The project site is not within a 100-year floodplain or in a dam or tsunami inundation zone. The proposed project would not substantially alter drainage patterns in the project area. Therefore, there would be *no impact* related to impeding or redirecting flood flows.

d) In flood hazard, tsunami, or seiche zones, would the proposed project risk release of pollutants due to project inundation?

The project site is not in a 100-year flood hazard zone, tsunami inundation area, or dam inundation zone or near bodies of water that could trigger seiches that would reach the site. Therefore, there would be *no impact* associated with a flood hazard, tsunami, or seiche.

e) Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Adherence to the Construction General Permit, UC Berkeley policies, and CBP HYD-1 through CBP HYD-5 would ensure that surface and groundwater quality are not adversely impacted during construction and operation of the proposed project. The project site is in the East Bay Municipal Utility District service area, which relies solely on surface water supply. Groundwater is not currently used as a municipal water supply source, and the northern portion of the East Bay Plain groundwater basin, where the project site is located, does not have sufficient groundwater yield to be used as a future groundwater supply source. Therefore, the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan and impacts would be *less than significant*.

XI. LAND USE AND PLANNING

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Physically divide an established community?	❒	❒	❒	■
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is located in UC Berkeley's Campus Park land use zone, on the southern edge of Campus Park adjacent to Oxford/Fulton streets and Bancroft Way. The project site is located on the north side of Bancroft Way and the east side of Oxford/Fulton streets and is directly west of Edwards Stadium. UC Berkeley is not subject to local zoning and is constitutionally exempt from local government regulations such as city and county general plans, land use policies and zoning regulations whenever using property under its control in furtherance of its educational purposes. The project site is in an area with many UC Berkeley athletic facilities, including Edwards Stadium, the Hellman Tennis Center, the Stu Gordon Stadium (baseball field), Legends Aquatic Center, and the Recreational Sports Facility. The project site is located in UC Berkeley's Campus Park land use zone and included in the 2021 Long Range Development Plan as a future building area. The Long Range Development Plan identifies two primary uses for Campus Park: academic and research space and campus life. Academic and research space is defined as academic and research uses, such as instructional facilities, academic offices, research labs, and libraries. Campus life is defined as uses that support campus life and community, such as social space, dining facilities, assembly facilities, and retail facilities. Athletics and recreation are identified as a secondary use for Campus Park.

DISCUSSION

a) Would the proposed project physically divide an established community?

The physical division of an established community typically refers to the construction of a physical feature (such as a wall, airport, interstate highway, or railroad tracks) or the removal of a means of access (such as a local road or bridge) that would impair mobility in an existing community or between a community and outlying areas. It also refers to the placement of a development in such a manner that it physically divides or separates an established community.

The proposed project would involve the demolition of the existing surface parking lot and associated landscaping, and relocation of on-site ticket booths on the project site and the construction of beach volleyball courts and an associated team facility in the same location. The volleyball facility would be

consistent with adjacent athletic uses, such as Edwards Stadium, the Stu Gordon Stadium, and the Hellman Tennis Facility. As such, the proposed project would not physically divide an established community and there would be *no impact*.

b) Would the proposed project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

As noted above, UC Berkeley is constitutionally exempt from local regulations whenever using property under its control in furtherance of its educational mission. The proposed project would support UC Berkeley's Athletics needs and compliance with Title IX. The proposed project is located in the south western quadrant of the campus adjacent to the athletic facilities such as the tennis courts, Edwards Stadium, Legends Aquatic Center, and the Recreational Sports Facility. As such, it is consistent with neighboring land uses. As discussed in Section 3.2, Project Background, the proposed project would replace this parking area with a beach volleyball complex. The project site is included in the 2021 Long Range Development Plan as a future building area and an area where athletics facilities are identified as a secondary use. As described on Page 39 of the Long Range Development Plan, redevelopment of existing parking facilities is a strategy UC Berkeley plans to implement in order to develop new campus facilities and buildings. The 2021 LRDP EIR evaluates the construction of new parking facilities and elimination of some existing parking facilities and spaces for a net increase that preserves the ratio of parking supply to the UC Berkeley population. [51] As part of the proposed project, the following UC Berkeley CBP pertaining to land use (LU) would be implemented:

- **CBP LU-1:** New projects in the Campus Park will, as a general rule, conform to the Physical Design Framework. The Physical Design Framework includes specific provisions to ensure projects at the city interface consider the transition from campus to city.

Therefore, the proposed project would not conflict with any of UC Berkeley's land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect and impacts would be *less than significant*.

[51] The 2021 LRDP EIR was certified by the UC Regents in July 2021 and is the subject of ongoing litigation.

XII. MINERAL RESOURCES

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	❒	❒	❒	■
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	❒	❒	❒	■

EXISTING CONDITIONS

The California Department of Conservation, Geological Survey (CGS) classifies lands into Aggregate and Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1974. These MRZs identify whether known or inferred significant mineral resources are present in areas. The project site does not contain areas for mineral resources where there is adequate information indicating significant mineral deposits or the high likelihood of significant mineral deposits present.[52, 53]

DISCUSSION

a) Would the proposed project result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

There are no known mineral resources on or near the project site. Therefore, the proposed project would not result in a loss of availability of a mineral resource and *no impact* would occur.

b) Would the proposed project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

There are no known mineral resources on or near the project site. Therefore, the proposed project would not result in a loss of availability of a mineral resource recovery site and *no impact* would occur.

[52] California Department of Conservation, 2016, Mines Online, https://maps.conservation.ca.gov/mol/index.html, accessed May 22, 2024.

[53] California Department of Conservation, 1982, *Mineral Land Classification Map Special Report 146*.

XIII. NOISE

Would the Proposed Project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	❒	■	❒	❒
b) Generation of excessive groundborne vibration or groundborne noise levels?	❒	■	❒	❒
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	❒	❒	❒	■

This section of environmental analysis is based on a noise technical memorandum prepared for the project by Rincon Consultants. The technical memorandum, dated January 3, 2025, is included as Appendix C, *Noise Assessment*, of this Initial Study.

TERMINOLOGY

The following are brief definitions of terminology used in this section:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unit-less measure of sound on a logarithmic scale.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Ambient Noise Level.** The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
- **Equivalent Continuous Noise Level (L_{eq}).** The mean of the noise level (or energy) averaged over the measurement period.
- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

- **Day-Night Sound Level (Ldn or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. Note that for general community/environmental noise, CNEL and Ldn values rarely differ by more than 1 dB. As a matter of practice then, Ldn and CNEL values are considered to be equivalent/interchangeable and are treated as such in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Noise is defined as unwanted sound and, when overexposed, is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, federal, State, and local governments have established criteria to protect public health and safety and to prevent the disruption of certain human activities, such as classroom instruction, communication, or sleep.

Vibration can cause adverse effects on humans and, if vibration levels are high enough, it can cause architectural damage to buildings (e.g., cosmetic damage to plaster). As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels.

Additional information on noise and vibration fundamentals and applicable regulations are contained in Appendix C, *Noise Assessment*, of this Initial Study.

EXISTING CONDITIONS

Existing long-term ambient noise levels near the project site is primarily traffic noise from vehicles traveling along nearby roadways, such as Bancroft Way, Fulton/Oxford Street, and Kittredge Street. As part of the noise analysis for the 2021 LRDP EIR, existing roadway traffic noise levels were established throughout in the plan vicinity, including on roadways near the project site.[54] A summary of existing

[54] The LRDP EIR is available for review at https://capitalstrategies.berkeley.edu/planning-documents or at University of California, Berkeley Capital Strategies, Physical and Environmental Planning, 200 A&E Building, Berkeley, CA 94720-1382

average daily trips (ADT) and associated noise levels for roadway segments near the project site are shown in**Error! Reference source not found.** Table 4-6.

TABLE 4-6 EXISTING TRAFFIC VOLUMES AND LONG-TERM NOISE LEVELS

Roadway	Segment	Existing Average Daily Trips	Existing Noise Level at 50 Feet from Roadway Centerline (dBA DNL)
Bancroft Way	Ellsworth Street to Fulton Street	10,690	65.4
Fulton Street	South of Bancroft Way	11,720	64.0
Kittredge Street	Shattuck Avenue to Fulton Street	2,980	55.1
Oxford Street	South of Center Street	19,220	66.5

Source: 2021 LRDP EIR

The nearest off-site sensitive noise and vibration annoyance receptors surrounding the project site include the Career Counseling Library, approximately 250 feet southeast of the site, Saint Mark's Episcopal Church located approximately 515 feet to the southeast, single- and multi-family residences located 415 feet to the south, the Stadium Place Apartments located approximately 200 feet to the southwest, the Berkeley Shambhala Meditation Center and Oxford Plaza Apartments located approximately 100 feet to the west, The Kittredge Apartments building located approximately 85 feet to the west, and the Allston Place Apartments located approximately 150 feet to the northwest. Although not considered noise sensitive as part of the CEQA analysis for this project, buildings near the project site that could potentially be damaged by construction vibration include Edwards Stadium, immediately adjacent to the project site boundary.

DISCUSSION

a) Would the proposed project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or federal standards?

Construction

As discussed in Chapter 1, *Introduction*, UC Berkeley is constitutionally exempt from local government regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. UC Berkeley will not consider local plans, policies, and regulations in its evaluation of the environmental effects of the project unless UC Berkeley expressly decides to use a local plan, policy, or regulation as a threshold or standard of significance or if UC Berkeley determines that local plans, policies, or regulations provide important context for the assessment of environmental impacts. Because UC Berkeley has not established its own construction noise standards, UC Berkeley has elected to use the construction noise standards from the Section 13.40.070(B)(7)(a) of the City of Berkeley Municipal Code for evaluation of project impacts related to construction noise.

Section 13.40.070(B)(7)(a) of the City of Berkeley Municipal Code contains provisions for noise generated during construction, prohibiting the operating of "…or causing the operation of any tools or equipment

used in construction, drilling, repair, alteration, or demolition work before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050." Section 13.040.070(B)(7)(b) of the Berkeley Municipal Code provides the maximum sound levels allowable at affected properties based on whether the noise is from mobile or stationary construction equipment. Table 4-7 presents the City's maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment, while Table 4-8 presents the City's maximum sound levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment.

TABLE 4-7 CITY OF BERKELEY NOISE LIMITS FOR MOBILE CONSTRUCTION EQUIPMENT

Time of Day	R-1, R-2 Residential	R-3 and Above Multi-Family Residential	Commercial and Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	60 dBA	65 dBA	70 dBA

Noise levels in this table represent maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment.

Source: Table 13.40-3 of Berkeley Municipal Code

TABLE 4-8 CITY OF BERKELEY NOISE LIMITS FOR STATIONARY CONSTRUCTION EQUIPMENT

Time of Day	R-1, R-2 Residential	R-3 and Above Multi-Family Residential	Commercial and Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	50 dBA	55 dBA	60 dBA

Noise levels shown in this table represent maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment.

Source: Table 13.40-4 of Berkeley Municipal Code

Project construction activity, including worker, material delivery, and large equipment delivery trips to and from the project site, would temporarily increase noise levels along local site access roadways. Individual construction vehicle and haul trucks passing through a certain area may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent and temporary. Construction is anticipated to occur over a 12-month period, with the duration of grading estimated to last approximately 12 workdays and building construction estimated to last approximately 225 workdays. Given the scale of the proposed project, the grading and construction phase is estimated to generate up to approximately 200 vehicle trips per day, which is the largest construction period trip generator among the construction phases.[55]

[55] 40 haul trips per day during grading; 50 worker commute trips per day; 30 deliveries per day

Construction trips would occur mostly on the roads that provide through connections from major roadways, such as Interstate 880, and the project site, such as University Avenue, Shattuck Avenue and Oxford Street. According to the City of Berkeley's General Plan, these roadways have thousands to tens of thousands of vehicle trips per day.[56] The temporary addition of approximately 200 trips per day would be an incremental increase in total traffic volume on roads in the project area. According to a study published in the *International Journal of Environmental Research and Public Health*, doubling the volume of traffic on a roadway results in an approximately 2.34 dBA increase in traffic noise.[57] Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions; changes of 1 to 3 dBA are detectable under quiet, controlled conditions; and changes of less than 1 dBA are usually indiscernible. Therefore, as construction of the proposed project would not double vehicle trips on area roads, the resultant increase in traffic noise during construction would not be noticeable to most people.

Noise generated by on-site construction equipment is determined by the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each stage of construction involves different kinds of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest equipment. The dominant equipment noise source is typically the engine, although work-piece noise (such as dropping of materials) can also be noticeable. The noise produced at each activity phase is determined by combining the L_{eq} contributions from each piece of equipment used at a given time period, while accounting for the ongoing time-variations of noise emissions. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA (L_{max}) at 50 feet.[58] However, overall noise emissions vary considerably, depending on the specific activity performed at a given moment, with the acoustical usage factor included for each equipment. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given receptor. Since noise from construction equipment is intermittent and diminishes at a rate of at least 6 dBA per doubling of distance (from a point source, conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the project site with different loads and power requirements.

The proposed project would comply with the following CBP related to noise (NOI):

- **CBP NOI-2:** UC Berkeley will require the following measures for all construction projects:

[56] City of Berkeley. 2002. City of Berkeley General Plan: A Guide for Public Decision-Making. Adopted in 2001 and 2002.

[57] Hemker, F., Haselhoff, T., Brunner, S., Lawrence, B. T., Ickstadt, K., & Moebus, S. (2023). The Role of Traffic Volume on Sound Pressure Level Reduction before and during COVID-19 Lockdown Measures-A Case Study in Bochum, Germany. *International journal of environmental research and public health*, *20*(6), 5060. https://doi.org/10.3390/ijerph20065060

[58] Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Retrieved on November 7, 2024, from https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

- Construction activities will be limited to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park will be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary. As feasible, construction equipment will be required to be muffled or controlled.
- The intensity of potential noise sources will be reduced where feasible by selection of quieter equipment (e.g., gas or electric equipment instead of diesel powered, low noise air compressors).
- Functions such as concrete mixing and equipment repair will be performed off-site whenever possible.
- Stationary equipment such as generators and air compressors will be located as far as feasible from nearby noise-sensitive uses.
- At least 10 days prior to the start of construction activities, a sign will be posted at the entrance(s) to the job site, clearly visible to the public, that includes contact information for UC Berkeley's authorized representative to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, they will investigate, take appropriate corrective action, and report the action to UC Berkeley.
- During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only. The construction manager will use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.

In addition, the following air quality (AIR) CBP would help to prevent unnecessary equipment idling during construction:

- **CBP AIR-3:** UC Berkeley will continue to implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:
  - Equipment will be properly serviced and maintained in accordance with the manufacturer's recommendations.
  - Construction contractors will also ensure that all nonessential idling of construction equipment is restricted to five minutes or less, in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

As described in Appendix C, *Noise Assessment*, of this Initial Study, project construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) Version 1.1. Construction equipment would typically be dispersed throughout various areas of the site, with only a limited amount of equipment operating near a given location at a particular time. The FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) document recommends evaluating construction noise impacts from the center of the construction site, stating that the distance variable in its recommended construction noise calculation "assumes that all equipment operates at the

center of the project." Therefore, it was assumed that over the course of a typical construction day, construction equipment would operate at the center of the site, which was assumed to be located at the center of proposed Court 3. Note that the nearest receptors are zoned as commercial uses, yet some of these buildings include multi-family residences on upper floors. Therefore, noise impacts to these residential receptors were evaluated to the City's noise limits for uses zoned as multi-family residential (R-3 and above). The types of construction equipment included in the model was based on the default equipment list output from CalEEMod for a project of this type and size utilized in the Project air quality analysis. Based on CalEEMod outputs, which are available as Appendix A to the Initial Study.

Noise levels at nearby sensitive receptors are presented in Table 4-9 by project construction phase.

TABLE 4-9 PROJECT CONSTRUCTION NOISE LEVELS BY PHASE AT NEARBY SENSITIVE RECEPTORS

Construction Phase	Multi-Family to the West (130 feet)	Multi-Family to the Northwest (180 feet)	Multi-Family to the Northwest (400 feet)	City's Noise Threshold (dBA)	Exceeds City's Noise Threshold?
Demolition	78	75	68	65	Yes
Site Preparation	74	71	64	65	Yes
Grading	75	72	65	65	Yes
Paving	75	72	65	65	Yes
Building Construction	79	76	69	65	Yes
Architectural Coating	68	65	58	65	Yes

Noise levels shown in this table are in dBA Leq 8-hour
Source: Appendix C, *Noise Assessment*

As shown in Table 4-9, construction noise generated by the proposed project would exceed the City's limits at nearby multi-family residential receptors during almost all phases of construction. Therefore, temporary noise impacts associated with construction of the proposed project would be potentially significant. Accordingly, implementation of Mitigation Measure NOI-1 is required, which requires the University to install a temporary noise barrier and implement construction practices designed to reduce noise. With implementation of Mitigation Measure NOI-1, impacts to noise resulting from project construction would be *less than significant with mitigation*.

Impact NOI-1: Construction of the proposed project would result in noise levels that exceed the City of Berkeley construction noise thresholds at applicable land use receptors, resulting in a significant impact.

Mitigation Measure NOI-1: In order to reduce noise levels generated during construction of the proposed project to below the City's required thresholds, the following construction noise control measures shall be implemented:

- Prior to the initiation of construction activities at the project site, temporary noise barriers/blankets shall be installed by the project construction contractor along the western and northern boundaries of the project site to shield nearby sensitive receptors from construction noise. The temporary barriers/blankets shall have a minimum height of 15 feet and be constructed with a solid material that has a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier.

- Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer.

Significance with Mitigation: Implementation of Mitigation Measure NOI-1, including the use of temporary barriers, would reduce project construction noise levels by 19 dBA or more.[59,60] Therefore, maximum construction noise levels would be reduced to 60 dBA and below at the nearest multi-family residential receptors, which is below the City's 65 dBA Lmax threshold for multi-family residential uses. Temporary noise impacts associated with project construction would be less than significant with mitigation.

Operation

The Federal Interagency Committee on Noise (FICON) has established guidelines for assessing noise impacts based on the extent to which the existing ambient noise level at a site is increased.[61] Based on FICON recommendations, significant noise impacts are determined by the percentage of people who would be annoyed at various levels of noise exposure. The FICON criteria indicates that significant impacts would occur if project-related noise were to increase the existing noise environment by the following:

- Greater than 1.5 dBA DNL for ambient noise environments of 65 dBA DNL and higher; or
- Greater than 3 dBA DNL for ambient noise environments of 60 to 64 dBA DNL; or
- Greater than 5 dBA DNL for ambient noise environments of less than 60 dBA DNL.

Use of the FICON thresholds allows consideration of the existing noise environment in determining potential noise impacts, as noise impacts are evaluated based on the extent of an increase above the existing noise environment, depending on the existing ambient noise level. This is an important consideration, as noise generated in a loud existing noise environment is typically less disruptive than the same noise generated in a quiet existing noise environment. Therefore, use of the FICON thresholds allows for more precision in evaluating operational noise. For these reasons, UC Berkeley has applied the FICON thresholds to the analysis of project operational noise impacts.

As described in Section XVII, *Transportation*, operation of the project would result in low VMT. The project site is proximate to high-quality transit, such as a BART station. The project site is also proximate to sidewalks and bicycle facilities, encouraging either transit or active transportation modes rather than vehicle trips. Additionally, the proposed project would not include parking for spectators. If spectators were to choose to drive to volleyball events, they would disperse throughout the project area as they search from street parking in the City of Berkeley or garage parking, either on campus or in Berkeley. Because vehicles would necessarily disperse, there would be no project-related increased traffic

[59] Federal Highway Administration. 2017. Highway Construction Noise: Measurement, Prediction, and Mitigation. Available at: https://www.fhwa.dot.gov/environment/noise/construction_noise/special_report/

[60] Klinger, Richard E., et al. 2003. Design Guidelines for Noise Barriers.

[61] Federal Interagency Committee on Noise (FICON). 1992. Federal Agency Review of Selected Airport Noise Analysis Issues. Available at: https://www.faa.gov/sites/faa.gov/files/reports_noise_analysis.pdf

concentration at a specific location such that vehicle traffic noise would increase above FICON significance thresholds. Traffic volumes must increase by at least 5,000 vehicle trips per day for FICON significance thresholds to be exceeded. The project would not result in 5,000 vehicles trips per day (see Appendix C, *Noise Assessment*, of this Initial Study).

The primary sources of operational noise would include the five sand volleyball courts, two spectator lawn areas with a total capacity of approximately 500 people, and eight loudspeakers (i.e., PA system) located along the northern and eastern boundaries of the sand courts. The loudspeakers installed as part of the proposed project would be the JBL AWC129 speaker system. Noise generated by onsite stationary sources would be due primarily to players shouting and hitting the ball, spectators cheering, and use of the loudspeakers for announcements and commentary. When there are no events at the facility, operational noise, including team practice, would be minimal and not detectable above existing ambient levels at nearby sensitive receptors.

Operational noise generated by the proposed project was modeled and calculated using SoundPLAN, Version 9.0, a three-dimensional noise modeling program that incorporates noise propagation algorithms and reference sound levels published by various government agencies and the scientific community. Noise sources, receivers, structures, and site features are input using three-dimensional coordinates and noise levels are calculated at selected receivers or throughout a user-defined study area. A set of noise assumptions were included in the model, such as assuming the sound power level of the spectator area is 93 dBA. The complete list of assumptions and the basis for using these assumptions in the model is included in Appendix C, *Noise Assessment*, of this Initial Study.

The modeled noise operational noise levels are summarized in Table 4-10, and the operational noise contours associated with the proposed project's onsite stationary noise sources are shown in Figure 4-2. Please note, the sensitive receptor nomenclature in Table 4-10 corresponds to the receptor locations shown in Figure 4-2.

TABLE 4-10 PROJECT OPERATION NOISE LEVELS MODELED AT NEARBY SENSITIVE RECEPTORS

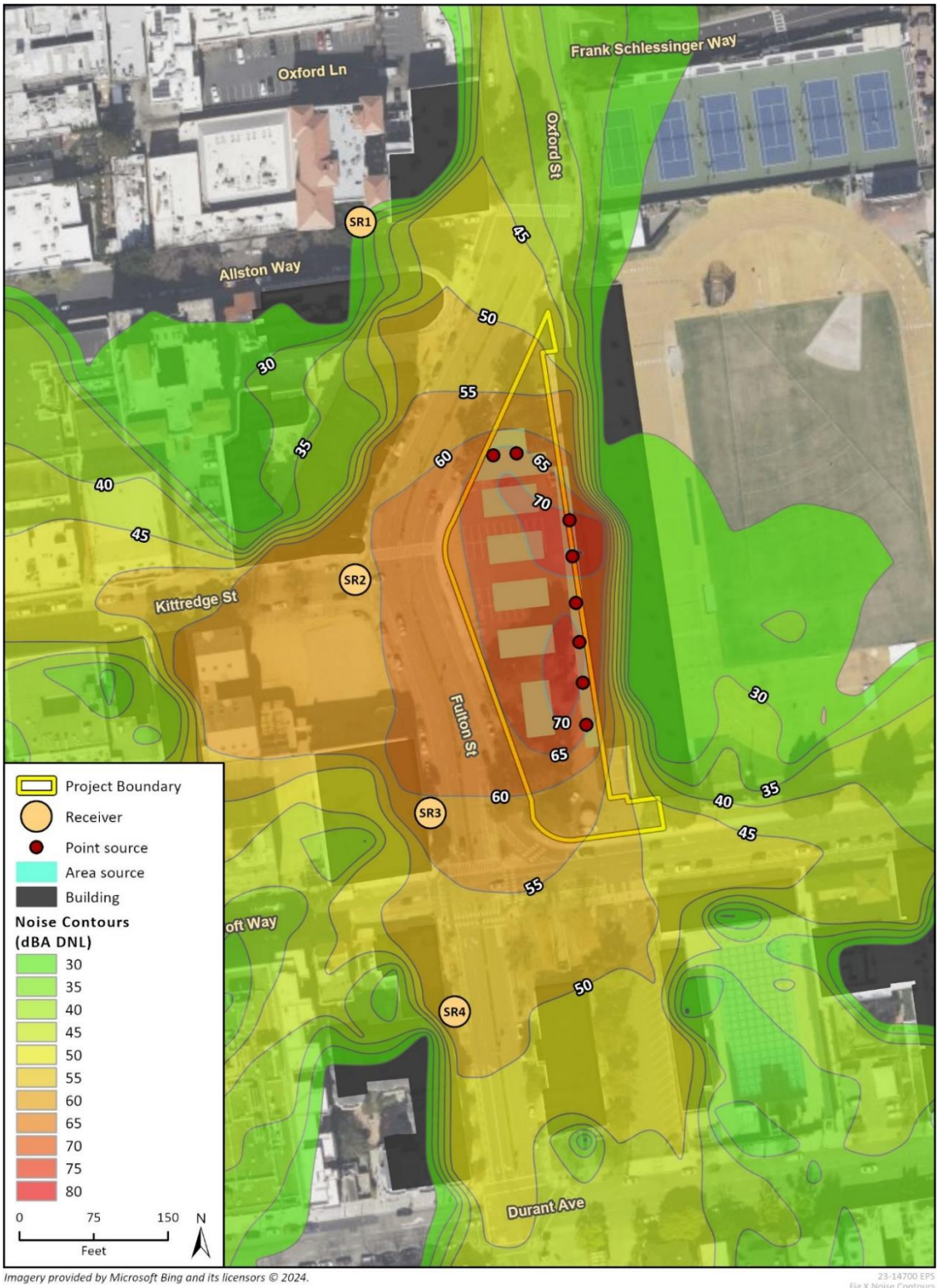
Sensitive Receptor	Existing Noise Level (dBA DNL)	Significance Threshold for Increase Above Existing Noise Level (dBA DNL)	Modeled Noise Level (dBA DNL)	Increases Existing Noise Level Above Threshold?
SR1	55.1	5.0	35.8	No
SR2	66.5	1.5	63.7	No
SR3	66.5	1.5	64.4	No
SR4	64.0	3.0	56.6	No

Please see Figure 4-2 for sensitive receptor locations.
Source: Appendix C, *Noise Assessment*

As shown in Figure 4-2 and Table 4-10, project operation noise levels at nearby receptors would not increase the existing noise levels above the respective thresholds. Operational noise levels would be approximately 36 dBA DNL at SR1 (where the existing ambient noise level is approximately 55.1 dBA DNL); therefore, noise levels at this receptor would not increase by 5 dBA DNL or more. Operational noise levels would be approximately 64 dBA DNL at SR2 and SR3 (where the existing noise level is approximately 66.5 dBA DNL); therefore, noise levels at these receptors would not increase by 1.5 dBA

DNL or more. Operational noise levels would be approximately 57 dBA DNL at SR4 (where the existing noise level is approximately 64.0 dBA DNL); therefore, noise levels at these receptors would not increase by 3 dBA DNL or more. Therefore, operational noise associated with the proposed project's onsite stationary noise sources, including things such as spectator cheering, referee whistles, and the PA system, would not increase the existing ambient noise environment above the thresholds at nearby sensitive receptors, and these impacts would be less than significant.

Figure 4-2 Operational Noise Contours



b) Would the proposed project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction activities associated with the proposed project would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Project construction activities associated with some of the highest levels of vibration (such as impact pile driving and blasting) are not proposed; therefore, the equipment that is expected to generate the greatest levels of vibration include large earthmoving equipment such as graders, dozers, and backhoes. Large earthmoving equipment generates vibration levels of approximately 0.089 in/sec PPV at a reference distance of 25 feet. [62] Based on the site plan for the proposed project, earthmoving equipment may be used within 75 feet of the nearest residential structure to the west. At this distance, earthmoving equipment would generate vibration levels up to 0.017 in/sec PPV, which would not generate vibration levels exceeding the impact threshold of 0.2 in/sec PPV (which is the limit at which minor architectural damage may occur) at the nearest residential structures.

Large earthmoving equipment, such as backhoes and dozers, may be used as close as approximately 5 feet of Edwards Stadium. At this distance, earthmoving equipment could generate vibration levels up to 0.995 in/sec PPV, which would exceed the FTA's threshold of 0.3 in/sec PPV for minor architectural damage to engineered concrete structures. Therefore, temporary vibration impacts upon this structure would be potentially significant. Accordingly, implementation of Mitigation Measure NOI-2 is required, which requires the University to use small construction equipment proximate to Edwards Stadium. With implementation of Mitigation Measure NOI-2, impacts to project construction vibration would be *less than significant with mitigation*.

Impact NOI-2: Construction of the proposed project would result in groundborne vibration levels at Edwards Stadium that could exceed the FTA's threshold for minor architectural damage to engineered concrete structures, resulting in a significant impact.

> **Mitigation Measure NOI-2:** Project construction activities that occur within 12 feet of Edwards Stadium and involve earthmoving (i.e., grading, excavation, etc.), shall be conducted with equipment that is limited to 100 horsepower or less. This construction requirement shall be included on the final construction plans for the proposed project.
>
> **Significance with Mitigation:** Implementation of Mitigation Measure NOI-2 would reduce vibration levels at Edwards Stadium to 0.034 in/sec PPV, which is below the applicable FTA threshold of 0.3 in/sec PPV. Accordingly, temporary vibration impacts associated with project construction would be less than significant with mitigation.

As a beach volleyball facility, the proposed project is not a land use type that would generate vibration. Therefore, the operation of the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels, and there would be *no impact*.

[62] Federal Transit Administration, 2018, *Transit Noise and Vibration Impact Assessment Manual*.

c) For a project within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the proposed project expose people residing or working in the project area to excessive noise levels?

The project site is not within two miles of a private airstrip and the nearest public airport is the San Francisco Bay Oakland International Airport, located approximately 15 miles to the south.[63] Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels and *no impact* would occur.

[63] Airnav.com, 2022, Airport Information, http://www.airnav.com/airports, accessed December 1, 2022.

XIV. PARKS AND RECREATION

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered parks facilities, need for new or physically altered parks facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks services?	❒	❒	■	❒
b) Increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?	❒	❒	■	❒
c) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❒	❒	■	❒

EXISTING CONDITIONS

UC Berkeley provides a variety of active and passive recreational facilities for its students, staff, faculty, and visitors. This includes open spaces, gymnasiums, sports fields, and an aquatic complex. Open spaces on the UC Berkeley campus include natural and green spaces, such as glades, lawns, and riparian areas along Strawberry Creek, as well as sidewalks, paths, and plazas, which provide for passive recreational use. UC Berkeley also has roughly 50 acres of formal athletics and recreational space, which includes approximately 27 acres of established athletics fields and outdoor areas combined with approximately 975,000 gross square feet of indoor facilities.

DISCUSSION

a) Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered parks facilities, need for new or physically altered parks facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks services?

c) Would the proposed project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The proposed project would include the provision of new sand volleyball courts on the UC Berkeley campus. The proposed project would result in a temporary occasional increase in the number of people on the campus for attendance at women's beach volleyball events. However, the proposed project would

not result in a permanent increase in population and would not require the provision of new or physically altered parks and recreational facilities in order to maintain service ratios. Construction and operation of the proposed project could potentially result in environmental impacts as analyzed throughout this document. However, impacts would be mitigated through the use of CBPs and mitigation measures as identified throughout the environmental impact discussions in this document.

Moreover, the existing sand volleyball courts will remain on the CKC campus for recreational use, so the project will not result in the demolition of the existing courts, or the need for current recreational users to seek other locations to play sand volleyball.

Therefore, the proposed project would not result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities to maintain acceptable service ratios, response times, or other performance objectives for parks services and impacts would be *less than significant.*

b) Would the proposed project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

The proposed project would not increase the population in the area and, as such, would not increase the demand for parks and recreational facilities in the area. The proposed project would not result in the increase in the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of existing facilities would occur or be accelerated, and impacts would be *less than significant.*

XV. POPULATION AND HOUSING

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Induce substantial unplanned population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❒	❒	❒	■
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	■

EXISTING CONDITIONS

The project site is currently a surface parking lot and associated landscaping with no population or residences on-site.

DISCUSSION

a) Would the proposed project induce substantial unplanned population growth or growth for which inadequate planning has occurred, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project would serve UC Berkeley's existing student athlete population. The proposed project would result in a temporary increase in in people in the area as spectators of women's beach volleyball attend events. Some of these spectators already attend the existing volleyball events at Clark Kerr sand courts. Additionally, these people would disperse after the conclusion of such events. It would not increase or otherwise affect UC Berkeley's population, the city of Berkeley's population, or housing. Therefore, the proposed project would not induce substantial unplanned population growth or growth for which inadequate planning has occurred and there would be *no impact*.

b) Would the proposed project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project site is currently an active surface parking lot with no population or residences on-site. Therefore, the proposed project would not displace substantial numbers of existing people or housing and there would be *no impact*.

XVI. PUBLIC SERVICES

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i) Fire protection?	❒	❒	❒	■
ii) Police protection?	❒	❒	❒	■
iii) Schools?	❒	❒	❒	■
iv) Libraries?	❒	❒	❒	■
v) Other public facilities?	❒	❒	❒	■

EXISTING CONDITIONS

For emergencies, UC Berkeley relies on response from Oakland Fire Department (OFD), Berkeley Fire Department (BFD), Moraga-Orinda Fire District, Alameda County Fire Department (ACFD), and/or California Department of Forestry and Fire Protection (CAL FIRE); depending on the area and severity of impact, and closest first responders available. The UC Berkeley Fire Prevention Division operates under UC Berkeley's Office of Environment, Health & Safety through a Memorandum of Understanding with the State Fire Marshal to provide inspections, plan review, and code consultation for UC Berkeley-owned and -occupied buildings. The Fire Prevention Division operates under the direction of the Campus Fire Marshal. In the event of a fire-related emergency, it is UC Berkeley's policy to notify the University of California Police Department (UCPD), which will contact the BFD. Fire-related response and mitigation efforts are coordinated primarily between the UCPD, BFD, and the Campus Fire Marshal.

UC Berkeley has its own police department, the UCPD. The department handles all patrol, investigation, crime prevention education, and related law enforcement duties for the UC Berkeley community, with services provided 24 hours per day, seven days a week. In addition, the UCPD operates with assistance from and in coordination with the Berkeley Police Department (BPD) through an operational agreement. This partnership includes interoperative radio capability, a joint police records computer system, training programs, special events coordination, and investigation of serious incidents. The UCPD also operates a Community Service Officer Program and a Security Patrol Officer Program that do not have arrest authority.

Public K–12 schools in the vicinity are part of the Berkeley Unified School District and Oakland Unified School District. The nearest school to the project site is the private East Bay School for Boys, approximately 0.2 miles southeast of the project site.

The UC Berkeley Library is a system consisting of 24 libraries throughout the campus, the collections of which comprise more than 13 million volumes. The nearest public library is the Central Library branch of the Berkeley Public Library, located 0.1 miles west of the project site.

DISCUSSION

a) *Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

   (i) fire protection

   (ii) (ii) police protection

   (iii) (iii) schools

   (iv) (iv) libraries, or

   (v) (v) other public facilities?

The BFD and UCPD would continue to support the project site. The proposed project would result in a temporary increase in population as spectators of women's beach volleyball attend events. The population increase would be minimal and would disperse after the conclusion of such events. The proposed project would increase UC Berkeley's or the surrounding area's population. The proposed project would not result in increased demand for fire or police protection services on the campus such that it would result in the need for new or physically altered fire or police protection facilities and the impact would be *less than significant.*

As the proposed project would serve the existing UC Berkeley student population and would not result in the generation of new students or employees, the project would not result in substantial school, park, library, or other public facilities impacts, as the project site would continue to support existing activities on campus. The proposed project would not result in increased demand for schools, libraries, or other public facilities and *no impact* would occur.

XVII. TRANSPORTATION

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	❒	❒	■	❒
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	❒	❒	■	❒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❒	❒	■	❒
d) Result in inadequate emergency access?	❒	❒	■	❒

EXISTING CONDITIONS

The project site is located on Oxford/Fulton Street on the north side of Bancroft Way along the southern edge of the UC Berkeley Campus Park and is currently occupied by a surface parking lot and associated landscaping. Primary vehicular access to the parking lot is provided through a driveway on Oxford/Fulton Street and a driveway on Bancroft Way.

The primary streets serving the project site are described below:

- **Bancroft Way** is a one-way westbound street in the site vicinity (east of Shattuck Avenue). Bancroft Way serves as the southern border to the Campus Park. In the project vicinity, Bancroft Way provides two general-purpose travel lanes with parallel on-street parking and sidewalks on both sides of the street. Bancroft Way is served by nine AC Transit bus routes with more than 20 buses per hour during the weekday peak periods, as well as UC Berkeley Bear Transit and Lawrence Berkeley National Laboratory shuttles. The City of Berkeley's approved Southside Complete Street Project, which started construction in December 2023, is reconfiguring the street to provide a concrete, curb-protected, two-way cycletrack along the south side of the street; one parallel parking lane; one general-purpose travel lane; and one bus-only lane along the north side of the street along the project site frontage.
- **Oxford Street/Fulton Street** is a north-south oriented street located west of the project site. Oxford/Fulton Street is a two-way, two-lane street north of Durant Avenue, with on-street parallel parking on both sides of the street. Driving north, the roadway becomes Oxford Street at the intersection of Fulton Street and Kittredge Street.
- **Kittredge Street** is an east-west street that extends west to Milvia Street from its intersection with Oxford/Fulton Street. Located just west of the project site, Kittredge Street is a two-way, two-lane street with on-street parallel parking on both sides of the street.

- **Allston Way** is an east-west oriented street that extends west of its intersection with Oxford Street. In the vicinity of the project site, Allston Way is a two-way, two-lane street with on-street parallel parking on both sides of the street.

There are no transit stops directly adjacent to the project site. Public transit service proximate to the project site includes Bay Area Rapid Transit (BART) and AC Transit. The nearest BART station to the project site is the Downtown Berkeley BART Station located at the corner of Shattuck Avenue and Allston Way, approximately 1,000 feet northwest of the project site. The nearest AC Transit stop to the project site is Shattuck Avenue/Kittredge Street stop, approximately 430 feet west of the project site. With both BART and AC Transit present, Shattuck Avenue in the area of the project site is a high-quality transit corridor.

The project site is well served by pedestrian and bicycle facilities. Both Oxford/Fulton Street and Bancroft Way have sidewalks on both sides of the street. Pedestrian crosswalks are provided at the intersections adjacent to the project site, including the intersections of Fulton Street and Bancroft Way; Oxford/Fulton Street and Kittredge Street; and Oxford Street and Allston Way. A class II bikeway (on-road bike lane) is provided on the Oxford/Fulton Street. The City of Berkeley is currently implementing the Southside Complete Street Project, which would reconfigure Bancroft Way to provide a curb-protected, two-way cycletrack (class IV) along the south side of Bancroft Way and a bus-only lane along the north side of the street. In the project area the class IV bikeway on the south side of Bancroft Way is complete.

DISCUSSION

As discussed in Chapter 1, *Introduction*, UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. UC Berkeley will not consider local plans, policies, and regulations in its evaluation of the environmental effects of the project unless UC Berkeley expressly decides to use a local plan, policy, or regulation as a threshold or standard of significance or if UC Berkeley determines that local plans, policies, or regulations provide important context for the assessment of environmental impacts.

a) Would the proposed project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Transit

The proposed project would not modify existing transit stops or routes or create new transit stops or routes. Spectators attending volleyball events at the project site could choose to utilize public transit for transportation to and from the event. However, these events already occur elsewhere on the UC Berkeley Campus. The project site is closer to a BART station than the Clark Kerr Sand Courts, where volleyball events currently happen. This could encourage more people to use public transit for transportation to volleyball events (see impact b., below). However, increased ridership would be consistent with BART's purpose and objectives. Ridership increases would be nominal and not require

the addition or expansion of BART stations. The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system as it relates to transit. Additionally, as part of the proposed project, the following UC Berkeley CBP pertaining to transportation (TRAN) would be implemented:

- **CBP TRAN-1:** UC Berkeley will implement bicycle, pedestrian, and transit access and circulation improvements as part of new building projects, major renovations, and landscape projects. Improvement will address the goal of increasing non-vehicular commuting and safety; improving access from adjacent campus or city streets and public transit; reducing multi-modal conflict; providing bicycle parking; and providing commuter amenities.

Roadways

The proposed project would not modify existing roadway travel lanes, such as the travel lanes on Oxford/Fulton Street and Bancroft Way. No new parking or internal vehicle circulation for the facility would be provided. Existing parking on the site would be demolished and would not be replaced by the proposed project. Because vehicles would not enter the project site, the existing curb cut at the existing parking entry on Fulton Street would be demolished and replaced with typical curb and gutter and sidewalk, as a driveway for parking would no longer be required after the proposed project is constructed. Removal of parking from the project site would result in fewer vehicles entering and exiting Oxford/Fulton Street from the existing driveway, potentially improving circulation on Oxford/Fulton Street. The proposed project would also include removal of existing curb to allow installation of a new curb cut at the proposed fire apparatus access area at the north end of the site. Restriping of two existing street parking stalls to allow for proposed fire apparatus access on the north side of the site would also occur as part of the proposed project. During volleyball events, some spectators may choose to drive to the event, increasing vehicle travel volumes on nearby roads. However, the nearby roads, such as Bancroft Way, are already used to access much of the UC Berkeley Campus, including the Clark Kerr Sand Courts area where the volleyball events currently happen. Accordingly, the proposed project would result in negligible changes to travel patterns on roadways. The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system as it relates to roadways.

Bicycle and Pedestrian

The proposed project would be accessible by existing bikeways on Oxford/Fulton Street and Bancroft Way, which connect to a much larger bikeway network through downtown Berkeley and the UC Berkeley campus. Similarly, the proposed project would be accessible by existing pedestrian sidewalks on Oxford/Fulton Street and Bancroft Way, which also connect to a much larger sidewalk network through downtown Berkeley and the UC Berkeley campus. The proposed project would require temporary closure of the sidewalk on Oxford/Fulton Street and Bancroft Way adjacent to the project site. The closure would be during construction, which would include reconstruction of these segments of sidewalk. The reconstructed sidewalk segments would be to City of Berkeley standards and requirements. Therefore, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system as it relates to bicycle and pedestrian facilities.

The proposed project would support or be consistent with UC policies that are indirectly related to transportation. The UC Sustainable Practices Policy lays out sustainability goals and strategies for all UC system campuses and medical centers. As a part of that goal, the UC Sustainable Practices Policy recognizes that single-occupant-vehicle commuting is a primary contributor to commute GHG emissions and sets goals for each campus to reduce the amount of driving generated. Given the proximity of the project site to the BART station compared to the existing Clark Kerr Sand Courts, more people may use transit to arrive at volleyball events than compared to existing conditions. This would reduce single-occupant-vehicle commuting, consistent with the UC Sustainable Practices Policy. Similar to the UC Sustainable Practices Policy, other regional and local policy documents, such as ABAG/MTC's Plan Bay Area 2050 and the City of Berkeley's General Plan, encourage the use of non-automobile transportation modes, such as transit, bicycling, and walking. The proposed project would not conflict with these policies, because spectators would be encouraged to use nearby rail transportation or walk or bike to the project site.

As described above, the proposed project would be consistent with the applicable programs, plans, ordinances, and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, the impact would be *less than significant.*

b) Would the proposed project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3 describes specific considerations for determining a project's impacts on transportation. Generally, CEQA Guidelines Section 15064.3 states that with limited exceptions, a project's effect on automobile delay does not constitute a significant environmental impact, and that VMT, defined as the total distances of automobile travel attributable to a project, is the most appropriate metric to assess transportation impacts. For the purposes of this section and consistent with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*,[64] which recommends using VMT as an efficiency metric (i.e., VMT per person), this analysis uses VMT per total campus population, which is defined as the total distances of automobile travel attributable to the campus divided by the total campus population which includes all students, faculty, and staff, as the metric to measure project impacts consistent with CEQA Guidelines Section 15064.3. The proposed project would not increase campus population because it does not include dormitories or other living spaces and also would not increase student capacity, such as providing new academic buildings. Therefore, this analysis examines the potential for the proposed project to increase VMT. If the proposed project were to result in an increase in VMT per existing campus population, the impact on VMT may be considered significant.

Construction of the proposed project would generate VMT in the form of workers driving to and from the project site each day and deliveries of building supplies and materials, for example. Project construction would be temporary. Therefore, the VMT associated with construction would also be

[64] Governor's Office of Planning and Research, California, *Technical Advisory on Evaluating Transportation Impacts in CEQA*. 2018, Sacramento, CA.

temporary and not contribute to long-term VMT growth on campus or the region. Construction impacts would be *less than significant*.

As discussed in Section 3.2, Project Operations/Programs, existing volleyball matches typically occur on Friday and Saturday afternoons and currently attract an average of approximately 50 to 75 participants and spectators. The time and participant and spectator attendance for would be similar to existing conditions at the existing softball field and existing sand courts after implementation of the proposed project with an average of approximately 100 participants and spectators. However, as shown in Table 3-2, up to a maximum of approximately 570 participants and spectators during some matches could be physically accommodated by the new beach volleyball complex, including spectators who would use the lawn area. While it is unclear whether the proposed courts would experience such attendance given past and current match attendance levels, this Initial Study considers this level of attendance to provide for a conservative analysis.

The proposed project does not include parking for spectators. The absence of vehicle parking would discourage people from driving to volleyball matches. Additionally, the spectators who do drive to matches would have likely driven to the matches at their existing locations, regardless of the implementation of the proposed project. The proposed project would shift the location of the matches to the far western edge of the UC Berkeley Campus, closer to major roadways in the area, such as Interstate 580, San Pablo Avenue, Shattuck Avenue, and University Avenue. This would likely reduce the overall distance spectators drive to attend matches by several miles, depending on the direction the spectators arrive from. Additionally, compared to existing match locations, the project site is more proximate to public transit, making it more appealing to use buses or BART to attend matches. Using public transit greatly reduces or eliminates VMT.

The *Technical Advisory on Evaluating Transportation Impacts in CEQA* states that certain types of projects within 0.5 mile of high-quality transit stops, such as the BART station at the corner of Shattuck Avenue and Allston Way, can be assumed to have less than significant impacts related to VMT. The types of projects for which this assumption applies include residential, retail, and office projects, or a mix of these projects. Sports and athletics projects are not described. However, given that the project includes no vehicle parking, is approximately 1,000 feet from high-quality transit, and would redistribute trips rather than create new trips, VMT impacts resulting from operation of the project would be *less than significant*.

c) Would the proposed project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The proposed project would not modify existing travel lanes or intersections. The proposed project would eliminate an existing driveway on Oxford/Fulton Street and also existing parking on the project site. This would result in eliminating vehicles from entering and exiting the project site from Oxford/Fulton Street, potentially reducing transportation hazards. A new driveway would be constructed on Oxford Street. However, this driveway would be gated and used only for emergency vehicles and special equipment for maintenance and volleyball games, such as TV network vans for televised coverage of games. The proposed driveway would be along a straight segment of Oxford Street, maximizing sight

distance for exiting the driveway onto the roadway. Given how infrequently vehicles would use the proposed driveway and the sight distance that would be provided on Oxford Street, there would be no hazardous geometric design features. The proposed project would not require farm equipment of other unique or unusual vehicles to travel on roadways. Therefore, the proposed project would not substantially increase hazards due to a geometric design feature or incompatible uses. Impacts would be *less than significant*.

d) Would the proposed project result in inadequate emergency access?

As discussed in checklist question "c)" above, emergency vehicles would be able to access the project site using a new driveway that would be constructed on Oxford Street, at the north end of the project site. Additionally, the project site is adjacent to Oxford/Fulton Street and Bancroft Way, either of which could also be used by emergency vehicles. Therefore, emergency access would be adequate, and the impact would be *less than significant.*

XVIII. TRIBAL CULTURAL RESOURCES

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe?	❒	■	❒	❒

EXISTING CONDITIONS

The San Francisco Bay region has been occupied by humans for at least 12,000 years. Prior to European arrival in the 18th century, the project site was situated within territory occupied by the Ohlone people, specifically the Huchiun Ohlone who spoke the Chochenyo Ohlone dialect. The Ohlone culture may have come from the fusion of Hokan and Utian cultures; the proto-Utian migration, one of three estimated major migrations of the Penutian-speaking peoples, entered California from the Great Basin and settled the Sacramento/San Joaquin Basin, likely coming in contact with existing Hokan populations after spreading further west after 2,000 BCE.[65, 66]

The Ohlone were semisedentary collectors and hunters of fish and game, although they probably ate primarily plant foods. Resources utilized included vegetal resources for creating nets, cords, and baskets; animal remains and shells for various tools and ornamentation; pelts and feathers for clothing and bedding; and local rock and mineral resources for tools and trading. Shellmounds were often used as

[65] Moratto, Michael J., 1984, California Archaeology. Academic Press, Inc., Orlando. Morris Adjmi Architects.

[66] Hattori, Eugene M., 1982, The Archaeology of Falcon Hill, Winnemucca Lake, Washoe County, Nevada, Washington State University.

major village centers by the Ohlone; however, the earliest shellmound components date to approximately 2,000 years before the arrival of the Ohlone, and the identity of the earliest inhabitants remains unclear.

The family household was the basic social unit, made up of around 15 individuals, and multiple families made up clans. Tribelets, or groups of interrelated villages under political leadership of a single headman, consisted of around 200 people and served as autonomous political units. Surviving descendants of the Ohlone remain an important part of the social fabric of the San Francisco Bay region today.

Rincon contacted the Native American Heritage Commission (NAHC) on June 13, 2024, to request a search of the Sacred Lands File (SLF), as well as a contact list of Native Americans culturally affiliated with the project site vicinity. On July 12, the NAHC responded to Rincon's Native American contact list and SLF request stating that the results of the SLF search were positive (Appendix – Cultural Resources Assessment). Pursuant to the Native American Historic Resource Protection Act, commonly known by its legislative bill number Assembly Bill 52, UC Berkeley sent letters to representatives for the following Native American Tribes for notification of consultation opportunity for the proposed project:

- Amah Mutsun Tribal Band
- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Costanoan Rumsen Carmel Tribe
- Guidiville Rancheria of California
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the SF Bay Area
- North Valley Yokuts Tribe
- The Confederated Villages of Lisjan Nation
- The Ohlone Indian Tribe
- Wilton Rancheria
- Wuksachi Indian Tribe/Eshom Valley Band

The Mukwema Ohlone Indian Tribe of the SF Bay Area and the Confederated Villages of Lisjan Nation requested consultation. As a result of the tribal consultation process, UC Berkeley was not notified of any TCRs on the project site.

DISCUSSION

a) *Would the proposed project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe?

A tribal cultural resource (TCR) is defined as a site, feature, place, cultural landscape that is geographically defined in terms of size and scope, sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register or included in a local register of historical resources, or if UC Berkeley, acting as the lead agency, supported by substantial evidence, chooses at its discretion to treat the resource as a TCR.[67]

Potential Impacts to Unknown Subsurface TCRs

The project site is not listed or eligible for listing the National Register, California Register, or local register of historical resources and does not contain any known TCRs. The site does contain ticket booths associated with historic Edwards Stadium, but Edwards Stadium is not associated with a TCR or tribal resources (see Section V, *Cultural Resources*). Nonetheless, ground-disturbance during construction of the proposed project could impact unknown subsurface TCRs, including Native American artifacts and human remains. UC Berkeley would implement CBP CUL-1, which would ensure impacts to TCRs that involve human remains would be less than significant. However, without mitigation the impact to other types of unknown subsurface TCRs has the potential to be *significant*. Therefore, implementation of Mitigation Measure TCR-1 is required.

Impact TCR-1: Ground-disturbing activities could encounter and cause a substantial adverse change to unknown subsurface tribal cultural resources.

Mitigation Measure TCR-1: Implement Mitigation Measure CUL-2.

Significance with Mitigation: Implementation of Mitigation Measure CUL-2 would ensure that ground disturbance activities are monitored and are undertaken by trained construction crews.

[67] PRC Sections 21074(a)(1) and (2).

Further, Mitigation Measure CUL-2 would require proper procedures to be followed in the event that subsurface TCRs are encountered during construction. Therefore, with implementation of Mitigation Measure TCR-1, impacts would be *less than significant*.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	❒	❒	■	❒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	❒	❒	■	❒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❒	❒	■	❒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	❒	❒	■	❒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	❒	❒	■	❒

EXISTING CONDITIONS

The East Bay Municipal Utility District has a 332-square-mile area including the project site and uses surface water, primarily from the Mokelumne River to supply water. It has water rights that allow for delivery of up to a maximum of 125 million gallons per day (MGD) and, in 2020, including water conservation and recycling, there was a demand for 181 MGD, projected to increase to 218 MGD in 2050.[68] The project site is also serviced by EMBUD's wastewater service district, known as Special District No. 1, that collects and treats the water. Wastewater is treated at the Main Wastewater Treatment Plant in Oakland. The plant is designed to provide primary treatment for a flow of up to 320 MGD and secondary treatment for a maximum flow of 168 MGD.[69]

[68] East Bay Municipal Utility District, June 2021, *Urban Water Management Plan 2020*, https://www.ebmud.com/download_file/force/9151/735?UWMP-2020-FINAL-bookmarks.pdf, accessed May 24,2024.

[69] East Bay Municipal Utility District, March 2022, *Sewer System Management Plan*, https://www.ebmud.com/application/files/7216/7666/0153/East_Bay_Sewer_System_Management_Plan.pdf, accessed October 29,2024.

UC Berkeley also operates and maintains its own sanitary sewer collection system using a gravity flow system and lift stations. Additionally, UC Berkeley pays the City of Berkeley an annual wastewater collection fee for discharge of wastewater from the university's sewer system to the City's system.

UC Berkeley provides its own solid waste collection and recycling services to the project site through Cal Zero Waste. Cal Zero Waste manages over 25 tons of solid waste that are generated throughout the campus daily.[70]

DISCUSSION

a) Would the proposed project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The proposed project would not lead to a population increase or change in usage that would require new or expanded utilities. As discussed in Section 3.2, Utilities, the proposed project would connect to existing domestic water, fire water, and reclaimed water pipelines. As discussed under criterion (a) in Section VI, Energy, electricity to the proposed project would initially be provided by the campus cogeneration plant, but will be designed to be integrated with the Berkeley Clean Energy Campus. Once it is fully operational, the electricity consumed by the proposed project would be sourced from 100-percent carbon-free sources. Wastewater generated by use of the proposed project would be conveyed to an existing public sewer main in Bancroft Way via a new high-density polyethylene pipe. Sanitary sewer improvements on-site would be per UC Berkeley design standards 2020 Section 33.30.00 for sanitary sewerage utilities. Improvements made in the public right-of-way would be City of Berkeley or governing agency standards.

As discussed under criterion (a) in Section X, Hydrology and Water Quality, the proposed project would result in a decrease in impervious surfaces compared to existing conditions. The proposed project would include a new infiltration trench that would hold and treat stormwater before it is released into a new perforated pipe connected to the City of Berkeley's off-site storm drain infrastructure in Fulton Street and Bancroft Way. The infiltration trench and the increase in on-site pervious surface would decrease peak-flow rates, thus reducing the rate of stormwater runoff entering the storm drain system. In addition, UC Berkeley manages runoff into storm drain systems such that the aggregate effect of new projects is no net increase in runoff over existing conditions. Adherence to regulatory requirements and compliance with UC Berkeley's CBPs would minimize the amount of stormwater runoff from the proposed project. Additionally, as part of the proposed project, the following UC Berkeley CBPs

[70] University of California Berkeley, December 2023, Cal Zero Waste, https://facilities.berkeley.edu/operating-units/campus-operations/cal-zero-waste, accessed May 24, 2024.

pertaining to utilities and service system (USS) and hydrology and water quality (HYD) would be implemented:

- **CBP USS-1:** For development that increases water demand, UC Berkeley will continue to evaluate the size of existing distribution lines as well as pressure of the specific feed affected by development on a project-by-project basis, and necessary improvements will be incorporated into the scope of work for each project to maintain current service and performance levels. The design of the water distribution system, including fire flow, for new buildings will be coordinated among UC Berkeley, the East Bay Municipal Utility District, and the City of Berkeley Public Works Department and Fire Department.
- **CBP USS-3:** UC Berkeley will continue to incorporate specific water conservation measures into project design to reduce water consumption and wastewater generation. This could include the use of special air-flow aerators, water-saving shower heads, flush cycle reducers, low-volume toilets, weather-based or evapotranspiration irrigation controllers, drip irrigation systems, and the use of drought resistant plantings in landscaped areas, and collaboration with the East Bay Municipal Utility District to explore suitable uses of recycled water.
- **CBP USS-4:** UC Berkeley will analyze water and sewer systems on a project-by-project basis to determine specific capacity considerations for both UC Berkeley systems and off-site municipal systems in the planning of any project proposed under the LRDP.
- **CBP HYD-13:** UC Berkeley will continue to manage runoff into storm drain systems such that the aggregate effect of projects implemented pursuant to the LRDP creates no net increase in runoff over existing conditions.

Adherence to these CBPs would promote water conservation and water-efficient landscaping and ensure the amount of runoff from the proposed project would be less than existing conditions. Thus, the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electricity, natural gas, or telecommunications facilities, and impacts would be *less than significant*.

b) Would the proposed project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

The proposed project would include landscaping that prioritizes use of native and/or adaptive drought-resistant plant materials. Water demand from the proposed project would be minimal and generally limited to the use of the team building. A new fire hydrant would be installed along Bancroft Way in the southeastern corner of the project site that would connect to existing university infrastructure. Because the proposed project would result in a nominal amount water demand as part of UC Berkeley, the proposed project would have sufficient water supplies available and impacts would be *less than significant*.

c) Would the proposed project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The proposed project would include the construction of restrooms with toilets and sinks, and drinking water fountains would be provided throughout the project site. Wastewater generated from these fixtures would be directed to an existing public sewer main in Bancroft Way via a new high density polyethylene pipe that would constructed in compliance with UC Berkeley design standards 2020 Section 33.30.00. Given the proposed project's intermittent use, it would not generate wastewater exceeding the capacity of the East Bay Municipal Utility District. The East Bay Municipal Utility District would have available capacity and services to accommodate the proposed project. Additionally, UC Berkeley would implement the following CBP related to sewer services as applicable:

- **CBP USS-5:** Payments to service providers to help fund wastewater treatment or collection facilities will conform to Section 54999 of the California Government Code, including but not limited to, the following provisions:
  - Fees will be limited to the cost of capital construction or expansion.
  - Fees will be imposed only after an agreement has been negotiated by UC Berkeley and the service provider.
  - The service provider must demonstrate the fee is nondiscriminatory: i.e. the fee must not exceed an amount determined on the basis of the same objective criteria and methodology applied to comparable nonpublic users, and must not exceed the proportionate share of the cost of those facilities.
  - The service provider must demonstrate that the amount of the fee does not exceed the amount necessary to provide capital facilities for which the fee is charged.

Therefore, with implementation of CBPs, the proposed project would have a *less than significant impact*.

d) Would the proposed project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

The proposed project would be serviced by Cal Zero Waste, UC Berkeley's solid waste collection, and would be taken to the proper disposal destination, likely Keller Canyon Landfill. The proposed project would not increase overall population on campus and would produce a nominal amount of solid waste during practice and matches held at the project site. While average attendance fluctuates by season and team success, a modest increase in average attendance, maximum participants and spectators, and number of events could result in a modest increase in solid waste generation over existing conditions. However, the amount of solid waste that would be generated by the proposed project would constitute a negligible portion of the remaining available capacity of the Keller Canyon Landfill. Furthermore, as part of the proposed project, the following utilities and service system CBPs would be implemented:

- **CBP USS-6:** UC Berkeley will continue to implement the Zero Waste requirements of the UC Sustainability Policy designed to reduce the total quantity of campus solid waste that is disposed of in landfills.
- **CBP USS-7:** In accordance with the CalGreen Code, and as required for Leadership in Energy and Environmental Design certification, contractors working for UC Berkeley will be required under their contracts to report their solid waste diversion according to UC Berkeley's waste management reporting requirements.

CBP USS-6 and CBP USS-7 would promote waste reduction and ensure adherence to applicable solid waste requirements. The solid waste generated by the proposed project would not be in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals, and impacts would be *less than significant*.

e) Would the proposed project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The proposed project would comply with the CALGreen Building Code Standards, which require that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. The Project would also comply with UC Berkeley's waste reduction strategies and CBP USS-6 and CBP USS-7. Therefore, the proposed project would comply with applicable federal, State, and local solid waste regulations, and impacts would be *less than significant*.

XX. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Proposed Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	❒	❒	■	❒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	❒	❒	■	❒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	❒	❒	■	❒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	❒	❒	■	❒

EXISTING CONDITIONS

The project site's location in the San Francisco Bay area is prone to strong, hot, dry offshore winds that can become dangerous by enabling wildfires during drier months of the year. The project site is not located in a State Responsibility Area (SRA), or lands classified as Very High Fire Hazard Severity Zone (VHFHSZ).[71] The nearest VHFHSZ begins approximately 1.5-miles northeast of the project site. The project site is also not identified as being within a VHFHSZ within a local responsibility area.[72]

DISCUSSION

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project substantially impair an adopted emergency response plan or emergency evacuation plan?

As discussed under criterion (f) in Section IX, Hazards and Hazardous Materials, the proposed project would be required to comply with the provisions of the CFC and the CBC. During construction, the

[71] California Department of Forestry and Fire Protection, 2024, FHSZ Viewer, https://egis.fire.ca.gov/FHSZ/, accessed May 24, 2024.

[72] As shown on Figure 5.18-1, *Fire Hazard Severity Zones,* of the 2021 LRDP Update EIR.

proposed project would be required to comply with all applicable provisions of the CFC to ensure fire safety during the construction phase. Additionally, the proposed project would be required to comply with applicable federal and State regulations related to roadway and transportation facility design. The proposed project would not conflict with or block fire access routes. Temporary closures of fire access routes during construction would be coordinated with the City of Berkeley Fire Department, if necessary. Emergency responders would continue to maintain response plans that include use of alternate routes, sirens, emergency vehicle preemption at traffic signals, and other methods to bypass congestion and minimize response times.

The proposed project would not interfere with the operation of UC Berkeley's OEM and would not interfere with operations of emergency response agencies or with coordination and cooperation between such agencies. The proposed project would not result in substantial changes to the circulation patterns or emergency access routes and would not block or otherwise interfere with the use of evacuation routes. Therefore, impacts to emergency response planning would be *less than significant*.

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

As mentioned in Section VII, Geology and Soils, the project site is gently sloping but with no significant topography, and there are no steep slopes that can exacerbate wildfire risk in the immediately surrounding area. Implementation of the proposed project would not change or affect prevailing strong, hot, dry, offshore winds that the project area is prone to, but wildfires and fire-related air pollution hazards that originate at the project site could be spread by prevailing winds. The Alameda and Contra Costa CWPPs, the Berkeley LHMP, and UC Berkeley's Emergency Preparedness Program, EOP, and Wildland Vegetative Fuel Management Plan are intended to reduce and respond to wildfire hazards on a regional scale. In addition, BAAQMD provides air quality alerts, advisories, and forecasts and maintains an interactive online map to view current air quality conditions in the region. Existing regulatory requirements and policies that reduce wildfire risks overall would minimize the exposure of people to air pollutants from wildfires due to prevailing winds. Other factors, such as vegetation, have the potential to exacerbate wildfire risks. As part of the proposed project, the following UC Berkeley CBPs pertaining to wildfire (WF) would be implemented:

- **CBP WF-1:** UC Berkeley will continue to comply with the California Public Resources Code Section 4291, which mandates firebreaks of 100 feet around buildings or structures in, upon, or adjoining any mountainous, forested, or brush- or grass-covered lands.
- **CBP WF-2:** UC Berkeley will conduct vegetation management under its approved Wildland Vegetative Fuel Management Plan.
- **CBP WF-3:** UC Berkeley will continue to plan and implement programs to reduce risk of wildland fires, including plan review and construction inspection programs that ensure that its projects incorporate fire prevention measures.

- **CBP WF-4:** UC Berkeley will continue to plan and collaborate with other agencies through participation in the Hills Emergency Forum.

Compliance with CBP WF-1 through CBP WF-4 would ensure that vegetation is properly managed for wildfire hazard reduction. The proposed project would be required to submit grading plans and construction drawings for UC Berkeley review. Compliance with the CBC, CFC, and applicable sections of the PRC would ensure that the proposed project would be evaluated and designed to incorporate best practices to reduce wildfire-related hazards and avoid exacerbating wildfire risks, resulting in *less-than-significant* impacts.

c) *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*

As part of the proposed project, a new fire hydrant would be installed along Bancroft Way at the southwest corner of the project site in accordance with the Campus Fire Marshal. As discussed in Section XIX, Utilities and Service Systems, the project site is currently served by existing utility systems and the proposed project would not result in the need for expanded utility infrastructure. Due to the location of the project site outside of a VHFHSZ, the installation of on-site utilities would not exacerbate fire risks and impacts would be *less than significant*.

d) *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

As discussed in Section VII, Geology and Soils, the project site is an area with low susceptibility for landslides. As described in Section X, Hydrology and Water Quality, the project site is not within a FEMA-designated 100-year flood zone. In addition, the proposed project would be required to comply with applicable regulations to manage runoff, as detailed in Section X. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, postfire slope instability, or drainage changes, and impacts would be *less than significant*.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	❒	■	❒	❒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	❒	❒	■	❒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	❒	■	❒	❒

DISCUSSION

a) Does the proposed project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

The project site is an existing surface parking lot in an area developed extensively with urban uses. The surrounding area is built out with industrial, mixed-use, and commercial uses. As discussed in Section IV, Biological Resources, due to a lack of habitat on the site, the project does not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. Implementation of CBPs BIO-1 and BIO-2 would ensure that substantial impacts to biological resources more broadly would not occur.

The project does not have the potential to eliminate important examples of the major periods of California history or prehistory, as discussed in Section V, Cultural Resources. Implementation of Mitigation Measure CUL-1 and Mitigation Measure NOI-2 would prevent significant impacts to historic Edwards Stadium. Implementation of LRDP 2021 EIR Mitigation Measure CUL-2 and CBP CUL-1 would

further ensure that substantial impacts to cultural resources more broadly would not occur through requiring monitoring during grading.

Impacts related to reduction of habitat, wildlife populations and plant or animal communities, rare or endangered plants or animals, and important examples of the major periods of California history or prehistory would be *less than significant with mitigation incorporated.*

b) Does the proposed project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

As described in the project description and throughout the environmental checklist, the proposed project would consist of a beach volleyball facility that would be a new location for activities generally occurring on other UC Berkeley properties currently, and would not increase the population or substantially increase the overall intensity of use in the project area or the UC Berkeley campus as a whole. Therefore, the proposed project would generally not contribute to cumulative impacts related to population or UC Berkeley activities. This cumulative analysis considers development and operation of the proposed project together with other development anticipated by the 2021 LRDP, as well as non-university development projects immediately surrounding the project site. The nearest cumulative development projects undertaken by the university are the Clean Energy Campus project, which is currently in the planning stage and would be located to the northeast of the project site, and the 220 Bancroft student housing project directly across Bancroft Way to the south of the project site. Construction of the proposed project is expected to be completed prior to that of both of these projects. Off-site cumulative development projects include several residential and mixed-use projects in downtown Berkeley. While precise construction schedules are not known, construction of one or more of these projects may overlap with construction of the proposed project, which would have the potential to create a cumulative noise impact and cumulative construction traffic impacts.

Cumulative noise impacts would only occur if other projects were being constructed in the vicinity of the proposed project at the same time as the proposed project. Due to the distribution characteristics of sound and vibration, construction noise and vibration are generally limited to the vicinity of individual project sites. Noise and vibration associated with project construction would be intermittent and temporary, and would fluctuate depending on the phase of construction. Mitigation Measures NOI-1 and NOI-2 would minimize noise and vibration from construction of the proposed project to acceptable levels. Additionally, non-university cumulative projects would be subject to and required to comply with applicable City noise standards, and UC Berkeley projects would also be subject to UC Berkeley policies and CBPs to ensure that projects are designed to minimize noise impacts. For these reasons, the project, in combination with the cumulative projects, would not result in a substantial incremental effect that would result in a significant cumulative impact related to construction noise.

Based on the conditions and location of the project site and surroundings and the nature of the proposed project, as discussed throughout the environmental checklist, no significant cumulative impacts to which the project would make a cumulatively considerable contribution would occur related

to aesthetics, agriculture and forestry resources, biological and cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services. recreation, transportation, Tribal cultural resources, utilities and service systems, or wildfire. As discussed in Environmental Checklist Section III, Air Quality, the proposed project would not generate emissions of air pollutants which exceed the BAAQMD significance thresholds, which are intended to assess whether a project's contribution to existing cumulative air quality impacts is considerable. The proposed project would not result in impacts that are individually limited, but cumulatively considerable, and this impact would be *less than significant*.

c) Does the proposed project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, impacts to human beings are associated with such issues as air quality, hazards and hazardous materials, noise, and wildfire impacts. As detailed in the environmental checklist, the proposed project would not result, either directly or indirectly, in substantial adverse effects related to air quality, hazardous materials, and noise with implementation of mitigation measures and CBPs. Therefore, impacts to human beings would be *less than significant with mitigation incorporated.*

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5. *Mitigation Monitoring and Reporting Program*

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the proposed project. The purpose of the MMRP is to ensure the implementation of project-specific mitigation measures identified as part of the environmental review for the proposed project. The MMRP (Table 5-1, *Mitigation Monitoring and Reporting Program*) includes the following information:

- The full text of the mitigation measures;
- The party responsible for implementing the mitigation measures;
- The timing for implementation of the mitigation measure;
- The agency responsible for monitoring the implementation; and
- The monitoring action and frequency.

UC Berkeley must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

Table 5-2 includes the Continuing Best Practices that would be implemented for the project.

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 5-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
CULTURAL RESOURCES					
Mitigation Measure CUL-1: Prior to the initiation of any site or building demolition of construction activities, a moving/structural engineering company with demonstrated experience in the relocation of historic buildings shall be contracted for the work. The relocation shall be planned in accordance with provisions in the California Historic Building Code. When preparing the relocation plan, the moving/structural engineering company shall consult with a qualified preservation architect who meets the Secretary of the Interior's Professional Qualifications Standards to confirm their proposed relocation plan and that the proposed methods for relocation are consistent with professional best practices. Bracing and securing the buildings for the move shall be undertaken in a manner that will avoid any damage to their historic materials. In case of inadvertent damage from the move, the buildings should be documented using photogrammetry, lidar, or other similar technology that will provide measured drawings prior to the move to inform repair work, if needed. The Campus Architect shall review and approve the relocation plan prior to the initiation of site or building demolition of construction activities and after construction shall verify that the relocation was completed in compliance with the approved relocation plan.	Project construction crew or company with experience relocating historic structures and qualified architectural historian	Prior to any site or building demolition or construction activities	Campus Architect and Project Manager, Capital Projects, and Office of Physical and Environmental Planning	Review and approve relocation plan and confirm compliance	During regular site inspections and final monitoring upon completion of construction
Mitigation Measure CUL-2: UC Berkeley shall implement the following steps to ensure impacts to archaeological and tribal cultural resources will be less than significant during ground-disturbing activities. ▪ Prior to soil disturbance, UC Berkeley shall confirm that contractors have been notified of the procedures for the identification of federal- or State-eligible cultural resources, and that the construction crews are aware of	Project construction crews and qualified archaeologist	Prior to ground disturbance	Project Manager, Capital Projects, and Office of Physical and Environmental Planning	Confirm compliance	During regular site inspections

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency

the potential for previously undiscovered archaeological resources or tribal cultural resources on-site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.
▪ If a resource is discovered during construction (whether or not an archaeologist is present), the following measures shall be implemented:
  ▪ All soil-disturbing work within 35 feet of the find shall cease.
  ▪ UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site in the project area to determine whether the resource is significant and would be affected by the project.
  ▪ Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist.
  ▪ If the resource is a tribal cultural resource, the consulting archaeologist, approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission, shall consult with the appropriate tribe to evaluate the significance of the resource and to recommend appropriate and feasible avoidance, testing, preservation or mitigation measures, in light of factors such as the significance of the find, proposed project design, costs, and other considerations.
  ▪ If avoidance is infeasible, other appropriate					

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
measures (e.g., data recovery) may be implemented. ▪ If the resource is a non-tribal resource determined significant under CEQA, a qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant. ▪ The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources if appropriate. ▪ The report shall be submitted to the City of Berkeley, California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required, and the applicable Native American tribes, if requested. ▪ Ground- Ground-disturbing activities shall be monitored from the outset. Tribal monitoring shall occur for soil removal, parcel grading, new utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. Based on project-specific daily construction schedules, field conditions, and archaeological observations, full-time monitoring may not be warranted following initial observations.					
GREENHOUSE GAS EMISSIONS					
Mitigation Measure GHG-1: UC Berkeley shall offset net new GHG emissions for the proposed project. UC Berkeley shall purchase GHG carbon offsets of no less than 48 metric tons of carbon dioxide equivalent (MT CO2e) per year until the campus's new Berkeley Clean Energy Campus is fully	Office of Sustainability & Carbon Solutions	According to timeline specified in mitigation measure	Office of Environment, Health, & Safety	Confirm offsets and perform reporting requirements specified in mitigation measure	Annually

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
operational and the proposed project is verified as utilizing that system for electricity. UC Berkeley shall purchase GHG carbon offsets from a voluntary GHG carbon offset provider with an established protocol that requires projects generating GHG carbon offsets to demonstrate that the reduction of GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional (per the definition in California Health and Safety Code Sections 38562(d)(1) and (2)). UC Berkeley may purchase GHG carbon offsets from UC developed voluntary carbon offset projects that are real, permanent, quantifiable, peer verifiable, enforceable, and additional. Definitions for these terms follow. a. **Real**: Estimated GHG reductions should not be an artifact of incomplete or inaccurate emissions accounting. Methods for quantifying emission reductions should be conservative to avoid overstating a project's effects. The effects of a project on GHG emissions must be comprehensively accounted for, including unintended effects (often referred to as "leakage"). (To ensure that GHG reductions are real, the California Air Resources Board (CARB) requires the reduction be a direct reduction in a confined project boundary.) b. **Additional**: GHG reductions must be additional to any that would have occurred in the absence of the Climate Action Reserve, or of a market for GHG reductions generally. "Business as usual" reductions (i.e., those that would occur in the absence of a GHG reduction market) should not be eligible for registration. c. **Permanent**: To function as offsets to GHG emissions, GHG reductions must effectively be "permanent." This means, in general, that any net reversal in GHG reductions used to offset emissions must be fully accounted for and compensated through the achievement of additional reductions.					

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
d. **Quantifiable**: The ability to accurately measure and calculate GHG reductions or GHG removal enhancements relative to a project baseline in a reliable and replicable manner for all GHG emission sources, GHG sinks, or GHG reservoirs included within the offset project boundary, while accounting for uncertainty and activity-shifting leakage and market-shifting leakage. e. **Verified**: GHG reductions must result from activities that have been verified. Verification requires third party review of monitoring data for a project to ensure the data are complete and accurate. If a voluntary carbon offset project is developed by the UC, the monitoring data shall be peer reviewed by a qualified third party to ensure the data are complete and accurate. f. **Enforceable**: The emission reductions from offset must be backed by a legal instrument or contract that defines exclusive ownership and can be enforced within the legal system in the country in which the offset project occurs or through other compulsory means. Note that for this mitigation measure, only credits originating within the United States are allowed. *Mitigation Reporting.* GHG reductions achieved by the purchase of carbon offsets shall be incorporated into UC Berkeley's annual GHG inventory and annual reporting practices established by the UC Sustainable Practices Policy. Carbon offsets for the purpose of offsetting net new emissions generated by the proposed project shall be purchased by UC Berkeley until the cogeneration plant is replaced by the new Berkeley Clean Energy Campus and the proposed project is confirmed to source 100 percent of its electricity demand from the Berkeley Clean Energy Campus.					
NOISE					
Mitigation Measure NOI-1: In order to reduce noise levels	Project construction	Prior to issuance of	Capital Projects and	Inspect barriers and	Once

Mitigation Measure	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
generated during construction of the proposed project to below the City's required threshold, the following construction noise measures shall be implemented. ▪ Prior to the initiation of construction activities at the project site, temporary noise barriers/blankets shall be installed by the project construction contractor along the western and northern boundaries of the project site to shield nearby sensitive receptors from construction noise. The temporary barriers/blankets shall have a minimum height of 15 feet and be constructed with a solid material that has a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier. ▪ Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer.	contractor U.C. Berkeley	demolition, grading, and/or building permits	Office of Environment, Health & Safety	construction equipment	
Mitigation Measure NOI-2: Project construction activities that occur within 12 feet of Edwards Stadium and involve earthmoving (i.e., grading, excavation, etc.), shall be conducted with equipment that is limited to 100 horsepower or less. This construction requirement shall be included on the final construction plans for the proposed project.	Project construction contractor	Prior to ground disturbance	Capital Projects	Verify final plans and on-site equipment use	Once
TRIBAL CULTURAL RESOURCES					
Mitigation Measure TCR-1: Implement Mitigation Measure CUL-2.	*See Mitigation Measure CUL-2 in the Cultural Resources section above.*				

TABLE 5-2 CONTINUING BEST PRACTICES IMPLEMENTATION AND MONITORING

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Aesthetics (AES)					
CBP AES-1: New projects will as a general rule conform to	Capital Projects and	Prior to final design	Project Manager,	Review project	Ongoing during

MITIGATION MONITORING AND REPORTING PROGRAM

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
the Physical Design Framework. While the guidelines in the Physical Design Framework would not preclude alternate design concepts when such concepts present the best solution for a particular site, UC Berkeley will not depart from the Physical Design Framework except for solutions of extraordinary quality.	future project architects	approval	Capital Projects	proposals for conformance to Physical Design Framework	project development and review
CBP AES-2: Major new campus projects will continue to be reviewed at each stage of design by the UC Berkeley Design Review Committee. The provisions of the LRDP, as well as project-specific design guidelines prepared for each such project, will guide these reviews.	UC Berkeley Design Review Committee	During project design	Campus Architect	Review major new campus projects	At least once during each stage of design
CBP AES-6: Lighting for new development projects will be designed to include shields and cut-offs that minimize light spillage onto unintended surfaces and minimize atmospheric light pollution. The only exception to this principle will be in those areas where such features would be incompatible with the visual and/or historic character of the area.	Capital Projects and future project architects	Prior to CEQA review or, for projects that do not require CEQA review, prior to final design approval	Campus Architect	Review lighting plans and specifications	Once
CBP AES-7: As part of UC Berkeley's design review procedures, light and glare will be given specific consideration and measures will be incorporated into the project design to minimize both. In general, exterior surfaces will not be reflective; architectural screens and shading devices are preferable to reflective glass.	UC Berkeley Design Review Committee	During design review	Campus Architect	Confirm incorporation of measures to minimize light and glare	Once
Air Quality (AQ)					
CBP AIR-2: UC Berkeley will continue to comply with the current Bay Area Air Quality Management District basic control measures for fugitive dust control. The requirement to comply with the basic control measures will be identified in construction bids. The Bay Area Air Quality Management District's current basic control measures include: • Water all active construction areas at least twice daily, or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust	Future project contractors	During construction	Director of Campus Building Department	Confirm incorporation of measures in construction bids	Once

MITIGATION MONITORING AND REPORTING PROGRAM

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water will be used whenever possible. • Pave, apply water twice daily or as often as necessary to control dust, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). • Sweep daily (with water sweepers using reclaimed water if possible) or as often as needed all paved access roads, parking areas and staging areas at the construction site to control dust. • Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. • Hydroseed or apply nontoxic soil stabilizers to inactive construction areas. • Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.). • Limit vehicle traffic speeds on unpaved roads to 15 miles per hour. • Replant vegetation in disturbed areas as quickly as possible.					
CBP AIR-3: UC Berkeley will continue to implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust: • Equipment will be properly serviced and maintained in accordance with the manufacturer's recommendations.	Future project contractors	During construction	Director of Campus Building Department and Office of Environment, Health & Safety	Confirm compliance through documentation review and during site inspections	During regular site inspections

MITIGATION MONITORING AND REPORTING PROGRAM

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
• Construction contractors will also ensure that all nonessential idling of construction equipment is restricted to five minutes or less, in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.					
Biological Resources (BIO)					
CBP BIO-1: Avoid disturbance or removal of bird nests protected under the federal Migratory Bird Treaty Act and California Department of Fish and Game Code when in active use. This will be accomplished by taking the following steps. • If tree removal and initial construction is proposed during the nesting season (February 1 to August 31), a focused survey for nesting raptors and other migratory birds will be conducted by a qualified biologist within 14 days prior to the onset of tree and vegetation removal in order to identify any active nests on the site and surrounding area within up to 500 feet of proposed construction, with the distance to be determined by a qualified biologist based on project location. The site will be resurveyed to confirm that no new nests have been established if vegetation removal and demolition has not been completed or if construction has been delayed or stopped for more than seven consecutive days during the nesting season. • If no active nests are identified during the construction survey period, or development is initiated during the non-breeding season (September 1 to January 31), tree and vegetation removal and building construction may proceed with no restrictions. • If bird nests are found, an adequate setback will be established around the nest location and vegetation removal, building demolition, and other construction activities shall be restricted within this no-disturbance	Consulting biologist	Prior to vegetation removal, demolition, and/or construction	Office of Physical & Environmental Planning	Review and approve report of findings	Once

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
zone until the qualified biologist has confirmed that birds have either not begun egg-laying and incubation, or that the juveniles from those nests are foraging independently and capable of survival outside the nest location. Required setback distances for the no-disturbance zone will be based on input received from the California Department of Fish and Wildlife and may vary depending on species and sensitivity to disturbance. As necessary, the no-disturbance zone will be fenced with temporary orange construction fencing if construction is to be initiated on the remainder of the site. • A report of findings will be prepared by the qualified biologist and submitted to the UC Berkeley's Office of Physical & Environmental Planning for review and approval prior to initiation of vegetation removal, building demolition and other construction activities during the nesting season. The report will either confirm absence of any active nests or confirm that any young are located within a designated no-disturbance zone and construction can proceed. No report of findings is required if vegetation removal and other construction activities are initiated during the non-nesting season and continue uninterrupted according to the above criteria.					
CBP BIO-2: Avoid remote potential for direct mortality of special-status bats and destruction of maternal roosts. A preconstruction roosting survey for special-status bat species, covering the project construction site and any affected buildings, will be conducted during the months of March through August prior to commencement of any project that may impact suitable maternal roosting habitat on the Campus Park, the Hill Campus East, and other UC Berkeley properties with suitable roosting habitat, as defined below. The survey will be conducted by a qualified biologist no more than 30 days prior to initiation of	Consulting biologist	Prior to activities that could impact suitable roosting habitat (as defined in CBP BIO-2)	Project Manager, Capital Projects and Office of Physical & Environmental Planning	Review and approve report of findings	Oncet

MITIGATION MONITORING AND REPORTING PROGRAM

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
disturbance to potential roosting habitat. In the Hill Campus East, surveys will be conducted for new construction projects prior to grading, vegetation removal, and remodel or demolition of buildings with isolated attics and other suitable roosting habitat, as defined below. Suitable roosting habitat shall be determined as follows: In the Campus Park and other urbanized UC Berkeley properties, surveys will be conducted for construction projects prior to remodel or demolition of buildings with isolated attics. A report of findings will be prepared by the qualified biologist and submitted to the UC Berkeley project manager for review and approval prior to initiation of grading, vegetation removal, or construction activities. If any maternal roosts are detected during the months of March through August, construction activities will either stop or continue only after the roost is protected by an adequate setback approved by a qualified biologist. To the full extent feasible, the maternal roost location will be preserved, and alteration will only be allowed if a qualified biologist verifies that bats have completed rearing young, that the juveniles are foraging independently and capable of survival, and bats have been subsequently passively excluded from the roost location.					
CBP BIO-9: Adverse effects to specimen trees and plants will be avoided. UC Berkeley will continue to implement the Campus Specimen Tree Program to reduce effects to specimen trees and flora. Replacement landscaping will be provided where specimen resources are adversely affected, either through salvage and transplanting of existing trees and shrubs or through new horticulturally appropriate replacement plantings, as directed by the Campus Landscape Architect.	Consulting landscape architect or Campus Landscape Architect	During landscape planning	Campus Architect	Review landscaping plans	Once
CBP BIO-10: Implementation of the recommendations of the Landscape Master Plan and subsequent updates, and	Consulting landscape architect or Campus	During landscape planning	Campus Architect	Review landscaping plans	Once

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
project-specific design guidelines, will provide for stewardship of existing landscaping, and use of replacement and expanded tree and shrub plantings to improve the important open space characteristics and resilience of the Campus Park. Native plantings and horticulturally appropriate species will continue to be used in future landscaping, serving to partially replace any trees lost as a result of development.	Landscape Architect				
CBP BIO-11: Trees and other vegetation require routine maintenance. As trees age and become senescent, UC Berkeley will continue to undertake trimming, thinning, or removal, particularly if trees become a safety hazard. Vegetation in the Hill Campus East requires continuing management for fire safety, emergency evacuation, habitat enhancement, and other objectives. This may include removal of mature trees such as native live oaks and non-native plantings of eucalyptus and pine. The Landscape Master Plan, Landscape Heritage Plan and their subsequent updates will provide guidance on potential species to replace trees that are removed, where appropriate.	Landscape Supervisor, Facilities Services	Ongoing during regular vegetation maintenance	Director of Campus Operations, Facilities Services	Confirm vegetation maintenance during regular site inspections and conformance the landscape plans for the project	Ongoing
Cultural Resources (CUL)					
CBP CUL-1: UC Berkeley will follow the procedures of conduct following the discovery of human remains that have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (California Environmental Quality Act [CEQA]). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the California Native American Heritage	Project construction crews and County Coroner	During construction	Project Manager, Capital Projects and Office of Physical & Environmental Planning	Confirm conformance during regular site inspections	During regular site inspections

MITIGATION MONITORING AND REPORTING PROGRAM

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the NAHC is unable to identify an MLD, the MLD fails to make a recommendation within 48 hours after being notified, or the landowner rejects the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance.					
Geology and Soils (GEO)					
CBP GEO-1: UC Berkeley will continue to comply with the California Building Code and the University of California Seismic Safety Policy.	Campus Building Department	Prior to construction	Director of Campus Building Department	Review building plans	Once
CBP GEO-2: Site-specific geotechnical studies will be conducted under the supervision of a California Registered Certified Engineering Geologist or licensed geotechnical engineer and UC Berkeley will incorporate recommendations for geotechnical hazard prevention and abatement into project design.	Consulting geologist or engineer	Prior to project approval	Project Manager, Capital Projects	Confirm studies	Once
CBP GEO-3: The UC Berkeley Seismic Review Committee will continue to review all seismic and structural engineering design for new and renovated existing buildings on campus.	UC Berkeley Seismic Review Committee	Prior to project approval	Director of Capital Projects	Confirm review	Once
CBP GEO-4: UC Berkeley will continue to use site-specific seismic ground motions for analysis and design of campus projects. Site-specific ground motions provide more current geo-seismic data than the U.S. Geological Survey (USGS) and are used for performance-based analyses.	Consulting geologist or engineer	Prior to project approval	Project Manager, Capital Projects	Confirm studies	Once
CBP GEO-5: UC Berkeley will continue to comply with the UC Seismic Safety Policy. Through this program, UC Berkeley will continue to identify buildings in need of upgrades and	Project Manager, Capital Projects	Ongoing	Director of Capital Projects	Review Capital Financial Plan for inclusion of upgrades	Annual

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
include seismic improvements as part of its Capital Financial Plan.				and improvements	
CBP GEO-6: UC Berkeley will continue to implement programs and projects in emergency planning, training, response, and recovery. Each campus Building Coordinator will prepare, and update as needed, building response plans and coordinate education and planning for all building occupants.	Building Coordinators	Ongoing	Director of Office of Emergency Management	Confirm building response plans, education, and planning	Ongoing
CBP GEO-7: As stipulated in the UC Seismic Safety Policy, the design parameters for specific site peak acceleration and structural reinforcement will be determined by the geotechnical and structural engineer for each new or rehabilitation project proposed under the LRDP. The acceptable level of actual damage that could be sustained by specific structures will be calculated based on geotechnical information obtained at the specific building site.	Consulting geologist or engineer	Prior to project approval	Project Manager, Capital Projects	Confirm studies	Once
CBP GEO-8: Site-specific geotechnical studies will include an assessment of landslide hazard, including seismic vibration and other factors contributing to slope stability.	Consulting geologist or engineer	Prior to project approval	Project Manager, Capital Projects	Confirm studies	Once
CBP GEO-9: Campus construction projects must comply with the Campus Design Standards, which contain regulatory and other campus requirements for construction-phase and post-construction stormwater management.	Capital Projects	Prior to construction	Director of Campus Building Department	Review building plans	Once
CBP GEO-10: In the event that a unique paleontological resource is identified during project planning or construction, the work will stop immediately in the area of effect, and the find will be protected until its significance can be determined by a qualified paleontologist. If the resource is determined to be a "unique resource," a mitigation plan will be formulated pursuant to guidelines developed by the Society of Vertebrate Paleontology and implemented to appropriately protect the significance of the resource by preservation, documentation, and/or	Project construction crews and qualified paleontologist	During construction	Project Manager, Capital Projects and Office of Physical & Environmental Planning	Confirm conformance during regular site inspections and, if required, review and approve mitigation plan	During regular site inspections

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Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
removal, prior to recommencing activities in the area of effect. The plan will be prepared by the qualified paleontologist and submitted to the UC Berkeley project manager for review and approval prior to initiation or recommencement of construction activities in the area of effect.					
Hazards and Hazardous Materials (HAZ)					
CBP HAZ-1: UC Berkeley will continue to implement the same (or equivalent) health and safety plans, programs, practices, and procedures related to the use, storage, disposal, or transportation of hazardous materials and wastes (including chemical, radioactive, and biohazardous materials and waste) during the LRDP planning horizon. These include, but are not limited to: • Requirements for safe transportation of hazardous materials • UC Berkeley Office of Environment, Health & Safety training programs and oversight • The Hazard Communication Program • Publication and promulgation of the Water Protection Policy, the drain disposal guidelines, the Wastewater Toxics Management Plan, and the Slug Control Plan • Requirements that laboratories have Chemical Hygiene Plans and a chemical inventory database • The Aboveground Storage Tank Spill Prevention Control and Countermeasure Plan and monitoring of underground storage tanks • Implementation of the hazardous waste disposal program and policies • The Green Labs Program • The Biosafety Program • The Medical Waste Management Program • The Laser Safety Program	UC Berkeley (various departments)	Ongoing	Executive Director of Office of Environment, Health & Safety	Confirm continued implementation of programs and procedures	Annual

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Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
• The Radiation Safety Program • The Drain Disposal Restrictions These programs may be subject to modification as regulations or UC Berkeley policies are developed or if the programs become obsolete through replacement by other programs that incorporate similar or more effective health and safety protection measures. However, any modifications must incorporate similar or more effective health and safety protection measures.					
CBP HAZ-4: UC Berkeley will continue to perform hazardous materials surveys prior to capital projects in existing UC Berkeley buildings. UC Berkeley will continue to comply with federal, State, and local regulations governing the abatement and handling of hazardous building materials and each project will address this requirement in all construction.	Office of Environment, Health & Safety	Prior to construction	Project Manager, Capital Projects	Confirm surveys and review construction documents	Once
CBP HAZ-5: UC Berkeley will continue to perform site histories and due diligence assessments of all sites where ground-disturbing construction is proposed, to assess the potential for soil and groundwater contamination resulting from past or current site land uses at the site or in the vicinity. The investigation will include review of regulatory records, historical maps and other historical documents, and inspection of current site conditions. UC Berkeley will act to protect the health and safety of workers or others potentially exposed should hazardous site conditions be found.	Office of Environment, Health & Safety	Prior to construction	Project Manager, Capital Projects	Confirm investigations	Once
Hydrology and Water Quality (HYD)					
CBP HYD-1: During the plan check review process and construction phase monitoring, UC Berkeley Office of Environment, Health & Safety will review each development project to determine whether project runoff would increase pollutant loading and verify that the proposed project complies with all applicable requirements (e.g., Regional	Office of Environment, Health & Safety	During plan check review and construction monitoring	Environmental Specialist, Office of Environment, Health & Safety	Confirm review	Once

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Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Water Quality Control Board and Campus Design Standards requirements) and best management practices (e.g., those described in the California Stormwater Quality Association's Construction BMP Handbook).					
CBP HYD-2: UC Berkeley will continue implementing an urban runoff management program containing best management practices, as published in the Strawberry Creek Management Plan, and as developed through the Stormwater Permit Annual Reports completed for the Phase II municipal separate storm sewer system (MS4) permit. UC Berkeley will continue to comply with the MS4 stormwater permitting requirements by implementing construction and post-construction control measures and best management practices required by project-specific Stormwater Pollution Prevention Plans (SWPPPs) and by the Phase II MS4 permit to control pollution. SWPPPs will be prepared by the project contractor as required to prevent discharge of pollutants and to minimize sedimentation resulting from construction and the transport of soils by construction vehicles.	Office of Environment, Health & Safety	Ongoing	Environmental Protection Manager, Office of Environment, Health & Safety	Confirm SWPPPs	Once
CBP HYD-3: UC Berkeley will maintain a campuswide educational program regarding safe use and disposal of facilities maintenance chemicals and laboratory chemicals to prevent the discharge of these pollutants to Strawberry Creek and campus storm drains.	Office of Environment, Health & Safety	Ongoing	Executive Director of Office of Environment, Health & Safety	Confirm program implementation	Ongoing
CBP HYD-5: Landscaped areas of development sites will be designed to absorb runoff from rooftops and walkways. Open or porous paving systems will be included in project designs, where feasible, to minimize impervious surfaces and absorb runoff.	Capital Projects	Prior to project approval	Project Manager, Capital Projects	Review building plans	Once
CBP HYD-7: UC Berkeley will continue to review each development project, to determine whether rainwater infiltration to groundwater is affected. If it is determined that existing infiltration rates would be adversely affected, UC Berkeley will design and implement the necessary improvements to retain and infiltrate stormwater. Such	Project Manager, Capital Projects	Prior to construction	Director of Campus Building Department and Environmental Specialist, Office of Environment, Health	Review construction documents	Once

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Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
improvements could include retention basins to collect and retain runoff, grassy swales, infiltration galleries, planter boxes, permeable pavement, or other retention methods. The goal of the improvement should be to ensure that there is no net decrease in the amount of water recharged to groundwater that serves as freshwater replenishment to Strawberry Creek. The improvement should maintain the volume of flows and times of concentration from any given site at pre-development conditions.			& Safety		
CBP HYD-8: Dewatering, when needed, will be monitored and maintained by qualified engineers in compliance with the Campus Design Standards and applicable regulations.	Consulting engineers	During construction	Director of Campus Building Department	Confirm monitoring and maintenance	Once
CBP HYD-9: The campus storm drain system will be maintained and cleaned to accommodate existing runoff.	Campus Operations, Facilities Services	Ongoing	Director of Campus Operations, Facilities Services	Confirm maintenance	Ongoing
CBP HYD-11: Development that encroaches on creek channels and riparian zones will be prohibited. An undisturbed buffer zone will be maintained between proposed capital projects and creek channels.	Capital Projects	Prior to project approval	Project Manager, Capital Projects	Review building plans	Once
CBP HYD-13: UC Berkeley will continue to manage runoff into storm drain systems such that the aggregate effect of projects implemented pursuant to the LRDP creates no net increase in runoff over existing conditions.	Capital Projects	Prior to project approval	Environmental Specialist, Office of Environment, Health & Safety and Project Manager, Capital Projects	Review building plans	Once
Land Use and Planning (LU)					
CBP LU-1: New projects in the Campus Park will, as a general rule, conform to the Physical Design Framework. The Physical Design Framework includes specific provisions to ensure projects at the city interface consider the transition from campus to city.	Office of Physical & Environmental Planning	Prior to final design approval	Project Manager, Capital Projects and Campus Architect	Review project proposals for conformance to Physical Design Framework	Ongoing during project development and review
Noise (NOI)					
CBP NOI-2: UC Berkeley will require the following measures	Future project	During construction	Director of Campus	Confirm	Once for

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for all construction projects: • Construction activities will be limited to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park will be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary. As feasible, construction equipment will be required to be muffled or controlled. • The intensity of potential noise sources will be reduced where feasible by selection of quieter equipment (e.g., gas or electric equipment instead of diesel powered, low noise air compressors). • Functions such as concrete mixing and equipment repair will be performed off-site whenever possible. • Stationary equipment such as generators and air compressors will be located as far as feasible from nearby noise-sensitive uses. • At least 10 days prior to the start of construction activities, a sign will be posted at the entrance(s) to the job site, clearly visible to the public, that includes contact information for UC Berkeley's authorized representative in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, they will investigate, take appropriate corrective action, and report the action to UC Berkeley. • During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only. The construction manager will use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms	contractors		Building Department and Director of Communications, Capital Strategies	incorporation of measures in construction bids	construction bid review; ongoing monitoring subject to corrective action and reporting requirements

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
and replace with human spotters in compliance with all safety requirements and laws. For projects requiring pile driving: • With approval of the project structural engineer, pile holes will be pre-drilled to minimize the number of impacts necessary to seat the pile. • Pile driving will be scheduled to have the least impact on nearby sensitive receptors. • Pile drivers with the best available noise control technology will be used. For example, pile driving noise control may be achieved by shrouding the pile hammer point of impact, by placing resilient padding directly on top of the pile cap, and/or by reducing exhaust noise with a sound-absorbing muffler. • Alternatives to impact hammers, such as oscillating or rotating pile installation systems, will be used where feasible.					
Transportation (TRAN)					
CBP TRAN-1: UC Berkeley will implement bicycle, pedestrian, and transit access and circulation improvements as part of new building projects, major renovations, and landscape projects. Improvements will address the goal of increasing non-vehicular commuting and safety; improving access from adjacent campus or city streets and public transit; reducing multi-modal conflict; providing bicycle parking; and providing commuter amenities.	Capital Projects	During planning and design of new building projects, major renovations, and landscape projects	Project Manager, Capital Projects	Review project plans	Once
Utilities and Service Systems (USS)					
CBP USS-1: For development that increases water demand, UC Berkeley will continue to evaluate the size of existing distribution lines as well as pressure of the specific feed affected by development on a project-by-project basis, and necessary improvements will be incorporated into the scope of work for each project to maintain current service and performance levels. The design of the water distribution	Capital Projects, EBMUD, City of Berkeley	Prior to project approval	Utility Engineering Department, Facilities Services	Review building plans	Once

MITIGATION MONITORING AND REPORTING PROGRAM

Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
system, including fire flow, for new buildings will be coordinated among UC Berkeley, the East Bay Municipal Utility District, and the City of Berkeley Public Works Department and Fire Department.					
CBP USS-3: UC Berkeley will continue to incorporate specific water conservation measures into project design to reduce water consumption and wastewater generation. This could include the use of special air-flow aerators, water-saving shower heads, flush cycle reducers, low-volume toilets, weather-based or evapotranspiration irrigation controllers, drip irrigation systems, and the use of drought resistant plantings in landscaped areas, and collaboration with the East Bay Municipal Utility District to explore suitable uses of recycled water.	Capital Projects	During project design	Project Manager, Capital Projects	Review building plans	Once
CBP USS-4: UC Berkeley will analyze water and sewer systems on a project-by-project basis to determine specific capacity considerations for both UC Berkeley systems and off-site municipal systems in the planning of any project proposed under the LRDP.	Capital Projects	Prior to project approval	Utility Engineering Department, Facilities Services	Review building plans	Once
CBP USS-5: Payments to service providers to help fund wastewater treatment or collection facilities will conform to Section 54999 of the California Government Code, including, but not limited to, the following provisions: • Fees will be limited to the cost of capital construction or expansion. • Fees will be imposed only after an agreement has been negotiated by UC Berkeley and the service provider. • The service provider must demonstrate the fee is nondiscriminatory: i.e. the fee must not exceed an amount determined on the basis of the same objective criteria and methodology applied to comparable nonpublic users, and must not exceed the proportionate share of the cost of the facilities of benefit to the entity property being charged, based	Office of Physical & Environmental Planning	Prior to issuance of occupancy permits	Office of the Chief Financial Officer	Confirm payment	Once

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Continuing Best Practice (CBP)	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
upon the proportionate share of use of those facilities. The service provider must demonstrate the amount of the fee does not exceed the amount necessary to provide capital facilities for which the fee is charged.					
CBP USS-6: UC Berkeley will continue to implement the Zero Waste requirements of the UC Sustainability Policy designed to reduce the total quantity of campus solid waste that is disposed of in landfills.	Zero Waste staff	Ongoing	Manager, Zero Waste	Confirm implementation	Ongoing
CBP USS-7: In accordance with the CalGreen Code, and as required for Leadership in Energy and Environmental Design certification, contractors working for UC Berkeley will be required under their contracts to report their solid waste diversion according to UC Berkeley's waste management reporting requirements.	Project contractors	During construction	Project Manager, Capital Projects	Confirm reports	Ongoing during construction
Wildfire (WF)					
CBP WF-1: UC Berkeley will continue to comply with the California Public Resources Code Section 4291, which mandates firebreaks of 100 feet around buildings or structures in, upon, or adjoining any mountainous, forested, or brush- or grass-covered lands.	Campus Operations, Facilities Services	Ongoing	Campus Fire Marshal	Confirm maintenance of firebreaks	Ongoing
CBP WF-2: UC Berkeley will conduct vegetation management under its approved Wildland Vegetative Fuel Management Plan.	Hill Campus Fire Mitigation, Facilities Services	Ongoing	Director of Campus Operations, Facilities Services	Review vegetation management plans	Ongoing during planning for vegetation management practices
CBP WF-3: UC Berkeley will continue to plan and implement programs to reduce risk of wildland fires, including plan review and construction inspection programs that ensure that its projects incorporate fire prevention measures.	Campus Building Department	During plan review and site inspection	Director of Campus Building Department and Campus Fire Marshal	Confirm incorporation of fire prevention measures in construction plans	Once for plan review; during regularly scheduled inspections
CBP WF-4: UC Berkeley will continue to plan and collaborate with other agencies through participation in the Hills Emergency Forum.	Hill Campus Fire Mitigation, Facilities Services	Ongoing	Director of Campus Operations, Facilities Services	Confirm participation in the Hills Emergency Forum	Annual

MITIGATION MONITORING AND REPORTING PROGRAM

6. *Organizations and Persons Consulted*

This Initial Study was prepared by the following consultants and individuals:

REPORT PREPARERS

LEAD CEQA CONSULTANT

Rincon Consultants, Inc.

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ORGANIZATIONS AND PERSONS CONSULTED

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Appendix A

Air Quality and Greenhouse Gas Emissions Modeling Data

Cal Beach Volleyball Complex Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cal Beach Volleyball Complex Project
Construction Start Date	3/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	44.2
Location	University Avenue and, Oxford St, Berkeley, CA 94720, USA
County	Alameda
City	Berkeley
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1585
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Parking Lot	0.80	Acre	0.80	0.00	1,000	—	—	—

Health Club	3.50	1000sqft	0.08	3,500	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.77	4.74	11.2	10.8	0.02	0.48	2.39	2.87	0.44	1.09	1.53	—	2,732	2,732	0.12	0.17	2.37	2,788
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.39	1.13	11.3	10.8	0.03	0.48	3.97	4.17	0.44	1.09	1.53	—	3,438	3,438	0.17	0.41	0.15	3,566
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.40	0.33	3.32	4.27	0.01	0.14	0.20	0.34	0.13	0.06	0.18	—	890	890	0.04	0.02	0.13	898
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	0.06	0.61	0.78	< 0.005	0.03	0.04	0.06	0.02	0.01	0.03	—	147	147	0.01	< 0.005	0.02	149

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	1.39	1.13	11.2	10.8	0.02	0.48	2.39	2.87	0.44	1.09	1.53	—	2,732	2,732	0.12	0.17	2.37	2,788
2026	4.77	4.74	4.28	5.93	0.01	0.18	0.14	0.32	0.16	0.03	0.20	—	972	972	0.04	0.01	0.55	977
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.39	1.13	11.3	10.8	0.03	0.48	3.97	4.17	0.44	1.09	1.53	—	3,438	3,438	0.17	0.41	0.15	3,566
2026	0.70	0.60	4.83	6.96	0.01	0.19	0.14	0.32	0.17	0.03	0.20	—	1,331	1,331	0.05	0.01	0.01	1,336
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.40	0.33	3.32	4.27	0.01	0.14	0.20	0.34	0.13	0.06	0.18	—	890	890	0.04	0.02	0.13	898
2026	0.25	0.24	0.90	1.26	< 0.005	0.04	0.02	0.05	0.03	< 0.005	0.04	—	224	224	0.01	< 0.005	0.03	225
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.07	0.06	0.61	0.78	< 0.005	0.03	0.04	0.06	0.02	0.01	0.03	—	147	147	0.01	< 0.005	0.02	149
2026	0.05	0.04	0.16	0.23	< 0.005	0.01	< 0.005	0.01	0.01	< 0.005	0.01	—	37.0	37.0	< 0.005	< 0.005	< 0.005	37.2

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.12	0.04	0.19	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	11.1	230	241	1.13	< 0.005	0.02	270
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.09	0.04	0.03	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	11.1	229	240	1.13	< 0.005	0.02	269
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	0.10	0.04	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	11.1	229	241	1.13	< 0.005	0.02	269
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.02	0.02	0.01	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	1.85	38.0	39.8	0.19	< 0.005	< 0.005	44.6

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.12	0.12	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.63	0.63	< 0.005	< 0.005	—	0.63
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	226	226	0.01	< 0.005	—	226
Water	—	—	—	—	—	—	—	—	—	—	—	0.40	3.58	3.98	0.04	< 0.005	—	5.29
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.12	0.12	0.04	0.19	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	11.1	230	241	1.13	< 0.005	0.02	270
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	226	226	0.01	< 0.005	—	226
Water	—	—	—	—	—	—	—	—	—	—	—	0.40	3.58	3.98	0.04	< 0.005	—	5.29
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.09	0.09	0.04	0.03	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	11.1	229	240	1.13	< 0.005	0.02	269
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.10	0.10	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.31	0.31	< 0.005	< 0.005	—	0.31
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	226	226	0.01	< 0.005	—	226

Water	—	—	—	—	—	—	—	—	—	—	—	0.40	3.58	3.98	0.04	< 0.005	—	5.29
Waste	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.11	0.10	0.04	0.11	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	11.1	229	241	1.13	< 0.005	0.02	269
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.02	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.3	37.3	< 0.005	< 0.005	—	37.4
Water	—	—	—	—	—	—	—	—	—	—	—	0.07	0.59	0.66	0.01	< 0.005	—	0.88
Waste	—	—	—	—	—	—	—	—	—	—	—	1.78	0.00	1.78	0.18	0.00	—	6.23
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	0.02	0.02	0.01	0.02	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	1.85	38.0	39.8	0.19	< 0.005	< 0.005	44.6

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.33	5.65	0.01	0.16	—	0.16	0.14	—	0.14	—	852	852	0.03	0.01	—	855
Demolition	—	—	—	—	—	—	3.22	3.22	—	0.49	0.49	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.3	23.3	< 0.005	< 0.005	—	23.4
Demolition	—	—	—	—	—	—	0.09	0.09	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.87	3.87	< 0.005	< 0.005	—	3.88
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.3	80.3	< 0.005	< 0.005	0.01	81.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.19	0.05	3.20	1.22	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,505	2,505	0.13	0.40	0.14	2,629
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.01	< 0.005	0.09	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	68.6	68.6	< 0.005	0.01	0.07	72.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.4	11.4	< 0.005	< 0.005	0.01	11.9

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.47	4.16	5.57	0.01	0.21	—	0.21	0.20	—	0.20	—	859	859	0.03	0.01	—	862
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.8	11.8	< 0.005	< 0.005	—	11.8

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.95	1.95	< 0.005	< 0.005	—	1.95
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.2	40.2	< 0.005	< 0.005	< 0.005	40.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.09	0.09	< 0.005	< 0.005	< 0.005	0.09

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.08	2.08	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.29	1.09	10.1	10.0	0.02	0.46	—	0.46	0.43	—	0.43	—	1,714	1,714	0.07	0.01	—	1,720
Dust From Material Movement	—	—	—	—	—	—	2.08	2.08	—	1.00	1.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.04	0.04	0.33	0.33	< 0.005	0.02	—	0.02	0.01	—	0.01	—	56.3	56.3	< 0.005	< 0.005	—	56.5
Dust From Material Movement	—	—	—	—	—	—	0.07	0.07	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.33	9.33	< 0.005	< 0.005	—	9.36
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	64.9	64.9	< 0.005	< 0.005	0.26	66.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.02	1.15	0.46	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	953	953	0.05	0.15	2.12	1,002
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.26	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.2	60.2	< 0.005	< 0.005	0.01	61.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.02	1.22	0.47	0.01	0.02	0.25	0.27	0.02	0.07	0.09	—	953	953	0.05	0.15	0.05	1,000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.02

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.3	31.3	< 0.005	0.01	0.03	32.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.19	5.19	< 0.005	< 0.005	< 0.005	5.45

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.14	6.94	0.01	0.22	—	0.22	0.20	—	0.20	—	1,305	1,305	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.32	0.27	2.68	3.61	0.01	0.11	—	0.11	0.10	—	0.10	—	679	679	0.03	0.01	—	682
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.49	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	112	112	< 0.005	< 0.005	—	113
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.05	12.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.04	16.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	< 0.005	12.0
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	< 0.005	16.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.19	6.19	< 0.005	< 0.005	0.01	6.28
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.96	7.96	< 0.005	< 0.005	0.01	8.32
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.04

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.32	1.32	< 0.005	< 0.005	< 0.005	1.38
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.81	6.91	0.01	0.19	—	0.19	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.46	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	125	125	0.01	< 0.005	—	126
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.7	20.7	< 0.005	< 0.005	—	20.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	< 0.005	11.7
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	< 0.005	15.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.13
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.44	1.44	< 0.005	< 0.005	< 0.005	1.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.24	5.30	0.01	0.18	—	0.18	0.16	—	0.16	—	823	823	0.03	0.01	—	826
Paving	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.59	0.49	4.24	5.30	0.01	0.18	—	0.18	0.16	—	0.16	—	823	823	0.03	0.01	—	826
Paving	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.41	0.51	< 0.005	0.02	—	0.02	0.02	—	0.02	—	78.9	78.9	< 0.005	< 0.005	—	79.2
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.1	13.1	< 0.005	< 0.005	—	13.1
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.04	0.63	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	149	149	< 0.005	0.01	0.55	151
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.56	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	138	138	< 0.005	0.01	0.01	140
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.02	13.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	4.62	4.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	0.13	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.50	2.50	< 0.005	< 0.005	0.01	2.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.01	0.01	< 0.005	< 0.005	< 0.005	0.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	78.4	78.4	< 0.005	< 0.005	—	78.5

Health Club	—	—	—	—	—	—	—	—	—	—	—	—	98.0	98.0	< 0.005	< 0.005	—	98.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	176	176	0.01	< 0.005	—	177
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	78.4	78.4	< 0.005	< 0.005	—	78.5
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	98.0	98.0	< 0.005	< 0.005	—	98.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	176	176	0.01	< 0.005	—	177
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	13.0	13.0	< 0.005	< 0.005	—	13.0
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	16.2	16.2	< 0.005	< 0.005	—	16.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	29.2	29.2	< 0.005	< 0.005	—	29.3

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Health Club	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.1	49.1	< 0.005	< 0.005	—	49.3
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.1	49.1	< 0.005	< 0.005	—	49.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Health Club	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.1	49.1	< 0.005	< 0.005	—	49.3
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.1	49.1	< 0.005	< 0.005	—	49.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Health Club	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.13	8.13	< 0.005	< 0.005	—	8.15
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.13	8.13	< 0.005	< 0.005	—	8.15

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.08	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.63	0.63	< 0.005	< 0.005	—	0.63
Total	0.12	0.12	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.63	0.63	< 0.005	< 0.005	—	0.63

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.08	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.09	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	0.02	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.14	0.14	< 0.005	< 0.005	—	0.14
Health Club	—	—	—	—	—	—	—	—	—	—	—	0.40	3.44	3.84	0.04	< 0.005	—	5.15
Total	—	—	—	—	—	—	—	—	—	—	—	0.40	3.58	3.98	0.04	< 0.005	—	5.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.14	0.14	< 0.005	< 0.005	—	0.14
Health Club	—	—	—	—	—	—	—	—	—	—	—	0.40	3.44	3.84	0.04	< 0.005	—	5.15
Total	—	—	—	—	—	—	—	—	—	—	—	0.40	3.58	3.98	0.04	< 0.005	—	5.29
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.02	0.02	< 0.005	< 0.005	—	0.02
Health Club	—	—	—	—	—	—	—	—	—	—	—	0.07	0.57	0.64	0.01	< 0.005	—	0.85
Total	—	—	—	—	—	—	—	—	—	—	—	0.07	0.59	0.66	0.01	< 0.005	—	0.88

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Health Club	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6

Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Health Club	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6
Total	—	—	—	—	—	—	—	—	—	—	—	10.8	0.00	10.8	1.07	0.00	—	37.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Health Club	—	—	—	—	—	—	—	—	—	—	—	1.78	0.00	1.78	0.18	0.00	—	6.23
Total	—	—	—	—	—	—	—	—	—	—	—	1.78	0.00	1.78	0.18	0.00	—	6.23

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	3/1/2025	3/14/2025	5.00	10.0	—
Site Preparation	Site Preparation	3/15/2025	3/21/2025	5.00	5.00	—
Grading	Grading	3/22/2025	4/8/2025	5.00	12.0	—
Building Construction	Building Construction	4/10/2025	2/18/2026	5.00	225	—
Paving	Paving	2/19/2026	4/8/2026	5.00	35.0	—
Architectural Coating	Architectural Coating	4/9/2026	4/22/2026	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	1.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	6.00	84.0	0.37
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Graders	Diesel	Average	1.00	6.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	6.00	367	0.40

Grading	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	4.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	6.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Pavers	Diesel	Average	1.00	7.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	7.00	36.0	0.38
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	6.00	10.0	0.56
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	7.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	35.7	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	7.50	11.7	LDA,LDT1,LDT2

Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	13.6	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1.47	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	0.57	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.29	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	5,250	1,750	2,091

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	31,000	—
Site Preparation	—	—	2.50	0.00	—
Grading	—	1,300	36.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.80

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Parking Lot	0.80	100%
Health Club	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,250	1,750	2,091

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Parking Lot	30,527	937	0.0330	0.0040	0.00
Health Club	38,186	937	0.0330	0.0040	153,262

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Parking Lot	0.00	11,361
Health Club	207,001	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Parking Lot	0.00	—
Health Club	19.9	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.10	annual days of extreme heat
Extreme Precipitation	7.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.12

AQ-PM	38.6
AQ-DPM	82.2
Drinking Water	4.21
Lead Risk Housing	—
Pesticides	0.00
Toxic Releases	58.1
Traffic	4.80
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	91.3
Haz Waste Facilities/Generators	95.9
Impaired Water Bodies	12.5
Solid Waste	0.00
Sensitive Population	—
Asthma	1.46
Cardio-vascular	14.9
Low Birth Weights	—
Socioeconomic Factor Indicators	—
Education	—
Housing	—
Linguistic	—
Poverty	4.02
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	99.9

Asthma ER Admissions	97.2
High Blood Pressure	99.9
Cancer (excluding skin)	99.8
Asthma	83.3
Coronary Heart Disease	100.0
Chronic Obstructive Pulmonary Disease	100.0
Diagnosed Diabetes	100.0
Life Expectancy at Birth	0.0
Cognitively Disabled	99.2
Physically Disabled	97.3
Heart Attack ER Admissions	98.6
Mental Health Not Good	95.0
Chronic Kidney Disease	99.9
Obesity	100.0
Pedestrian Injuries	0.0
Physical Health Not Good	100.0
Stroke	100.0
Health Risk Behaviors	—
Binge Drinking	0.4
Current Smoker	97.7
No Leisure Time for Physical Activity	99.9
Climate Change Exposures	—
Wildfire Risk	99.8
SLR Inundation Area	0.0
Children	98.2
Elderly	99.8
English Speaking	0.0
Foreign-born	0.0

Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	77.4
Traffic Density	0.0
Traffic Access	87.4
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	—
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	UCB Cogeneration Plant Data
Construction: Construction Phases	Provided by applicant.
Construction: Dust From Material Movement	Provided by applicant.

Appendix B

Historic Resources Impact Assessment

Rincon Consultants, Inc.
66 Franklin Street
Suite 300
Oakland, California 94607

RINCON CONSULTANTS, INC. SINCE 1994

December 2024
Project No: 23-14700

Shraddha Navalli Patil, Ph.D.
Senior Planner, Physical & Environmental Planning
UC Berkeley Capital Strategies
200 A&E Building
Berkeley, California 94720
Via email: shraddah@berkeley.edu

Subject: Cultural Resources Assessment for the Cal Beach Volleyball Complex University of California, Berkeley

Dear Ms. Navalli Patil:

This letter report presents the findings of a cultural resources assessment and historical resources impacts assessment completed in support of the Cal Beach Volleyball Complex (Proposed Project) located on the University of California, Berkeley (UC Berkeley) campus. UC Berkeley retained Rincon Consultants, Inc. (Rincon) to support the Proposed Project's compliance with the California Environmental Quality Act (CEQA). This letter report documents the results of the tasks performed by Rincon, specifically a cultural resources records search and archival and background research.

This letter report also includes a historical resources impacts assessment of the Proposed Project, which is located immediately west of Edwards Stadium. Edwards Stadium was constructed in 1932 and was listed in the National Register of Historic Places (NRHP) in 1993.[1] It is therefore a historical resource as defined in Section 15064.5(a) of the California Environmental Quality Act (CEQA) Guidelines. The current assessment was prepared to determine if the project conforms with the Secretary of the Interior's Standards for Rehabilitation (Standards) and would result in an impact to a historical resource.[2] Per Section 15064.5(b)(3) of the CEQA Guidelines, a project that is found to comply with the Standards generally mitigates impacts to a less than significant level. All work was completed in accordance with CEQA.

This letter report was prepared by Rincon Architectural Historian Josh Bevan, AICP, MSHP, with oversight by Architectural Historian Project Manager JulieAnn Murphy, MSHP and QA/QC review by Cultural Resources Director Steven Treffers, MHP. Mr. Bevan, Ms. Murphy, and Mr. Treffers, all meet the Secretary of the Interior's Professional Qualification Standards for architectural history and history (36 CFR Part 61).

Project Site and Description

The project site is located in the Campus Park zone of the campus, at the northeast corner of Oxford and Fulton Streets and Bancroft Way (Figure 1 and Figure 2). Specifically, the Proposed Project

[1] Michael Corbett. National Register of Historic Places Nomination Form: Edwards Stadium, University of California, Berkeley, Alameda County, California. NPS Reference #93000263. Prepared June 30, 1992. Entered into National Register March 2, 1993.

[2] Kay Weeks and Anne Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*. National Park Service, Washington, D.C., 2017.

encompasses portions of Sections 1 and 2 of Township 01S, Range 04W on the *Oakland West Quadrangle California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle.

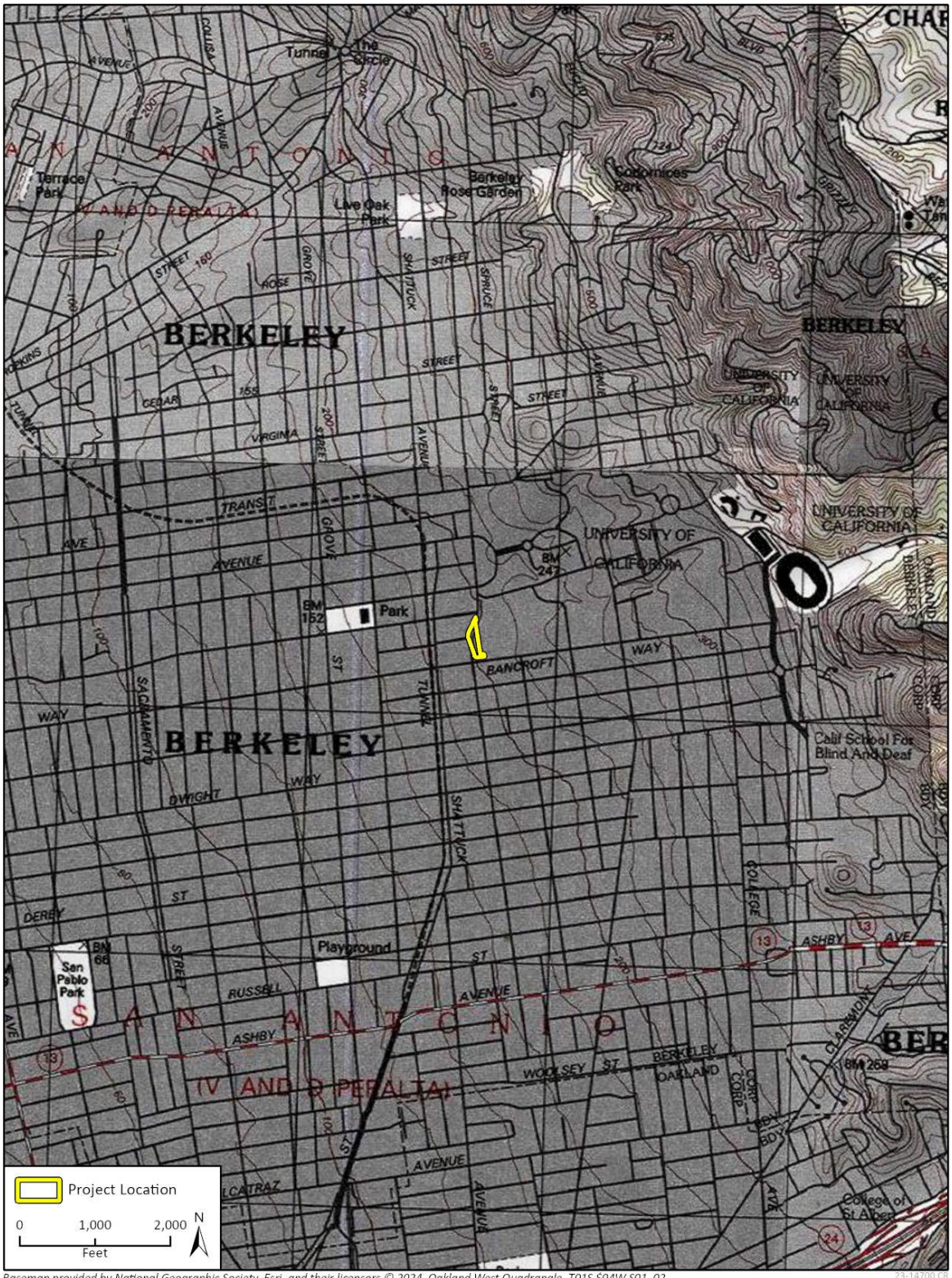
The following project description has been adapted from information provided by UC Berkeley. The Proposed Project would involve replacing the existing parking lot and landscaping adjacent to Edwards Stadium on its west side with a five-court sand volleyball facility with a viewing capacity of approximately 400 spectators on berm seating (with no fixed seating) and an approximately 3,500 square-foot team building for locker rooms and restrooms (Figure 3). The Proposed Project also includes lighting and a public-address (PA) system for sound amplification, plus modifications to the existing sidewalk on Fulton/Oxford Street along the site frontage, and reconfiguration of on-street parking on this segment of the road.

All existing landscaping and asphalt paving, excepting one tree to be protected in place, would be removed. The majority of the site would be covered by the five sand volleyball courts and sand warm-up areas located to the immediate west of the courts along the site's west perimeter. The four northernmost courts would be oriented east-west and the southernmost court would be oriented north-south.

A concrete retaining wall would be constructed along the western boundary of the site. The retaining wall would be approximately 7 feet tall at its highest point, with the top of wall being level across the site and the bottom of wall sloping with street grade. A metal picket fence would be anchored in the retaining wall. The fence would be approximately 6 feet tall with areas up to 8 feet tall at the fire access area on the north side of the site. The pickets would be spaced to block site lines along the fence adjacent to the courts and become less dense to allow views into the facility where the fence is away from the courts.

Athletic and public entrances and exits would be provided at the south side of the site off Bancroft Way; a second exit gate would be on the north side of the site with direct access from Oxford Street. A linear paved pathway running north-south between the entrances would extend through the site, in a similar alignment to the existing paved path that extends through the site to the immediate west of Edwards Stadium. This path would separate the volleyball courts at the west from the stadium's stairs and spectator seating areas at the east. Spectator seating will consist of flat and berm synthetic turf, installed in rectangular areas directly adjacent to the historic stadium stairs and to the north of the northernmost court. Rincon confirmed via correspondence with the project design team that the berm seating will not touch or physically interface with the stadium's historic concrete stairs. Court lighting would be provided by six light poles at the perimeter of the courts. The light poles are expected to be 50 feet tall. Site or building mounted lighting would be provided at the athlete entry. All exterior lighting would be angled downward or have cut-offs to control exterior light pollution. A 40-foot flagpole would also be provided. A scoreboard approximately 30 feet wide by 10 feet tall would be located at the north end of the courts and spectator lawn.

Figure 1 Project Location



Basemap provided by National Geographic Society, Esri, and their licensors © 2024. Oakland West Quadrangle. T01S S04W S01, 02.
The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

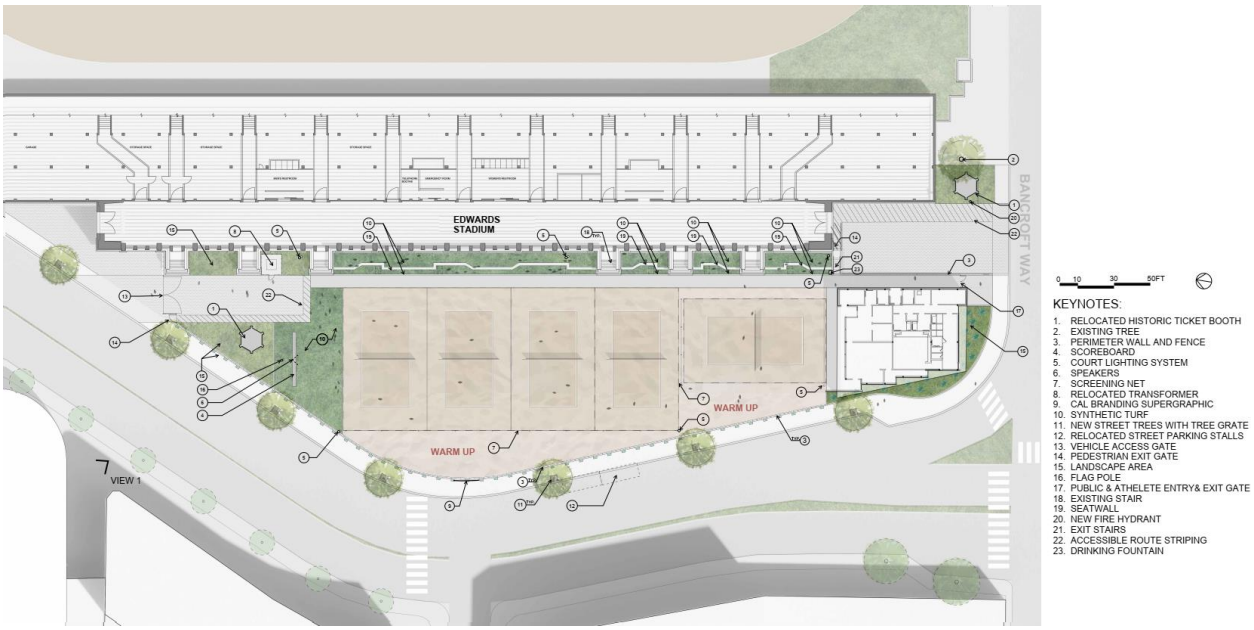
23-14700 CR
CRFig 2 Project Site Topo

Figure 2 Project Site

Imagery provided by Microsoft Bing and its licensors © 2024.

23-14700 CR
CRFig 2 Project Site

Figure 3 Conceptual Design Site Plan



The Team Building is proposed as a one-story, horizontally proportioned pavilion (approximately 50 feet-by-60 feet), containing locker rooms, restrooms, coaches' offices, and storage spaces at the southwest corner of the site. The building is conceptualized with a mass timber or hybrid mass timber structure and a primarily wood exterior, reinforced hollow metal exterior doors, and a flat roof.

The two historic, disused ticket booths associated with Edwards Stadium would be retained and relocated within the project site to accommodate aerial fire apparatus access. Low-maintenance planting zones will be installed around the relocated ticket booths and between the sidewalk and new Team Building.

Methods

Background and Archival Research

Rincon completed background and archival research in support of this assessment in March to June 2024. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were utilized to develop an understanding of the project site and its context:

- Historical aerial photographs accessed via University of California, Santa Barbara Library FrameFinder
- Historical USGS topographic maps
- Historical newspaper clippings obtained from Newspapers.com, ProQuest Historical Newspapers.com, and the California Digital Newspaper Collection
- Various historical records via Ancestry.com
- National Register of Historic Places nomination for Edwards Stadium
- UC Berkeley Long Range Development Plan Update (LDRP)

- *Historical Resources Technical Report, UC Berkeley Long Range Development Plan Update*, Architectural Resources Group (ARG), March 2021
- LRDP Prehistoric Cultural Sensitivity Overlay Analysis map (confidential)

California Historical Resources Information System Records Search

On May 1, 2024, Rincon received California Historical Resources Information System (CHRIS) records search results from the Northwest Information Center (NWIC) (Attachment A). The NWIC is the official state repository for cultural resources records and reports for the county in which the Proposed Project falls. The purpose of the records search was to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a 0.5-mile radius surrounding it. Rincon also reviewed the NRHP, the California Register of Historical Resources (CRHR), the California Historical Landmarks list, and the Built Environment Resources Directory (BERD). Additionally, Rincon reviewed the Archaeological Determination of Eligibility (ADOE) list.

Sacred Lands File Search

Rincon contacted the Native American Heritage Commission (NAHC) on June 13, 2024, to request a search of the Sacred Lands File (SLF), as well as a contact list of Native Americans culturally affiliated with the project site vicinity (Attachment B).

Field Survey

Rincon Architectural Historian Josh Bevan conducted a built environment survey of the project site on June 19, 2024. The built environment resources within the project site, including buildings, structures, and landscape elements, were visually inspected. Site characteristics and conditions were documented using notes and digital photographs which are maintained at our Rincon Oakland office.

Because the entire project site is developed with a surface parking lot with no ground exposure, an archaeological field survey was not conducted.

Findings

Known Cultural Resources Studies

The CHRIS records search and background research identified 10 cultural resources studies within 0.5 mile of the project site (Attachment A). Of these studies, one includes a portion of the project site and none include areas directly adjacent to the project site. Known studies that occurred within or adjacent to the project site are discussed in further detail below.

Study S-46434

In November 2014, JRP Historical Consulting, LLC prepared a historic resources report for the proposed City of Berkeley Hearst Avenue Complete Streets Project, located on Hearst Avenue between the intersections of Gayley Road/La Loma Avenue at the east and Henry Street at the west end, and including the UC Berkeley campus at the south side of the project. JRP's report, completed to support the project's compliance with the environmental review process for CEQA and Section 106 of the National Historic Preservation Act identified five properties listed in the NRHP, five properties determined eligible for listing in the NRHP, two properties determined ineligible for the NRHP, 10 properties listed as City of Berkely Historic Landmarks, 32 age-eligible properties with no known evaluation status, 15 properties less than 50 years old, and two vacant parcels in the project area.

Though the study included several buildings on the UC Berkeley campus, it appears to have focused on the campus' northern border and it did not include the current project site.

LRDP Prehistoric Cultural Sensitivity Overlay Analysis

A review of the Prehistoric Cultural Sensitivity Overlay Analysis map (confidential) showed that the project site is characterized as Moderately Low to Moderately High, indicating a low to moderate probability to encounter prehistoric subsurface resources during ground disturbing activities.

Known Cultural Resources

The CHRIS records search and background research identified 118 cultural resources within a 0.5 mile radius of the project site. The resources consist of 110 historic-period built environment resources. Although not identified in the CHRIS search, background research revealed that the project site is immediately west of Edwards Stadium, which is listed in the NRHP, and explained in more detail below.

No precontact or historic archaeological cultural resources were identified in the project site. Resources recorded in the general vicinity of the project site, within 2,500 feet, are discussed in further detail below.

Resource P-01-000085 (CA-ALA-308)

In 1907 an adult burial was found by the Faculty Club building by workers digging a trench for a water pipe. The skeleton was said to have bene laid on top of a bed of shells, approximately one foot thick and twenty feet long. This resource is located approximately 2,500 feet to the east of the project site.

Resource P-01-005427 (CA-ALA-618/H)

The archeological resource recorded is a human burial discovered in 1955. At the time of the resource's recordation a carport was being constructed on the site. The site currently contains a building constructed in 1904 and previously evaluated and recommended eligible for listing in both the NRHP and CRHR. The resource record includes a newspaper clipping from 1955 reporting that fully intact Native American remains were identified a few inches below ground surface and remarks that the individual could be affiliated with any number of Native American villages that lined Strawberry Creek (Bruce 1979). No other information regarding the nature of the burial is available. This resource is located approximately 275 feet to the west of the project site.

Resource P-01-010538 (CA-ALA-607)

In the mid-1950s, a flexed Native American burial was exposed during ground clearance of a property identified as the old Kellogg School site. However, except for an estimated site location, no further documentation is available in the CHRIS archives. The burial site appears to be located two blocks south of the project site along what is present day Center Street; the area appears to be located near what was once the northern bank of Strawberry Creek. This resource is located approximately 150 feet to the north of the project site.

Resource P-01-010663 (CA-ALA-615)

This resource is a shell deposit recorded in 2007 and located adjacent to the bank of Strawberry Creek to the west of Haviland Hall. This resource is located approximately 2,000 feet to the northeast of the project site.

Resource P-01-010578

This resource was reported during the construction of the Doe Library building's foundation in 1906 as "mysterious markings," a "Grid" of ancient origin by University of California professor Joseph Voyle. This resource had a claimed dimension of approximately 1200 feet-by-1200 feet. This resource is located approximately 2,000 feet to the northeast of the project site.

Archaeological resources within 0.5 miles of the site included one multi-component archaeological resource and four Native American archaeological resources (Attachment A). No archaeological resources are recorded within or adjacent to the project site. However, one Native American burial (P-01-005427) was noted approximately less than 500 feet from the project site.

Previous Evaluations of the Project Site

As described above, the project site is located within the boundaries of Edwards Stadium, which was constructed in 1932 and was listed in the NRHP in 1993. The resource boundary for the NRHP-listed property includes the entirety of the stadium, its frontage along Bancroft Way, areas to the north to Cross Campus Road (now Frank Schlessinger Way) and areas to the west of the stadium's frontage along Fulton/Oxford Street, including the project site.

The nomination describes:

> Edwards Stadium, designed by Warren C. Perry with the assistance of Stafford L. Jory and completed in 1932, appears to be eligible for the National Register under Criteria A and C in the areas of Recreation and Architecture. It is significant in different areas at the local and state levels for the period of significance 1932-1943. Under Criterion C, this [property] "embodies the distinctive characteristics of a type," it "represents the work of a master," and it possesses "high artistic values." This was the largest, most expensive, and most ambitious stadium built for track and field in America in its day, it is a contributing element in an important campus plan, it is the best-known work of two distinguished architects long associated with the Department of Architecture at the University of California, and it is a sophisticated example of planning and the Moderne style. Under Criterion A, it is associated with the track and field program of the University of California and its many distinguished athletes and teams including many Olympic medal winners, and as the site of numerous world records.[3]

Background research also revealed that the project site was listed in the historical resources technical report prepared by ARG in March 2021 to support the LRDP Update. It confirmed that Edwards Stadium is listed in the NRHP and is also a listed City of Berkeley Landmark.[4]

Aerial Imagery and Historical Topographic Maps Review

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the project site. Historical topographic maps from 1895 to 1932 depict the project site as undeveloped land on the west side of the University of California campus. Nearby development present during this period included several buildings to the southeast of the project site, along Bancroft Way and campus development generally east of the project site. The historical topographic maps note Strawberry Creek, which traverses north of the project side and continues westward outside the campus. The area surrounding the campus during this period included

[3] Corbett, National Register of Historic Places Nomination Form: Edwards Stadium, 1993

[4] ARG, *Historical Resources Technical Report, UC Berkeley Long Range Development Plan Update*, March 2021.

commercial and residential development, including commercial development along the Shattuck Avenue corridor to the west of campus (USGS 2024).

The first available historical aerial image from 1939 confirms that Edwards Stadium was constructed by this time, and the formerly adjacent buildings along Bancroft Way were demolished for the construction of the baseball field to the east. The project site, west of the stadium, was developed with a single building fronting Fulton Street, with surrounding walkways and landscaped areas to the north and south (FrameFinder 1939). By this time, the campus was more developed with additional buildings to the north and east of the stadium. The next available historical aerial from 1958, shows the project site remained largely the same, though some landscaping had matured by this time (FrameFinder 1958). Historical aerials from 1965 and 1980 depict the same conditions on the project site with some increased campus development east of the project site, along Bancroft Way (FrameFinder 1965, 1980). By 2002, large portions of the project site's landscaping had been replaced with a surface parking lot. The project site and surrounding area remained substantially the same until approximately 2019 when the building on the project site was demolished. Since that time, the area of the former building has been used for additional surface parking. The project site and surrounding area have remained the same since that time (GoogleEarth 2024).

Sacred Land File Search

On July 12, 2024, the NAHC responded to Rincon's Native American contact list and SLF request, stating that the results of the SLF search were positive. See Attachment B for the NAHC response, including Tribal contacts list.

Survey Results

Built Environment Resources

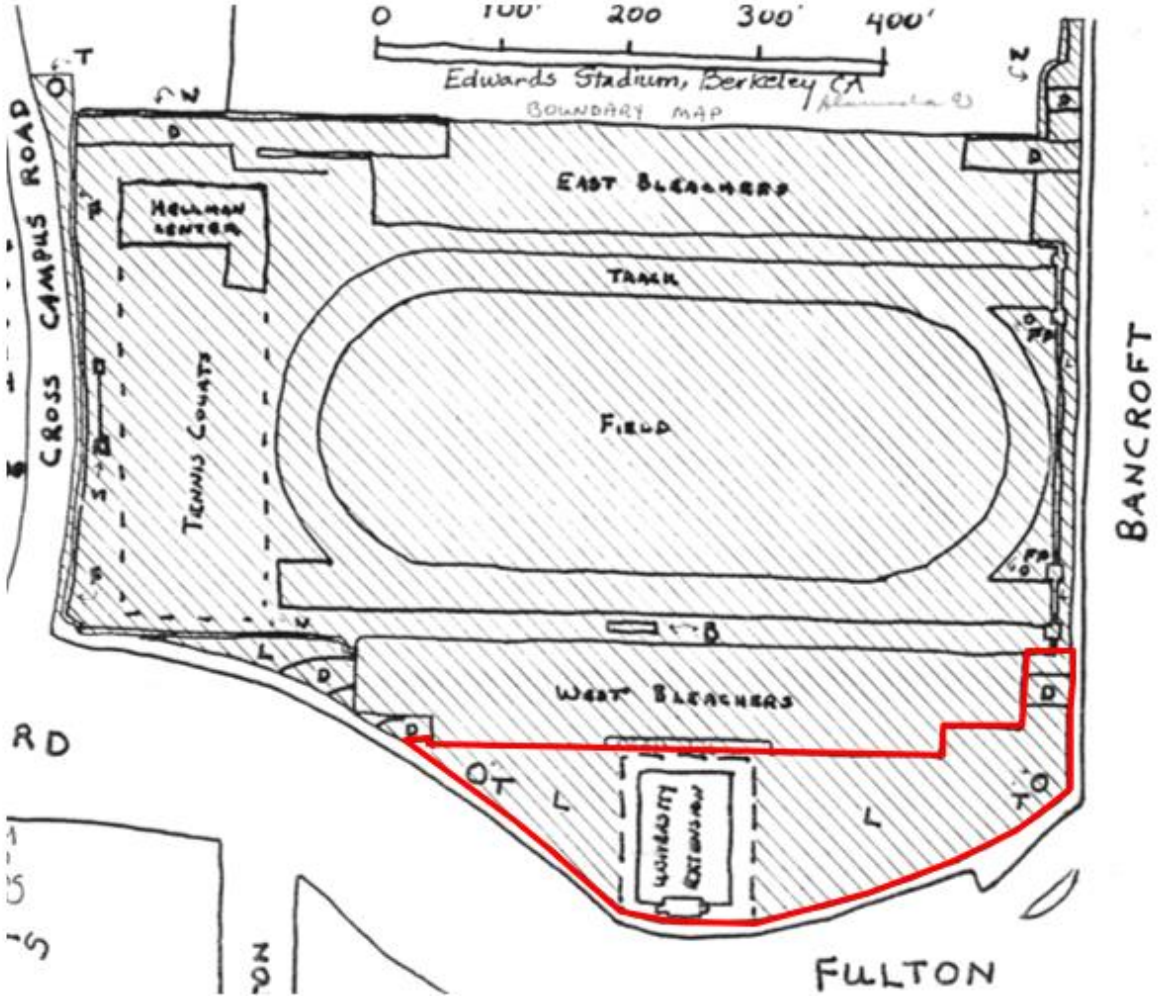
The following section summarizes the results of all background research and fieldwork as they pertain to built environment resources that may qualify as historical resources. The field work and background research resulted in the identification of one historic-age property within the project site, Edwards Stadium. As described above, the building is listed in the NRHP and is therefore a historical resource as defined in the CEQA Guidelines.

Physical Description

Edward Stadium is a reinforced-concrete, track and field stadium with cast concrete ornament in the Moderne style. The stadium's footprint is generally rectangular, while the facility occupies an irregular site that slopes downward from east to west. The stadium is an enclosed facility with a central lawn surrounded by an oval track. The track is flanked by reinforced-concrete bleachers at the east and west and enclosed at the south end by a concrete wall that borders Bancroft Way. The field extends to the north from the ends of the bleachers with concrete walls and is closed at the north end by a fence that borders the Hellman Center tennis facility, located between the north end of the stadium and Frank Schlessinger Way. Stow Plaza, located to the immediate northeast of Edwards Stadium is accessed from Frank Schlessinger Way provides access to Edwards Stadium's northeast corner. The east side of Edwards Stadium (east bleachers) abuts the Stu Gordon Stadium (baseball) and the Recreational Sports Facility (RSF) Garage parking structure. The Hellman Center, Stow Plaza, Stu Gordon Stadium, and the RSF Garage are noncontributing to Edwards Stadium's historic significance.

The resource boundary for the nominated property included the entirety of the stadium, its frontage along Bancroft Way, areas to the north to Cross Campus Road (now Frank Schlessinger Way) and areas to the west of the stadium's frontage along Fulton/Oxford Street (Figure 4).

Figure 4 Designation Boundary of Edwards Stadium. Project Site Boundary in Red.



Contributing and non-contributing elements included in the nomination are identified below (Table 1).

Table 1 Contributing and Non-Contributing Elements

Element	Contributing	Non-Contributing
Buildings		
	3 Ticket Booths*	Tennis Building (Hellman Center)
Sites		
	Central field (stadium interior) and landscaped areas (stadium interior and exterior)*	
Structures		
	East bleachers (stadium interior)	Tennis center

Element	Contributing	Non-Contributing
	West bleachers (stadium interior)	Track (stadium interior)
	Walls (stadium interior)	
	Fence (stadium interior)	
	Scoreboard frame (stadium interior)	
Objects		
	2 Flagpoles (stadium interior)	
	Memorial Bench (stadium interior)	

*denotes elements in Project Area

Of the contributing elements identified above, two of the ticket booths and remnants of site landscaping are located within the project site. The NRHP nomination notes the west side of the stadium's site resulted from the extension of Oxford Street at angle to join Fulton Street at the time the stadium was built. In 1964, Fulton-Oxford Street was widened, resulting in the modification of its alignment and a reduction in area at the southwest of the stadium site, near the corner of Bancroft Way and Fulton Street. As stated in the nomination, this area between the stadium's west bleachers and Fulton/Oxford Street featured:

> "a park-like strip of land that was landscaped as part of the Stadium development [in 1932], except for a parcel of land in the center occupied by a building [that as of 1992 housed] the University Extension [which was demolished in 2018]. Its landscaping consists of paths for access to the stadium, and trees around lawns. The original configuration of paths, the lawn areas, and some of the trees remains visible, although the western edge has been moved slightly to east, especially at the south end where the widened street curves into Bancroft [Way]. A planting scheme for shrubs along the base of the west side of the stadium is no longer in evidence."

The site visit on June 19, 2024, confirmed that several changes have occurred in this area of the stadium since the 1993 nomination. Changes include the demolition of the University Extension Building from the area now containing a surface parking lot at the center of the project site in 2018. Since 2018, the former site of the University Extension Building has been paved over with asphalt. Landscaped areas to the north and south of the former building site appear to have been reduced in size since their original construction and now feature mature trees. Asphalt paving has also been extended to most areas abutting the west bleacher stairs, where grass appears to have been in place historically. Overall, the landscaping within the western perimeter of the stadium site does not strongly convey its appearance relative to Edwards Stadium's period of significance. As such, it does not appear to contribute to the stadium's significance. Additional observations include the presence of fabric wrap on the west bleacher's columns, which appears to be related to concrete repair or spalling abatement (Figure 5 through Figure 8).

Figure 5 Edwards Stadium, Facing Southeast

Figure 6 West Elevation of Stadium, Facing Northeast

Figure 7 Landscaping at Edwards Stadium, Facing Northwest

Figure 8 Disused Historic Ticket Booth at South End of Project Site, Facing Northeast

CHARACTER-DEFINING FEATURES

The intent of the Standards is to provide for the long-term preservation of a property's significance through the preservation of its historic materials and features. These historic materials and features are commonly referred to as character-defining features and are indispensable in a historic property's ability to convey the reasons for its historical significance. To ensure a proposed project's compliance with the Standards, a historic property's character-defining features should therefore be identified and preserved as part of the final design.

According to Preservation Brief 17, *Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character*, there is a three-step process to identifying character-defining features.[5] Step 1 involves assessing the distinguishing physical aspects of the exterior of the building as a whole, including its setting, shape and massing, orientation, roof and roof features, projections, and openings. Step 2 looks at the building more closely—at materials, trim, secondary features, and craftsmanship. Step 3 encompasses the interior, including individual spaces, relations or sequences of spaces (floor plan), surface finishes and materials, exposed structure, and interior.

As described above, Edwards Stadium is significant as property that embodies the distinctive characteristics of a type, represents the work of a master, and it possesses high artistic values, and is associated with the track and field program of the University of California and its many distinguished athletes and teams.

As such, its character-defining features relate to its association with the stadium's historic athletic programming and its architectural characteristics present during the period of significance 1932-1943. These include the following:

- Reinforced-concrete construction
- Massing, including distinctive angular portions
- East and west Bleacher structures and central field
- Scoreboard, flagpoles, and memorial bench
- North and south concourse gates beneath west bleachers
- Cast concrete ornamentation with Moderne styling
- Concrete wall with pylons, obelisks, and paneling that encloses field at south end of stadium
- Concrete stairs extending westward from entrance gates along the west side of stadium
- Wood gates at concourse's vehicle and pedestrian (stair) entrances
- Ticket Booths at northwest, southwest, and southeast corners of stadium

[5] Lee H. Nelson, *Architectural Character: Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character*, Preservation Brief No. 17. U.S. Department of the Interior, National Park Service, Technical Preservation Services.

Figure 9 Character Defining Features Adjacent to Project Site

Concrete ornamentation base, panel, and fluted pilaster detailing

Concrete ornamentation screens along west bleachers

Concrete ornamentation detailing along top of west bleachers structure

Concrete stairs and concourse gates

Angular massing of south end of west bleachers

Concrete base detailing continued at south end of west bleachers

Impacts Analysis and Conclusions

The impact analysis included here is organized based on the cultural resources thresholds included in CEQA Guidelines Appendix G: Environmental Checklist Form:

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historical resources. To more clearly differentiate between archaeological and built environment resources, we have chosen to limit analysis under Threshold A to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Threshold B.

Historical Built Environment Resources

Impacts to a historical resource occur when there is a substantial adverse change in the significance of a resource such that it is materially impaired. Material impairment is defined as demolition or alteration “in an adverse manner [of] those characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California

Register." Under Section 10564.5 of the CEQA Guidelines, a project that is found to conform with the Standards is generally found to not result in significant impacts to historical resources under CEQA.

Secretary of the Interior's Standards Review

The Standards establish professional standards and provide guidance on the preservation and protection of historic properties. The Standards make broad-brush recommendations for maintaining, repairing, and replacing historic materials, as well as designing new additions or making alterations. They cannot, in and of themselves, be used to make essential decisions about which features of a historic property should be saved and which might be changed. Rather, they provide philosophical consistency to the work. There are Standards for four distinct, but interrelated, approaches to the treatment of historic properties: preservation, rehabilitation, restoration, and reconstruction. Following the guidance of the Standards, the Rehabilitation Standards are most appropriate for the current project because of the building's current physical condition and the work proposed.

The Secretary's Standards for Rehabilitation state:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in a such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

As detailed above, the field survey and background research identified one qualifying historical resource in the project site, Edwards Stadium. The following presents an analysis of the Proposed Project's conformance with the Standards.

Rehabilitation Standard No. 1

A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

As described above, the proposed project would demolish existing landscaped areas at the north, south, and west perimeter of the project site and relocation of two historic ticket booths within the project site to accommodate the construction of five proposed sand volleyball courts, and associated features including berm seating and a Team Building. Five sand volleyball courts, ball screens, berm spectator seating, and a related one-story Team Building would be built to the west of Edwards Stadium. The two historic ticket booths would be relocated to accommodate aerial fire apparatus access.

Overall, the project would not result in a change of use of Edwards Stadium; the stadium would continue to serve as a track and field facility with no changes proposed to the stadium's structure, character-defining architectural features, including those immediately adjacent to the project site (west bleachers, stairs, concrete detailing).

The proposed new, additional use for volleyball courts would require minimal change to the character defining characteristics of the building and its overall site and environment. Landscaping proposed to be removed represents remnants of historic landscaping that have been periodically modified since 1932 and do not appear to convey their historic design to a high degree. The contributing ticket booths to be relocated would be situated within a similar setting adjacent to the stadium, with one at the north end of the project site and one at the south. Overall, their ability to contribute to the significance of Edwards Stadium would remain, as they would feature a similar spatial relationship with the stadium and continue to be contributing elements to the historical resource.

As further detailed below, the proposed volleyball courts and Team Building would be physically separated from the stadium, such that the stadium's mass, angular forms of the west bleachers, and exterior features adjacent to the project site would not be altered and would continue convey the site's historic character. Therefore, Rehabilitation Standard No. 1 is satisfied.

Rehabilitation Standard No. 2

The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

The historic character of Edwards Stadium is comprised of the physical elements that represent its significance as a track and field stadium constructed of reinforced-concrete and detailed in the Moderne style. As originally designed, the stadium's west bleachers and entrance stairs faced a landscaped, irregularly shaped site to the west with a nonextant university building at center. Though identified as a contributing element to the property, the landscaping in this area has undergone several alterations since it's construction in 1932, including demolition of the building that stood in at the center of the project site in 2018, and an overall reduction in landscaped area with additional non-historic paved areas, including surface parking areas. Guidance in National Register Bulletin 18: *How to Evaluate and Nominate Designed Historic Landscapes*, acknowledges the inherently temporary nature of plant life stating, that integrity of landscapes may be enhanced "through maintenance, replanting, or other reconstruction procedures."[6] Though the new volleyball use would remove some historic plant materials, the extant materials are not character-defining , and it would successfully

[6] J. Timothy Keller and Genevieve P. Keller, *National Register Bulletin 18: How to Evaluate and Nominate Designed Historic Landscapes,* U.S. Department of the Interior, National Park Service, Interagency Resources Division.

improve the historic integrity by replacing non-historic parking area, including with proposed new landscaping and berm seating, which would also reintroduce plant life where it has since been lost.

Additionally, the stadium's character-defining features, as described above, including its reinforced-concrete construction, stairs and entrances, and cast concrete ornamentation would to be retained without modification as part of the proposed scope of work. The historic ticket booths to be relocated within the project site are proposed to be retained and would have a similar spatial relationship to the stadium when their relocation. Mitigation would ensure that the ticket booths would not be damaged during their relocation. Furthermore, the overall spatial relationship between the stadium and the adjacent area to the west would remain largely the same and retain the same visual rhythm of generally open space adjacent to the enclosed walls of the stadium and the area west of the stadium would continue to include landscaping, thereby retaining the site's overall historic character. Therefore, Rehabilitation Standard No. 2 is satisfied.

Rehabilitation Standard No. 3

Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, will not be undertaken.

The proposed scope of work does not include the addition of features that appear to be falsely historic or conjectural. Rehabilitation Standard No. 3 does not apply.

Rehabilitation Standard No. 4

Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

Edwards Stadium's period of significance is 1932 to 1943. Typical of a university campus facility, the stadium has undergone some changes to adapt to changing needs and regular maintenance, including updates to the adjacent, non-contributing Hellman Tennis Center. However, no changes that occurred to the stadium or its site after 1943 have gained significance. Therefore, the project is compliant with Rehabilitation Standard No. 4.

Rehabilitation Standard No. 5

Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

The only historic character-defining features of the property to be altered by the project are the historic ticket booths proposed for relocation within the project site. The materiality, form, and overall design of the ticket booths would remain intact, while they would be relocated within the site and retain a similar spatial relationship to the stadium and continue to convey their historic character to be contributing elements to the historical resource. Mitigation would ensure they would not be damaged during the relocation. Therefore, the project is compliant with Rehabilitation Standard No. 5.

Rehabilitation Standard No. 6

Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

No additional work to Edwards Stadium is proposed as part of this project. Work undertaken as part of this project would not include the repair or replacement of historic features. Rehabilitation Standard No. 6 does not apply.

Rehabilitation Standard No. 7

Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

The proposed scope of work does not include chemical or physical treatments. Rehabilitation Standard No. 7 does not apply.

Rehabilitation Standard No. 8

Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

The proposed scope of work includes ground-disturbing activities. The project is subject to standard provisions related to the potential disturbance of archeological resources to comply with CEQA. A project that complies with such standard provisions would be in conformance with Rehabilitation Standard No. 8.

Rehabilitation Standard No. 9

New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

The construction of volleyball courts and the Team Building is new construction within the boundaries of Edwards Stadium. As noted under Standard No. 1, the proposed volleyball courts and Team Building would be separated from the stadium, and the stadium's mass, angular forms of the west bleachers, and exterior features adjacent to the project site would not be altered and proposed berm seating would not touch the exterior stadium stairs.

Although the current setting of the site would be altered, the volleyball courts and Team Building would be subordinate to the stadium in terms of scale and massing, consistent with guidance in Preservation Brief 14, *New Exterior Additions to Historic Buildings: Preservation Concerns*[7]. The proposed new construction is clearly differentiated from the historic construction of Edwards Stadium and its associated ticket booths. The retaining wall for the volleyball courts would be rendered in textured concrete and new concrete on the site would be integrally colored, and would be compatible with the historic smooth concrete and cast concrete detailing of Edwards Stadium. The volleyball courts and related berm seating areas would be set on level ground, achieved by regrading and supported by the concrete retaining wall.

Additionally, the proposed design is consistent with guidance provided in the Standards that advises, "locating new construction far enough away from the historic building, when possible, where it would be minimally visible and would not negatively affect the building's character, the site, or setting." Although the new retaining wall would reduce visibility of the base of the stadium along the sidewalk on the east side Fulton/Oxford Street, the new construction would be concentrated toward the center

[7] Anne E. Grimmer and Kay D. Weeks, *New Exterior Additions to Historic Buildings: Preservation Concerns,* Preservation Brief No. 14. U.S. Department of the Interior, National Park Service, Technical Preservation Services.

of the project site and set at a height that would not significantly obscure visibility of the stadium's exterior. Visibility of the stadium's character-defining features from the north end of the project site may be increased given the reduction in tree coverage.

At the south end of the site, the Team Building is proposed as a one-story pavilion timber construction building with a flat roof at the southwest corner of the site. Consistent with National Park Service (NPS) guidance, the building would be sufficiently separated from the stadium and subordinate in scale such that it would not significantly reduce visibility of the stadium[8]. Its materials, massing, and detailing appear to be clearly compatible and differentiated from those of the stadium and its ticket booths such that new construction is clearly differentiable from the historic. Overall, this approach results in new construction that is secondary to the historic building and does not detract from its significance, as recommended by the Standards. The relocated ticket booths would retain similar proximity and spatial relationships to the stadium. Therefore, the project is compliant with Rehabilitation Standard No. 9.

Rehabilitation Standard No. 10

New additions and adjacent or related new construction would be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The construction of the volleyball courts and Team Building would occur on areas of the site that are currently paved with asphalt or that contain remnant landscaping. If removed in the future, these areas could be returned to a similar state with repaving or new landscaping without impairing Edwards Stadium's integrity, as the project proposes no direct alteration of the stadium itself. Furthermore, the historic ticket booths could be reinstated to their original location if needed. Therefore, the project is compliant with Rehabilitation Standard No. 10.

Historical Built Environment Resources Summary

As detailed above, the Proposed Project as designed complies with the Standards, thereby avoiding an impact to a historical resource pursuant to Section 15064.5(b)(3) of the CEQA Guidelines. Although the proposed relocation of the ticket booths complies with the Standards, the methods by which the structures would be relocated has yet to be determined. To ensure the relocation will not damage the ticket booths, Rincon recommends the following measure to consult with a professional with experience in moving historic buildings and structures. With adherence to this measure, impacts to historical resources would be ***less than significant with mitigation***.

Recommended Mitigation

CUL-1 – Building Relocation Plan

Prior to the initiation of any site or building demolition of construction activities, a moving/structural engineering company with demonstrated experience in the relocation of historic buildings shall be contracted for the work. The relocation shall be planned in accordance with provisions provided in the California Historic Building Code. The moving/structural engineering company shall consult with a qualified architectural historian who meets the Secretary of the Interior's Professional Qualifications Standards to confirm their proposed relocation plan and proposed methods for relocation are consistent with professional best practices. Bracing and securing the buildings for the move must be undertaken in a way that avoids any damage to their historic materials. In case of inadvertent damage from the move, the buildings should be documented using photogrammetry, lidar, or other similar

[8] Grimmer and Weeks, p. 5.

technology that will provide measured drawings prior to the move to inform repair work, if needed. The Campus Architect shall review and approve the relocation plan prior to the initiation of site or building demolition of construction activities and after construction shall verify that the relocation was completed in compliance with the approved relocation plan.

Historical and Unique Archaeological Resources

This assessment did not identify any archaeological resources or archaeological deposits in the project site. The lack of surface evidence of archaeological materials does not preclude their subsurface existence. Additionally, though the records search did not identify any archaeological resources within or immediately adjacent to the project site and there is evidence of previous disturbance due to development and landscaping, the project site is still considered generally sensitive for containing subsurface Native American archaeological resources due to the Moderately Low to Moderately High sensitivity recorded in the LRDP Prehistoric Cultural Sensitivity Overlay Analysis map, the positive SLF search, and proximity to freshwater sources (i.e. Strawberry Creek). Additionally, three Native American burials have been recorded less than 2,500 feet from the project site, including one less than 500 feet from the project site, increasing its sensitivity for Native American archaeological resources and human remains. Additionally, the long-standing historic use of the area increase the sensitivity of the project site for containing subsurface historic-period archaeological resources. Given the site's archaeological sensitivity, Rincon recommends mitigation measures for a worker's environmental awareness program, archaeological and Native American monitoring, and unanticipated discovery procedures during construction. With adherence to these measures, Rincon recommends a finding of ***less than significant impact with mitigation for archaeological resources*** under CEQA.

Recommended Mitigation

UC Berkeley shall implement the following steps to ensure impacts to archaeological resources will be less than significant during ground-disturbing activities.

- Prior to soil disturbance, UC Berkeley shall confirm that contractors have been notified of the procedures for the identification of federal- or State-eligible cultural resources, and that the construction crews are aware of the potential for previously undiscovered archaeological resources or tribal cultural resources on-site, of the laws protecting these resources and associated penalties, and of the procedures to follow should they discover cultural resources during project-related work.
    - If a resource is discovered during construction (whether or not an archaeologist is present), the following measures shall be implemented:
    - All soil-disturbing work within 35 feet of the find shall cease.
    - UC Berkeley shall contact a qualified archaeologist to provide and implement a plan for survey, subsurface investigation as needed to define the deposit, and assessment of the remainder of the site in the project area to determine whether the resource is significant and would be affected by the project.
    - Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist.
    - If the resource is a tribal cultural resource, the consulting archaeologist, approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission, shall consult with the appropriate tribe to evaluate the significance of

the resource and to recommend appropriate and feasible avoidance, testing, preservation or mitigation measures, in light of factors such as the significance of the find, Proposed Project design, costs, and other considerations.

  - If avoidance is infeasible, other appropriate measures (e.g., data recovery) may be implemented.
  - If the resource is a non-tribal resource determined significant under CEQA, a qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant.
  - The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources if appropriate.
  - The report shall be submitted to the City of Berkeley, California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required.

- Ground-disturbing activities shall be monitored from the outset. Monitoring shall occur for soil removal, parcel grading, new utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. If the resources are tribal, archaeological monitoring must be undertaken by a qualified archaeologist approved by UC Berkeley in consultation with the appropriate tribe as determined by the Native American Heritage Commission or the appropriate tribe, who is familiar with a wide range of prehistoric archaeological or tribal remains and is conversant in artifact identification, human and faunal bone, soil descriptions, and interpretation. Based on project-specific daily construction schedules, field conditions, and archaeological observations, full-time monitoring may not be warranted following initial observations.

Human Remains

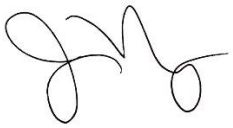
No human remains are known to be present within the project site. However, the discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, Rincon recommends a finding of less than significant impact to human remains under CEQA.

Should you have any questions or comments regarding this report, please do not hesitate to contact me at 510-447-5859 or jbevan@rinconconsultants.com or JulieAnn Murphy at 925-326-1159, or jmurphy@rinconconsultants.com.

Sincerely,

Rincon Consultants, Inc.

Josh Bevan
Architectural Historian



JulieAnn Murphy
Architectural Historian Project Manager

Steven Treffers, M.H.P.
Cultural Resources Director

Attachment A

CHRIS Results

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-000445	Submitter - ARS 76-73	1977	Katherine Flynn	Preliminary Archaeological Reconnaissance of 5 proposed locations for the new Engineering Building, University of California, Berkeley - ARS 76-73 (letter report)	Archaeological Resource Service	
S-000779	Voided - S-12958	1977	David Chavez	Preliminary Cultural Resources Assessment of the East Bay Municipal Utility District (EBMUD) Wet Weather Facilities/Overflow Project Facilities Sites, Alameda and Contra Costa Counties, California		01-000082, 01-000086, 01-000087, 01-000088, 01-000089, 01-000090, 01-000097, 01-000098, 01-000099, 01-000233, 01-010839, 07-000046, 07-000178, 07-000179, 07-000180
S-000779a		1979	David Chavez	Supplement to Preliminary Cultural Resources Assessment of the East Bay Municipal Utility District (EBMUD) Wet Water Facilities/Overflow Project Facilities Sites, Alameda County, California		
S-001972		1978	Colin I. Busby and James C. Bard	An Archaeological Assessment of Nine Proposed Park Development Locations, City of Berkeley, California	Basin Research Associates	
S-030787		2005	Benjamin Ananian	2802 Shattuck Avenue, Berkeley, Alameda County (letter report)	Ananian Associates	
S-038249	OHP PRN - FTA051227A; Voided - S-31825; Voided - S-38456; Voided - S-38767; Voided - S-38768	2010	Suzanne Baker	Historic Property Survey Report, the Alameda County Transit District's East Bay Bus Rapid Transit Project in Berkeley, Oakland, and San Leandro	Archaeological/Historical Consultants	01-000026, 01-000031, 01-000042, 01-000091, 01-000092, 01-003856, 01-005348, 01-005593, 01-005594, 01-005618, 01-005628, 01-010520, 01-010530, 01-010531, 01-010535, 01-010538, 01-010600, 01-010690, 01-010691, 01-010692, 01-010693, 01-010694, 01-010695, 01-010696, 01-010697, 01-010698, 01-010699, 01-010700, 01-010701, 01-010808, 01-011577
S-038249a		2010	Suzanne Baker	Addendum to Positive Archaeological Survey Report for the Alameda County Transit District's East Bay Bus Rapid Transit Project in Berkeley, Oakland, and San Leandro, California	Archaeological/Historical Consultants	
S-038249b		2010	Suzanne Baker	Addendum Historic Property Survey Report, the Alameda County Transit Project in Berkeley, Oakland, and San Leandro	Archaeological/Historical Consultants	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-038249c		2010	Suzanne Baker	Second Addendum to Positive Archaeological Survey Report for Alameda County Transit District's East Bay Bus Rapid Transit Project in Berkeley, Oakland, and San Leandro, California	Archaeological/Historical Consultants	
S-038249d		2005	Suzanne Baker	Positive Archaeological Survey Report for the Alameda-Contra Costa Transit District's East Bay Bus Rapid Transit Project in Berkeley, Oakland, and San Leandro	Archaeological/Historical Constultants	
S-038249e		2006	Milford Wayne Donaldson and Leslie T. Rogers	FTA051227A; National Register of Historic Places Determination of Eligibility for Properties within the Area of Potential Effects for the Propsed AC Transit Bus Rapid Transit Project, Alameda County, California	California Office of Historic Preservation; U.S. Department of Transportation	
S-038249f		2005		Finding of Effect for AC Transit East Bay Bus Rapid Transit Project	JRP Historical Consulting	
S-040631		2013	Heidi Koenig	West of Hills Northern Pipelines Project, East Bay Municipal Utility District, Contra Costa and Alameda Counties, Cultural Resources Survey Report	Environmental Science Associates	07-000456, 07-002600, 07-004476, 07-004477
S-040631a		2019	Heidi Koenig	Supplement to the Cultural Resources Study for the East Bay Municipal Utility District, Wildcat Pipeline Improvement Project, El Cerrito	Environmental Science Associates	
S-046434		2015	Christopher McMorris	Historic Resources, City of Berkeley Hearst Avenue Complete Streets Project (letter report)	JRP Historical Consulting	01-005338, 01-005394, 01-005438, 01-005439, 01-005449, 01-005527, 01-005553
S-047147	Caltrans - 4-ALA STPL 5057(044)	2015	Christopher McMorris and Sunshine Psota	Historic Property Survey Report, Hearst Avenue Complete Street Project, Berkeley, California, STPL 5057(044)	JRP Historical Consulting, LLC; Holman & Associates	
S-047147a		2015	Sunshine Psota	Archaeological Survey Report for the Hearst Avenue Complete Street Project in Berkeley, Alameda County: STPL 5057(044)	Holman & Associates	
S-047147b		2015	Sunshine Psota	Extended Phase I Proposal for the Hearst Avenue Complete Street Project, Berkeley, Alameda County: STPL 5057(044)	Holman & Associates	
S-047147c		2015	Sunshine Psota	Results of Extended Phase I Investigations for Hearst Avenue Complete Street Project in Berkeley, Alameda County: STPL 5057(044)	Holman & Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-047747	OHP PRN - SBA_2014_0411_001	2010		Berkeley Iceland Historic Resource Evaluation, 2727 Milvia Street, Berkeley, California	Page & Turnbull	01-011462
S-047747a		2014	Carol Roland-Nawi and Eric J. Adams	SBA_2014_0411_001; Section 106 Consultation for Federal Guaranteed Loan for Improvements to Berkeley Iceland, 2727 Milvia Street, Berkeley, CA	Office of Historic Preservation; US Small Business Administration	
S-051845		2018	Daniel Shoup	Cultural Resources Technical Report, Adeline Corridor Specific Plan, Berkeley, California	Archaeological/Historical Consultants	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-01-000029	CA-ALA-000008	Resource Name - [none]	Site	Prehistoric	AP09	1949 (Pilling, [none])	S-007903, S-026071, S-053807
P-01-000085	CA-ALA-000308	Resource Name - Nelson's 308; Other - Burials at Faculty Club; Other - Burials at Men and Women's Faculty Club; Voided - P-01-010537 / CA-ALA-606; OHP PRN - 4101-0317-0000; OHP PRN - 4141-0647-0000	Site	Prehistoric	AP09; AP15	1907 (J.C. Merriam by Pilling, University of California, Berkeley); 2006 (Richard Schwartz, [none])	
P-01-005231		Resource Name - Anna Head's School for Girls; OHP Property Number - 012275; OHP PRN - NPS-80000795-0000; OHP PRN - 4701-0207-0000	Building	Historic	HP15	1979 (Lesley Emmington, Berkeley Architectural Heritage Association); 1979 (James P. Gibbon, Elaine Stone, [none])	S-053807
P-01-005394		Resource Name - Robert H. Wetmore House; OHP Property Number - 012438; OHP PRN - 4701-0370-0000; OTIS Resource Number - 415221	Building	Historic	HP02	1979 (Carson Anthony Anderson, Berkeley Architectural Heritage Association)	S-046434
P-01-005439		Resource Name - Delta Zeta Sorority; Other - Bacherlordon House; OHP Property Number - 012483; OHP PRN - 4701-0415-0000; OTIS Resource Number - 415266	Building	Historic	HP03	1978 (Sara Holmes Boutelle, Berkeley Architectural Heritage Association)	S-046434
P-01-005525		Resource Name - Adolf Miller House; Other - Ridge House; Other - 2420 Ridge Road; OHP Property Number - 012569; OTIS Resource Number - 415352; OHP PRN - 4701-0501-0000	Building	Historic	HP02	1977 (Gray A. Brechin, Berkeley Architectural Heritage Association)	
P-01-005553		Resource Name - Benjamin Ide Wheeler House; Other - New Bridge Foundation; OHP Property Number - 012597; OHP PRN - 4701-0529-0000; OTIS Resource Number - 415380	Building	Historic	HP02; HP03	1977 (Gray A. Brechin, Berkeley Architectural Heritage Association)	S-046434
P-01-010496		Resource Name - 1910 Hearst Street	Site	Prehistoric	AP16	2002 (Richard Schwartz, [none])	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-01-010578		Resource Name - South Hall, Berkeley; Other - Prehistoric Square	Other	Historic	AH16	2002 (Richard Schwartz, [none])	
P-01-005427	CA-ALA-000618/H	Resource Name - John C. Fitzpatrick House; OTIS Resource Number - 415254; Other - 2138 Kittredge Burial; OHP Property Number - 012471; Other - Pepper Tree Tea Room; OHP PRN - 4701-0403-0000	Building, Site, Element of district	Prehistoric, Historic	AP09; HP02	1979 (Anthony Buffington Bruce, Berkeley Architectural Heritage Association); 2004 (Richard Schwartz, [none]); 2015 (F. Maggi, L. Dill, S. Winder, Archives & Architecture, LLC)	S-049123
P-01-005438		Resource Name - Harris House; OHP Property Number - 012482; OHP PRN - 4701-0414-0000; OTIS Resource Number - 415265	Building	Historic	HP02	1977 (Brian Horrigan, Berkeley Architectural Heritage Association)	S-046434
P-01-010663	CA-ALA-000615	Resource Name - Shell West of Haviland Hall	Site	Prehistoric	AP16	2004 (Richard Schwartz, [none])	

Attachment B

Native American Outreach and SLF Results

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

July 12, 2024

JulieAnn Murphy
Rincon Consultants, Inc.

Via Email to: jmurphy@rinconconsultants.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, 23-14700 Cal Beach Volleyball Complex Project, Alameda County

To Whom It May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Amah Mutsun Tribal Band of Mission San Juan Bautista and the Northern Valley Yokut / Ohlone Tribe on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Murphy.Donahue@NAHC.ca.gov

Sincerely,

Murphy Donahue

Murphy Donahue
Cultural Resources Analyst

Attachment

Appendix C

Noise Assessment

Rincon Consultants, Inc.
66 Franklin Street, Suite 300
Oakland, California 94607
510-834-4455

RINCON CONSULTANTS, INC. SINCE 1994

January 3, 2025
Project No: 23-14700

Shraddha Navalli Patil, Ph.D.
UC Berkeley Capital Strategies
200 A&E Building
Berkeley, California 94720
Via email: shraddha@berkeley.edu
cc: alison.krumbein@ucop.edu

Subject: Noise Technical Memorandum for the Cal Beach Volleyball Complex Project University of California, Berkeley

Dear Ms. Navalli Patil:

Rincon Consultants, Inc. (Rincon) has prepared this technical memorandum to evaluate the potential noise and vibration impacts resulting from construction and operation of the proposed Cal Beach Volleyball Complex Project (herein referred to as "Proposed Project" or "Project"). Noise fundamentals and common definitions used in this memorandum are included in Attachment 1.

Project Location and Description

Project Location

The Proposed Project site is located in the City of Berkeley in Alameda County, California. It is situated approximately 0.9-mile north of Ashby Avenue (State Route [SR] 13) and 1.4 miles east of San Pablo Avenue (SR 123) and is bound to the east by Edwards Stadium and to the west by Oxford Street, which becomes Fulton Street along the Project site frontage. The Proposed Project site is part of the University of California (UC), Berkeley campus, which is organized into five zones: Campus Park, Hill Campus West, Hill Campus East, Clark Kerr Campus, and the City Environs Properties. The Proposed Project site is within the Campus Park zone (UC Berkeley 2021). Figure 1 shows the regional location of the Proposed Project site, while Figure 2 shows the Proposed Project boundary in the context of an aerial view of the site and surroundings. The Proposed Project site is zoned "High Density Residential" according to the City's Official Zoning Map (City of Berkeley 2022), although the University is not subject to the City's Zoning Ordinance. Other zoning uses in the surrounding area include residential uses to the south and commercial uses to the west.

Figure 1 Regional Location

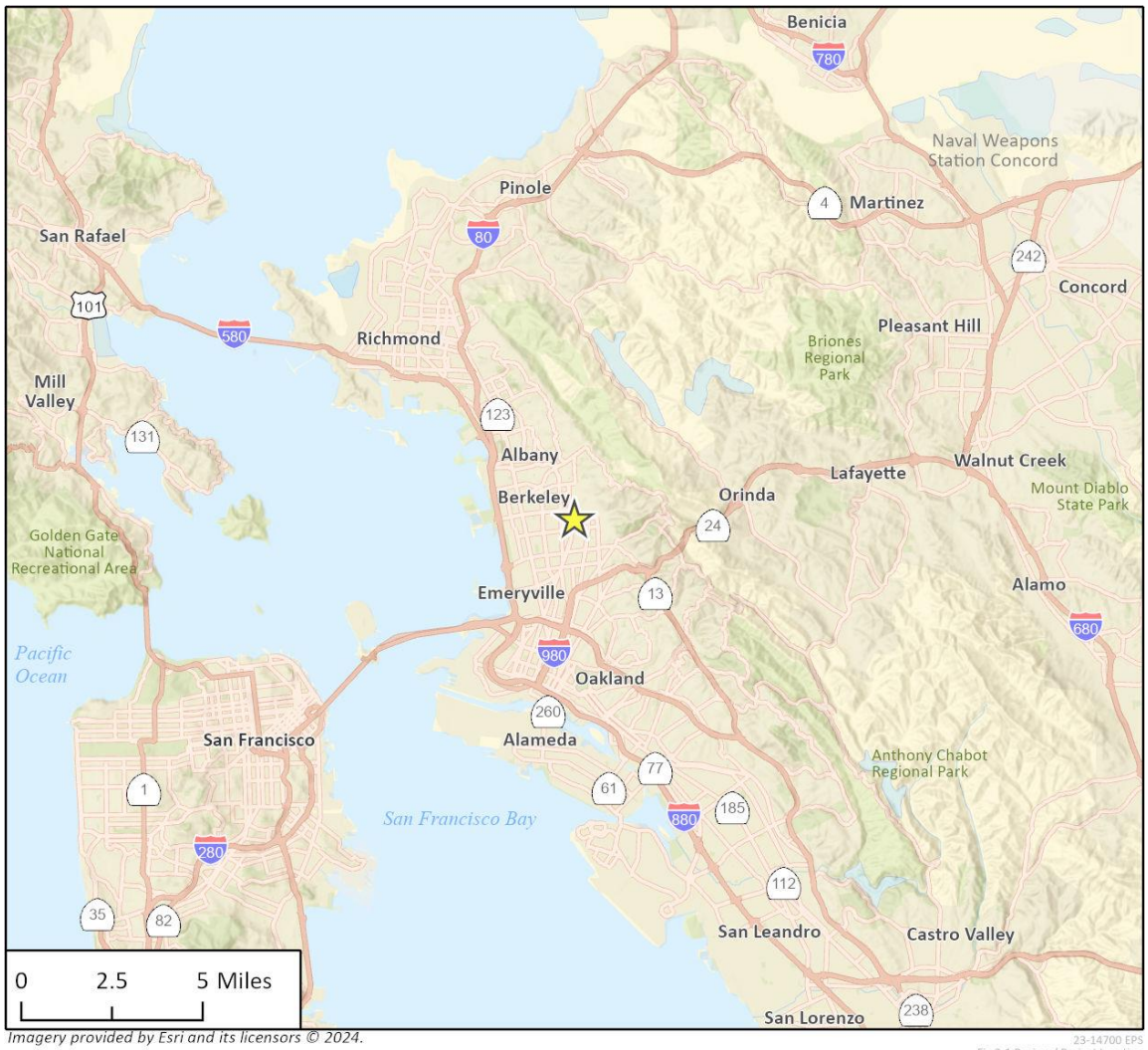


Figure 2 Project Boundary

Imagery provided by Microsoft Bing and its licensors © 2024.

23-14700 EPS
Fig 3-2 Aerial View of Project Site and Surroundings

Project Description

The Proposed Project would involve conversion of an existing parking area to an Intercollegiate Athletics women's beach volleyball facility, including five beach volleyball courts, an approximately 3,500-square-foot team building with locker rooms and restrooms, a scoreboard and lighting system, a loudspeaker system consisting of eight speakers, and two lawn berm areas with a total maximum capacity of approximately 500 spectators. Once operational, the Proposed Project would feature up to 14 total games (in regular-season and post-season) between the months of February and early May. Each game would last between approximately 90 and 120 minutes during daytime hours (between 7:00 a.m. and 10:00 p.m.).

Environmental Setting

Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The Environmental Management Element of the City of Berkeley General Plan identifies residences, child-care centers, hospitals, nursing homes, and outdoor activity areas (such as those associated with residences, schools, or parks) as noise-sensitive areas within the City (City of Berkeley 2002). Other noise-sensitive land uses typically include libraries, schools, and churches.

Sensitive receptors in the vicinity of the Proposed Project site include the Career Counseling Library located approximately 250 feet to the southeast, Saint Mark's Episcopal Church located approximately 515 feet to the southeast, single- and multi-family residences located 415 feet to the south, the Stadium Place Apartments located approximately 200 feet to the southwest, the Berkeley Shambhala Meditation Center and Oxford Plaza Apartments located approximately 100 feet to the west, The Kittredge Apartments building located approximately 85 feet to the west, and the Allston Place Apartments located approximately 150 feet to the northwest.

Existing Noise Environment

The existing ambient noise environment in the vicinity of the Proposed Project site[1] is composed primarily of vehicular traffic along nearby roadways (Bancroft Way, Fulton/Oxford Street, and Kittredge Street). Existing long-term ambient noise levels near the Proposed Project site were established in the Environmental Impact Report for the UC Berkeley Long Range Development Plan (LRDP EIR) (Placeworks 2021). As part of the noise analysis for this EIR, existing roadway traffic noise levels were established throughout the plan vicinity. Note that the traffic data contained within the LRDP EIR are the most recent available data for roadways near the Project site and their associated noise levels EIR are considered generally representative of the existing ambient noise environment at the Project site. A summary of existing average daily trips (ADT) and associated noise levels for roadway segments near the Proposed Project site are shown in Table 1.

[1] Note that short-term (15-minute) noise measurements were also conducted by Rincon in May 2024 to gain a general understanding of the existing ambient noise environment in the vicinity of the Project site and to verify the noise levels established in the LRDP EIR. Noise measurement data and information are included as Attachment 2.

Table 1 Existing Traffic Volumes and Long-Term Noise Levels

Roadway	Segment	Existing Average Daily Trips (ADT)	Existing Noise Level at 50 Feet from Roadway Centerline (dBA DNL)
Bancroft Way	Ellsworth Street to Fulton Street	10,690	65.4
Fulton Street	South of Bancroft Way	11,720	64.0
Kittredge Street	Shattuck Avenue to Fulton Street	2,980	55.1
Oxford Street	South of Center Street	19,220	66.5

ADT = average daily trips; dBA = A-weighted decibels; DNL = day-night-average sound level
Source: Placeworks 2021.

Figure 3 Approximate Noise Measurement Locations

Imagery provided by Microsoft Bing and its licensors © 2024.

23-14700 CR
Fig X Noise Measurement Locations

Regulatory Setting

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the L_{dn} should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual

The Federal Transit Administration (FTA) provides reasonable criteria for assessing construction vibration impacts based on the potential for adverse community reaction and potential building damage in the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). Vibration limits specified by the FTA are shown in Table 2, which represent the limits at which minor architectural damage (i.e., non-structural, cosmetic) would occur.

Table 2 FTA Vibration Criteria

Building Category	PPV (in/sec)
I. Reinforced concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Nonengineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

PPV = peak particle velocity; in/sec = inches per second
Source: FTA 2018

California Environmental Quality Act

The California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 et sec) requires all known environmental effects of a project to be analyzed, including environmental noise and vibration impacts. Thresholds for determining the significance of a noise impact are provided in Appendix G of the CEQA Guidelines (Title 14, Division 6, Chapter 3 of the California Code of Regulations). These thresholds are the basis for the evaluation of project impacts discussed in Section 4 of this report.

City of Berkeley Municipal Code

Section 13.40.070(B)(7)(a) of the City of Berkeley Municipal Code contains provisions for noise generated during construction, prohibiting the operating of "…or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work before 7:00 a.m. on a weekday (or before 9:00 a.m. on a weekend or holiday) or after 7:00 p.m. on a weekday (or after 8:00 p.m. on a weekend or holiday) such that the sound therefrom across a residential or commercial real property line violates Section 13.40.050." Section 13.040.070(B)(7)(b) states "[w]here technically and economically feasible, construction activities shall be conducted in such a manner that the maximum sound levels at affected properties will not exceed those listed in [Table 3] and [Table 4]." Table 3 presents maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment, while Table 4 presents maximum sound levels for repetitively scheduled and relatively long-term operation (period of 10 days or more) of stationary equipment.

Table 3 Noise Limits for Mobile Construction Equipment

	R-1, R-2 Residential	R-3 and Above Multi-Family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	75 dBA	80 dBA	85 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	60 dBA	65 dBA	70 dBA

Noise levels shown in this table represent maximum sound levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment.

Source: Table 13.40-3 of Berkeley Municipal Code (City of Berkeley 2024).

Table 4 Noise Limits for Stationary Construction Equipment

	R-1, R-2 Residential	R-3 and Above Multi-Family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	60 dBA	65 dBA	70 dBA
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	50 dBA	55 dBA	60 dBA

Noise levels shown in this table represent maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment.

Source: Table 13.40-4 of Berkeley Municipal Code (City of Berkeley 2024).

Federal Interagency Committee on Noise

The Federal Interagency Committee on Noise (FICON) has established guidelines for assessing noise impacts based on the extent to which the existing ambient noise level at a site is increased (FICON 1992). These guidelines are often used for assessing operational noise impacts associated with a project. Based on FICON recommendations, significant noise impacts are determined by the percentage of people who would be annoyed at various levels of noise exposure. FICON criteria indicates that significant impacts would occur if project-related noise were to increase the existing noise environment by the following:

- Greater than 1.5 dBA DNL for ambient noise environments of 65 dBA DNL and higher; or
- Greater than 3 dBA DNL for ambient noise environments of 60 to 64 dBA DNL; or
- Greater than 5 dBA DNL for ambient noise environments of less than 60 dBA DNL.

Methodology

Construction Noise

Temporary noise levels caused by construction activity would be a function of the noise generated by construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of noise-generating activities. The construction equipment list for the Proposed Project was based on the default equipment list output from CalEEMod for a project of this type and size utilized in the Project air quality analysis. Based on CalEEMod outputs, which are available as Appendix A to the Initial Study, typical heavy-duty construction equipment would include tractors, backhoes, bulldozers, forklifts, graders, pavers, rollers and stationary equipment, such as compressors. For a conservative estimate of construction noise impacts, it was assumed that diesel engines would power all construction equipment and that all equipment during each phase would be operating simultaneously.

Construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) Version 1.1. Construction equipment would typically be dispersed throughout various areas of the site, with only a limited amount of equipment operating near a given location at a particular time. The FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) document recommends evaluating construction noise impacts from the center of the construction site, stating that the distance variable in its recommended construction noise calculation "assumes that all equipment operates at the center of the project." Therefore, it was assumed that over the course of a typical construction day, construction equipment would operate at the center of the site, which was assumed to be located at the center of Court 3. Note that the nearest receptors are zoned as commercial uses, yet some of these buildings include multi-family residences on upper floors. Therefore, noise impacts to these residential receptors were evaluated to the City's noise limits for uses zoned as multi-family residential (R-3 and above) (see Table 4).

Operational Noise

Onsite Stationary Sources

Implementation of the Proposed Project would introduce additional sources of noise during operation. Primary sources would include five sand volleyball courts (located along the western Project site boundary), two spectator lawn areas (one located to the north and one to the east of the volleyball courts) with a total capacity of approximately 500 people, and eight loudspeakers located along the northern and eastern boundaries of the sand courts. The loudspeakers installed as part of the Proposed Project would be the JBL AWC129 speaker system. Noise generated by onsite stationary sources would be due primarily to players shouting and hitting the ball, spectators cheering, and use of the loudspeakers for announcements and commentary. When there are no events at the facility, operational noise would be negligible.

Operational noise generated by the Proposed Project was modeled and calculated using SoundPLAN, Version 9.0, a three-dimensional noise modeling program that incorporates noise propagation algorithms and reference sound levels published by various government agencies and the scientific community. Noise sources, receivers, structures, and site features are input using three-dimensional coordinates and noise levels are calculated at selected receivers or throughout a user-defined study area.

Modeling assumptions for onsite stationary noise sources are discussed below:

- Beach Volleyball Courts
  - The beach volleyball courts were modeled as area sources based on the physical dimensions shown on the provided site plan. Noise sources associated with the volleyball courts were modeled at a height of five feet above ground to represent the average height at which noise would be produced by players.
  - The sound power level of each volleyball court was assigned as 88 dBA, which was based on data contained within the SoundPLAN reference library for a volleyball match with a referee.
- Spectator Lawn Areas
  - The spectator lawn areas were modeled as area sources based on the physical dimensions shown on the provided site plan. Spectator lawn areas would consist of a mix of people standing and sitting; therefore, these sources were modeled at a height of four feet above ground to represent the average height at which noise would be produced by standing and seated spectators.
  - The sound power level of each spectator lawn was assigned as 93 dBA, which was based on data contained within the SoundPLAN reference library for spectators at an athletic event. This sound power level was calculated based on a maximum of 250 spectators present in each lawn area.
  - Spectator lawn areas were modeled under the assumption that spectator noise would not be constant during the entire course of a game. Spectator lawn areas were modeled such that noise from these areas would occur 80 percent of the time to represent the frequent, but noncontinuous nature of spectator noise.
- Loudspeakers
  - The loudspeakers, which will be the JBL AWC129 speaker system based on information provided by the University, were modeled as point sources, each with a horizontal directivity facing directly toward the nearest court. Per information provided by the University, loudspeakers would be mounted at 13 feet above the finished grade of the site, therefore all speakers were modeled at 13 feet above the ground. The noise output of each loudspeaker was adjusted to produce a sound pressure level of 107 dBA L_{eq} at 3.3 feet away, per sound rating information provided by the University.
  - Each loudspeaker was modeled with a time distribution of 75 percent to represent the frequent, but noncontinuous nature of speaker use during games.

In addition to the noise sources discussed above, existing site and surrounding topography and existing buildings were included in the model to account for the effect these features have on noise propagation throughout the site and surroundings. Depending on the orientation of large structures and obstacles relative to nearby noise sources and receptors, these site features may reflect, block, and/or redirect noise as it moves throughout the environment. When located in between a noise source and receptor, large structures and obstacles will typically provide at least 5 dBA of noise reduction at the receptor due to shielding and blocking of “line of sight” between the noise source and receptor (FHWA 2011).

Groundborne Vibration

The Proposed Project would not include any substantial vibration sources associated with operation. Therefore, construction activities represent the greatest potential to generate groundborne vibration affecting nearby structures. The greatest sources of vibration expected during construction would include large earthmoving equipment (such as graders, dozers, and backhoes). Typical vibration

levels produced by these equipment types are shown in Table 5. Vibration levels generated at nearby structures were calculated based on these reference vibration levels and distances these equipment types would be used relative to nearby structures.

Table 5 Typical Vibration Levels Produced by Construction Equipment

Equipment	Approximate Vibration Level (in/sec PPV) at 25 feet
Large Bulldozer, Backhoe	0.089

in/sec = inches per second; PPV = peak particle velocity
Source: FTA 2018.

Significance Thresholds

To determine whether a project would have a significant noise impact, Appendix G of the California Environmental Quality Act (CEQA) Guidelines requires consideration of whether a project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or,
2. Generation of excessive groundborne vibration or groundborne noise levels; or,
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

Construction Noise

UC Berkeley has not adopted thresholds of significance for construction activities. Given the location of the project site at the edge of campus and near businesses and residences in the City of Berkeley, the University has elected to use the City's construction noise thresholds. Construction that is nonscheduled, intermittent, and of short-term operation (less than 10 days) must not generate noise levels above the limits established in Table 3. Construction that is repetitively scheduled and of relatively long-term operation (period of 10 days or more) must not generate noise levels above the limits established in Table 4. Construction would occur over an approximately 10-month period, therefore, construction of the Proposed Project would be considered significant if it were to generate noise levels above the limits shown in Table 4 at nearby receptors.

Operational Noise

As discussed in the *Existing Noise Environment* section, the existing noise level in the vicinity of the project site ranges between approximately 55.1 and 66.5 dBA DNL (at a distance of 50 feet from the respective roadway centerlines). Therefore, according to the noise limits established by FICON, operational noise generated by the Proposed Project would be considered significant if it were to increase the existing ambient noise environment by the respective thresholds discussed in the *Regulatory Setting* section. These thresholds are 1.5 dBA DNL for existing noise environments greater than or equal to 65 dBA DNL, 3 dBA DNL for existing noise environments between 60 and 64 dBA DNL, and 5 dBA DNL for existing noise environments below 60 dBA DNL.

The FICON thresholds are commonly used in evaluating time-varying operational noise levels. Use of the FICON thresholds allows consideration of the existing noise environment in determining potential noise impacts, as noise impacts are evaluated based on the extent of an increase above the existing

noise environment, depending on the existing ambient noise level. This is an important consideration, as noise generated in a loud existing noise environment is typically less disruptive than the same noise generated in a quiet existing noise environment. Therefore, use of the FICON thresholds allows for more precision in evaluating operational noise.

Groundborne Vibration

UC Berkeley has not adopted quantitative standards to assess vibration impacts during construction and operation. Likewise, the City of Berkeley also has no adopted standards. Therefore, the vibration level limits established in the FTA's *Transit Noise and Vibration Impact Assessment Manual* (2018), shown in Table 2, were used to evaluate construction vibration impacts related to potential building damage. Based on the FTA criteria, construction vibration impacts would be considered significant if vibration levels exceed 0.2 inches per second (in/sec) peak particle velocity (PPV) at the existing residential buildings across from Oxford/Fulton Street and 0.3 in/sec PPV at the adjacent Edwards Stadium.

Impact Analysis

Issue 1: Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction Noise

Following the methodology discussed in the *Construction Noise* section, construction noise levels were estimated at nearby sensitive receptors. Noise levels at nearby sensitive receptors are presented in Table 6 by construction phase.

Table 6 Project Construction Noise Levels by Phase at Nearby Sensitive Receptors

Construction Phase	Noise Level (dBA L_{eq} [8-hour])				City's Noise Threshold (dBA)	Exceeds City's Noise Threshold?
	Reference Noise Level	Multi-family residences to the west	Multi-family residences to the northwest	Multi-family residences to the northwest		
Distance (ft)	*50*	*130*	*180*	*400*		-
Demolition	86	78	75	68	*65*	**Yes**
Site Preparation	82	74	71	64	*65*	**Yes**
Grading	83	75	72	65	*65*	**Yes**
Paving	83	75	72	65	*65*	**Yes**
Building Construction	87	79	76	69	*65*	**Yes**
Architectural Coating	76	68	65	58	*65*	**Yes**

RCNM data sheets and equipment assumptions are included in Attachment 3.

Note that the Proposed Project would include the following Continuing Best Practices (CBP), which are standard practices implemented by the University to reduce environmental impacts during construction.

CBP NOI-2: UC Berkeley will require the following measures for all construction projects:

- Construction activities will be limited to a schedule that minimizes disruption to uses surrounding the project site as much as possible. Construction outside the Campus Park will be scheduled within the allowable construction hours designated in the noise ordinance of the local jurisdiction to the full feasible extent, and exceptions will be avoided except where necessary. As feasible, construction equipment will be required to be muffled or controlled.
- The intensity of potential noise sources will be reduced where feasible by selection of quieter equipment (e.g., gas or electric equipment instead of diesel powered, low noise air compressors).
- Functions such as concrete mixing and equipment repair will be performed off-site whenever possible.
- Stationary equipment such as generators and air compressors will be located as far as feasible from nearby noise-sensitive uses.
- At least 10 days prior to the start of construction activities, a sign will be posted at the entrance(s) to the job site, clearly visible to the public, that includes contact information for UC Berkeley's authorized representative to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, they will investigate, take appropriate corrective action, and report the action to UC Berkeley.
- During the entire active construction period and to the extent feasible, the use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only. The construction manager will use smart back-up alarms, which automatically adjust the alarm level based on the background noise level, or switch off back-up alarms and replace with human spotters in compliance with all safety requirements and laws.

CBP AIR-3: UC Berkeley will continue to implement the following control measures to reduce emissions of diesel particulate matter and ozone precursors from construction equipment exhaust:

- Equipment will be properly serviced and maintained in accordance with the manufacturer's recommendations.
- Construction contractors will also ensure that all nonessential idling of construction equipment is restricted to five minutes or less, in compliance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Construction of the Proposed Project would occur between 7:00 a.m. and 7:00 p.m. on weekdays, which would comply with the allowable construction hours stated in Section 13.40.050 of the BMC (between 7:00 a.m. and 7:00 p.m. on weekdays and between 9:00 a.m. and 8:00 p.m. on weekends and legal holidays) and be in accordance with CBP NOI-2.

As shown in Table 6, construction noise generated by the Proposed Project would exceed the City's limits at nearby multi-family residential receptors during almost all phases of construction. Therefore, temporary noise impacts associated with construction of the Proposed Project would be potentially significant.

Mitigation Measures

NOI-1 Construction Noise Reduction Measures

In order to reduce noise levels generated during construction of the Proposed Project to below the City's required thresholds, the following construction noise control measures shall be implemented:

- Prior to the initiation of construction activities at the Project site, temporary noise barriers/blankets shall be installed along the western and northern boundaries of the project site to shield nearby sensitive receptors from construction noise. The temporary barriers/blankets shall have a minimum height of 15 feet and be constructed with a solid material that has a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier.
- Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer.

Significance After Mitigation

Implementation of Mitigation Measure NOI-1, including the use of temporary barriers, would reduce construction noise levels by 19 dBA or more (FHWA 2017, Klingner et al. 2003). Therefore, maximum construction noise levels would be reduced to 60 dBA and below at the nearest multi-family residential receptors, which is below the City's 65 dBA L_{max} threshold for multi-family residential uses. Temporary noise impacts associated with construction would be less than significant with mitigation.

In addition, implementation of the following Construction Best Management Practices where feasible would further reduce noise levels produced during construction of the Proposed Project.

Construction Best Management Practices

- At least 21 days prior to the start of construction activities, businesses and residents within 500 feet of the project site shall be notified of the planned construction activities. For multi-family residential buildings, the notification shall be provided to property owner or building manager with instructions to distribute to the residents of the building or post in community space, such as the building entrance. The notification shall include a brief description of the Project, the activities that would occur, the hours when construction would occur, and the overall duration of the construction period. The notification shall include the telephone numbers of the University's and contractor's authorized representatives that are assigned to respond in the event of a noise complaint. UC Berkeley shall maintain a log to record successful notification to each applicable business and residence.
- If a construction noise complaint is registered, the University shall retain a qualified noise consultant to conduct noise measurements at the properties that registered the complaint. The noise measurements shall be conducted for a minimum of one hour while construction occurs. The consultant shall prepare a letter report for the University summarizing the measurements, calculation data used in determining impacts, and potential measures to reduce noise levels to the maximum extent feasible. The University shall incorporate the feasible measures to reduce noise levels.
- All noisy equipment shall be operated only when necessary and shall be switched off when not in use.
- Staging and delivery areas shall be located as far as feasible from existing residences.

- Material hauling and deliveries shall be coordinated by the construction contractor to reduce the potential of trucks waiting to unload for protracted periods of time.
- To the extent feasible, hydraulic equipment shall be used instead of pneumatic impact tools, and electric-powered equipment shall be used instead of diesel-powered equipment.
- Signs shall be posted at the job site entrance(s), within the on-site construction zones, and along queueing lanes (if any) to reinforce the prohibition of unnecessary engine idling. All other equipment shall be turned off if not in use for more than five minutes. The construction manager shall be responsible for enforcing this.

Operational Noise

Onsite Stationary Noise Sources

Following the methodology discussed in the *Operational Noise* section, operational noise levels associated with the Proposed Project's onsite stationary noise sources were modeled and calculated at nearby sensitive receptors. Operational noise contours associated with the Proposed Project's onsite stationary noise sources are shown in Figure 4, and operational noise levels are summarized in Table 7.

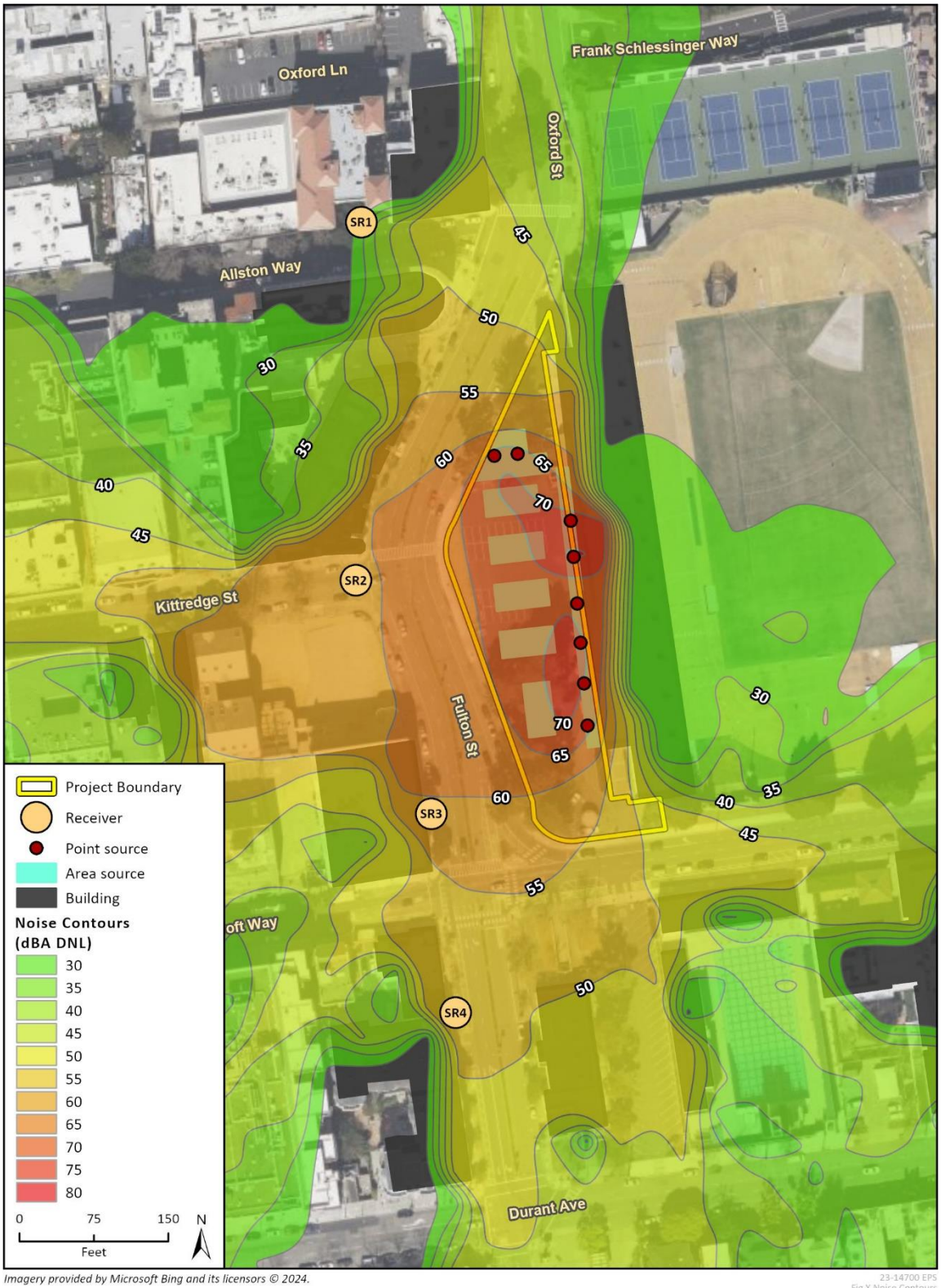
Table 7 Operational Noise Levels Modeled at Sensitive Receptors

Receptor	Existing Noise Level (dBA DNL)	Significance Threshold for Increase Above Existing Noise Level (dBA DNL)	Modeled Noise Level (dBA DNL)	Increases Existing Noise Level Above Threshold?
SR1	55.1	5.0	35.8	No
SR2	66.5	1.5	63.7	No
SR3	66.5	1.5	64.4	No
SR4	64.0	3.0	56.6	No

Noise contours and receptor locations are shown in Figure 4.

As shown in Figure 4 and Table 7, operational noise levels at nearby receptors would not increase the existing noise levels above the respective thresholds. Operational noise levels would be approximately 36 dBA DNL at SR1 (where the existing ambient noise level is approximately 55.1 dBA DNL); therefore, noise levels at this receptor would not increase by 5 dBA DNL or more. Operational noise levels would be approximately 64 dBA DNL at SR2 and SR3 (where the existing noise level is approximately 66.5 dBA DNL); therefore, noise levels at these receptors would not increase by 1.5 dBA DNL or more. Operational noise levels would be approximately 57 dBA DNL at SR4 (where the existing noise level is approximately 64.0 dBA DNL); therefore, noise levels at these receptors would not increase by 3 dBA DNL or more. Therefore, operational noise associated with the Proposed Project's onsite stationary noise sources would not increase the existing ambient noise environment above the thresholds at nearby sensitive receptors, and these impacts would be less than significant.

Figure 4 Operational Noise Contours



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23-14700 EPS
Fig X Noise Contours

Offsite Mobile Sources

The Proposed Project would not provide any parking onsite. Therefore, it is assumed that the Proposed Project would not result in a substantial increase in traffic volumes on nearby roadways (primarily Bancroft Way and Oxford Street/Fulton Street), and any resulting noise increases along these roadways would be correspondingly negligible. Based on FICON criteria for significant noise increases, traffic noise impacts would be considered significant if they were to increase the existing noise environment by the thresholds specified in the *Federal Interagency Committee on Noise* section, which ranges between 1.5 to 5 dBA DNL depending on the existing noise environment. Based on the existing noise environment near the site, a 1.5 dBA DNL increase on Bancroft Way and/or Oxford Street/Fulton Street would be considered significant. In the vicinity of the Project site, Bancroft Way has a daily volume of 10,690 vehicles, while Oxford Street/Fulton Street has a daily volume of 19,220 vehicles (Placeworks 2021). Generally, a doubling of traffic volumes results in a noise increase of 3 dBA DNL. Therefore, in order for noise levels to increase by 3 dBA or more along these roadways, traffic volumes would need to increase to at least 21,380 vehicles per day on Bancroft Way and 38,440 vehicles per day on Oxford Street/Fulton Street. For a noise increase of 1 dBA or more on Bancroft Way, traffic volumes would need to increase by approximately 2,700 vehicles or more per day. For a noise increase of 1 dBA or more on Oxford Street/Fulton Street, traffic volumes would need to increase by approximately 5,000 vehicles or more per day. Traffic volume increases of these magnitudes would not occur given the scope of the Proposed Project. Conservatively assuming that the Project may generate a maximum number of trips equal to the maximum expected spectator attendance (500 people), an increase of 500 trips on Bancroft Way would result in a noise increase of approximately 0.2 dBA DNL, while an increase of 500 trips on Oxford Street/Fulton Street would result in a noise increase of approximately 0.1 dBA DNL. Noise increases on both roadways would not exceed the significance threshold of 1.5 dBA DNL or more. Finally, the Project is anticipated to attract spectators for only approximately 14 days out of the year, as each season would consist of up to 14 games. Therefore, is expected that offsite noise increases due to mobile sources (i.e., traffic) on roadways near the Project site would be less than significant.

Issue 2: Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Groundborne Vibration

Construction activities associated with some of the highest levels of vibration (such as impact pile driving and blasting) are not proposed; therefore, the equipment that is expected to generate the greatest levels of vibration include large earthmoving equipment such as graders, dozers, and backhoes. Large earthmoving equipment generates vibration levels of approximately 0.089 in/sec PPV at a reference distance of 25 feet (FTA 2018). Based on the site plan for the Proposed Project, earthmoving equipment may be used within 75 feet of the nearest residential structure to the west. At this distance, earthmoving equipment would generate vibration levels up to 0.017 in/sec PPV, which would not generate vibration levels exceeding the impact threshold of 0.2 in/sec PPV (which is the limit at which minor architectural damage may occur) at the nearest residential structures.

Large earthmoving equipment may be used as close as approximately 5 feet of Edwards Stadium. At this distance, earthmoving equipment could generate vibration levels up to 0.995 in/sec PPV, which would exceed the FTA's threshold of 0.3 in/sec PPV for minor architectural damage to engineered concrete structures. Therefore, temporary vibration impacts upon this structure would be potentially significant.

Mitigation Measures

In order to reduce vibration impacts upon Edwards Stadium, the following Mitigation Measure shall be implemented:

NOI-2 Alternative Construction Equipment

The following measure shall be included as a note on all construction plans:

- Construction activities utilizing earthmoving equipment (such as graders, dozers, backhoes, etc.) within 12 feet shall be conducted with small offroad equipment that is limited to 100 horsepower (hp) or less.

Significance After Mitigation

Implementation of Mitigation Measure NOI-2 would require the use of small offroad equipment limited to 100 hp or less for earthmoving activities within 12 feet, which would reduce vibration impacts upon the adjacent Edwards Stadium. Small offroad equipment produces vibration levels up to approximately 0.003 in/sec PPV at a reference distance of 25 feet (FTA 2018). At a distance of 5 feet (the approximate distance that this equipment may be used based on the demo and site plans), the resulting vibration level would reach approximately 0.034 in/sec PPV. Therefore, vibration levels generated at Edwards Stadium would not exceed the FTA's threshold of 0.3 in/sec PPV for concrete structures, and vibration impacts generated by construction of the Proposed Project would be less than significant with mitigation.

Issue 3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Airport Noise

The airport nearest to the Project site, San Francisco Bay Oakland International Airport (OAK), is located approximately 11 miles south of the Project site. According to Figure 3-3 of the Oakland International Airport Land Use Compatibility Plan, the Project site is not located within any of the noise contours of the airport (Environmental Science Associates [ESA] 2010). Therefore, players, visitors, and workers associated with the Proposed Project would not be exposed to excessive aircraft/airport noise, and no impacts would occur.

Conclusion

The Proposed Project would generate temporary noise during construction that would exceed the City's construction noise limits at nearby sensitive receptors. However, implementation of Mitigation Measure NOI-1 would reduce construction noise levels to below the City's limits and result in less-than-significant impacts.

Construction of the Proposed Project would not generate levels of groundborne vibration exceeding applicable thresholds at the closest residential structures to the west. However, vibration generated during construction would exceed applicable thresholds established by the FTA at Edwards Stadium, which is considered a historic structure. Implementation of Mitigation Measure NOI-2 would reduce vibration levels at this structure to below FTA limits and impacts would be less than significant with

mitigation. The Proposed Project would not include any sources of operational vibration, therefore no operational vibration impacts would occur.

The project's onsite stationary noise sources (e.g., volleyball courts, spectator areas, and loudspeakers) would not increase the existing ambient noise environment above the respective FICON thresholds between 1.5 and 5 dBA DNL, depending on the existing ambient noise environment; therefore, onsite stationary noise impacts would be less than significant. The Proposed Project would not provide any onsite parking, therefore would not result in increased vehicle traffic on nearby roadways such that discernible increases in decibel levels would result; therefore, offsite mobile (i.e., traffic) noise impacts would be less than significant.

The Project site is located outside of the noise contours of the nearest airport (San Francisco Bay Oakland International Airport); therefore, the Proposed Project would not expose players, visitors, or workers to excessive airport-related noise and no impacts would occur.

Sincerely,
Rincon Consultants, Inc.

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Noise Specialist

Josh Carman, INCE
Director of Technical Services

Attachments

Attachment 1 Noise Fundamentals
Attachment 2 Short-Term Noise Measurement Data
Attachment 3 Construction Noise Modeling Results
Attachment 4 SoundPLAN Modeling Information

References

Berkeley, City of. 2002. Berkeley General Plan. Available at: https://berkeleyca.gov/your-government/our-work/adopted-plans/general-plan

_____. 2022. Official Zoning Map. Available at: https://berkeley.municipal.codes/BMC/OfficialZoningMap

_____. 2024. Berkeley Municipal Code. Available at: https://berkeley.municipal.codes/

Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March.

Environmental Science Associates (ESA). 2010. Oakland International Airport Land Use Compatibility Plan. Available at: https://www.acgov.org/cda/planning/generalplans/airportlandplans.htm

Federal Aviation Administration. 2020. 1050.1F Desk Reference. February.

Federal Highway Administration (FHWA). 2011. Highway Traffic Noise Analysis and Abatement Policy and Guidance. (FHWA-HEP-10-025). December. (accessed December 2024).

_____. 2017. Highway Construction Noise: Measurement, Prediction, and Mitigation. June. Available at: https://www.fhwa.dot.gov/environment/noise/construction_noise/special_report/

Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment. November. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed October 2024).

Federal Interagency Committee on Noise (FICON). 1992. Federal Agency Review of Selected Airport Noise Analysis Issues. Available at: https://www.faa.gov/sites/faa.gov/files/reports_noise_analysis.pdf

Governor's Office of Land Use and Climate Innovation (LCI) (formerly Governor's Office of Planning and Research. 2017. *State of California General Plan Guidelines*. Available at: https://lci.ca.gov/planning/general-plan/guidelines.html

Klingner, Richard E., et al. 2003. Design Guide for Highway Noise Barriers. November.

Placeworks. 2021. *UC Berkeley Long Range Development Plan and Housing Projects #1 and #2 Final Environmental Impact Report*. July.

Attachment 1

Noise Fundamentals

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 µPa).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.

- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase

± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from

7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Attachment 2

Short-Term Noise Measurement Data

Measurement Location	Start Date	Start Time	End Time	Duration	Meas Mode	Input Range	Input Type	SPL Time Weight	LN% Freq Weight	Overload	UnderRange	Sensitivity	LZeq	LCeq	LAeq	LZSmax	LCSmax	LASmax	LZSmin
ST-1	5/1/2024	6:57:24 PM	7:12:02 PM	0:14:38	Single	Low	Mic	Slow	dBA	No	No	20.22mV/Pa	73.5	72.6	63.5	91.7	91.5	82.2	63.4
ST-2	5/1/2024	7:12:47 PM	7:27:52 PM	0:15:05	Single	Low	Mic	Slow	dBA	No	No	20.22mV/Pa	73.6	72.2	60.8	92.3	91.4	74.1	64.4

Measurement Location	LCSmin	LASmin	LZE	LCE	LAE	LZpk	LCpk	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%	
ST-1	60.2	48.2	102.9	102	92.9	108.2	109	102.3	72.7	69.3	67.6	66.5	65.9	63.5	60.4	54.1	52	49.9	
ST-2	61.9	48.9	103.2	101.8	90.4	101.5	100.6	91	68.1	66.5	65	64	63.6	61.8	59.4	54.3	53.2	50.5	

Attachment 3

Construction Noise Modeling Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/29/2024
Case Description: Cal Beach Volleyball Complex Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Demolition	Commercial	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20	90.0		50.0	0.0
Dozer	No	40	85.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	90.0	83.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	90.0	86.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/29/2024
Case Description: Cal Beach Volleyball Complex Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site Preparation	Commercial	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40	80.0		50.0	0.0
Grader	No	40	85.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	82.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/29/2024
Case Description: Cal Beach Volleyball Complex Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Grading	Commercial	60.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Crane	No	16	85.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	85.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/29/2024
Case Description: Cal Beach Volleyball Complex Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Building Construction	Commercial	60.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16	85.0		50.0	0.0
Man Lift	No	20	85.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Crane	85.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	85.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	82.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/29/2024
Case Description: Cal Beach Volleyball Complex Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Paving	Commercial	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50	85.0		50.0	0.0
Roller	No	20	85.0		50.0	0.0
Concrete Mixer Truck	No	40	85.0		50.0	0.0
Concrete Mixer Truck	No	40	85.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Paver	85.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	85.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total	85.0	87.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/21/2024
Case Description: Cal Beach Volleyball Complex Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Architectural Coating	Commercial	60.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40	80.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Attachment 4

SoundPLAN Modeling Information

Cal Women's VBall Facility
Run info
Operational Noise_FICON Thresholds

Project info

Project title: Cal Women's VBall Facility
Project No.: 23-14700
Project engineer: Kyle Pritchard
Customer:

Description:
Noise model for Cal Women's VBall Facility project (City of Berkeley, CA).

Run description

Calculation type: Single Point Sound
Title: Operational Noise_FICON Thresholds
Calculation group
Run file: RunFile.runx
Result number: 7
Local calculation (ThreadCount=12)
Calculation start: 10/24/2024 8:08:27 AM
Calculation end: 10/24/2024 8:08:30 AM
Calculation time: 00:00:596 [m:s:ms]
No. of points: 4
No. of calculated points: 4
Kernel version: SoundPLANnoise 9.0 (4/18/2024) - 64 bit

Run parameters

Reflection order: 3
Maximum reflection distance to receiver 200 m
Maximum reflection distance to source 50 m
Search radius 5000 m
Weighting: dB(A)
Allowed tolerance (per individual source): 0.100 dB
Create ground effect areas from road surfaces: Yes
Treat roads as terrain following: No

Standards:
- Industry: ISO 9613-2: 1996
- Air absorption: ISO 9613-1

regular ground effect (chapter 7.3.1), for sources without a spectrum automatically alternative ground effect

- Limitation of screening loss:
  - single/multiple 20.0 dB /25.0 dB

Side diffraction: ISO/TR 17534-3:2015 compliant: no side diffraction if terrain blocks line of sight
Use Eqn (Abar=Dz-Max(Agr,0)) instead of Eqn (12) (Abar=Dz-Agr) for insertion loss

- Environment:
  - Air pressure 1013.3 mbar
  - rel. humidity 70.0 %
  - Temperature 10.0 °C
  - Meteo. corr. C0(7-22h)[dB]=0.0; C0(22-7h)[dB]=0.0;
  - Ignore Cmet for Lmax industry calculation: No
- Parameter for screening: C2=20.0

Dissection parameters:

Distance to diameter factor	8
Minimal distance	1 m
Max. difference ground effect + diffraction	1.0 dB
Max. number of iterations	4

Attenuation

Foliage:	ISO 9613-2
Built-up area:	ISO 9613-2
Industrial site:	ISO 9613-2

Assessment: CNEL (CA)
Reflection of "own" facade is suppressed

Geometry data

Calculation Area.geo	10/22/2024 3:07:04 PM	
Existing Buildings.geo	8/23/2024 8:37:40 AM	
Ground Absorption.geo	9/12/2024 3:21:08 PM	
Noise Sources_Speakers.geo	10/21/2024 2:56:16 PM	
Noise Sources_Spectator Lawns.geo		10/21/2024 7:27:12 AM
Noise Sources_Volleyball Courts.geo		10/21/2024 7:27:12 AM
Project Site Boundary.geo	10/7/2024 2:46:54 PM	
Sensitive Receptors.geo	10/24/2024 8:08:00 AM	
Terrain Features.geo	8/19/2024 9:13:58 AM	
Topography_USGS.geo	10/21/2024 10:55:28 AM	
RDGM0001.dgm	8/19/2024 8:48:38 AM	

Cal Women's VBall Facility
Run info
Operational Noise_FICON Thresholds (Grid Map)

Project info

Project title: Cal Women's VBall Facility
Project No.: 23-14700
Project engineer: Kyle Pritchard
Customer:

Description:
Noise model for Cal Women's VBall Facility project (City of Berkeley, CA).

Run description

Calculation type: Grid Map
Title: Operational Noise_FICON Thresholds (Grid Map)
Calculation group
Run file: RunFile.runx
Result number: 8
Local calculation (ThreadCount=12)
Calculation start: 10/24/2024 8:08:32 AM
Calculation end: 10/24/2024 8:08:42 AM
Calculation time: 00:07:815 [m:s:ms]
No. of points: 8606
No. of calculated points: 8606
Kernel version: SoundPLANnoise 9.0 (4/18/2024) - 64 bit

Run parameters

Reflection order: 3
Maximum reflection distance to receiver 200 m
Maximum reflection distance to source 50 m
Search radius 5000 m
Weighting: dB(A)
Allowed tolerance: 0.100 dB
Create ground effect areas from road surfaces: Yes
Treat roads as terrain following: No

Standards:
- Industry: ISO 9613-2: 1996
- Air absorption: ISO 9613-1
- regular ground effect (chapter 7.3.1), for sources without a spectrum automatically alternative ground effect
- Limitation of screening loss:
  - single/multiple 20.0 dB /25.0 dB
- Side diffraction: ISO/TR 17534-3:2015 compliant: no side diffraction if terrain blocks line of sight
- Use Eqn (Abar=Dz-Max(Agr,0)) instead of Eqn (12) (Abar=Dz-Agr) for insertion loss
- Environment:
  - Air pressure 1013.3 mbar
  - rel. humidity 70.0 %
  - Temperature 10.0 °C
  - Meteo. corr. C0(7-22h)[dB]=0.0; C0(22-7h)[dB]=0.0;
  - Ignore Cmet for Lmax industry calculation: No
- Parameter for screening: C2=20.0

Dissection parameters:		
Distance to diameter factor		8
Minimal distance		1 m
Max. difference ground effect + diffraction		1.0 dB
Max. number of iterations		4
Attenuation		
Foliage:	ISO 9613-2	
Built-up area:	ISO 9613-2	
Industrial site:	ISO 9613-2	
Assessment:	CNEL (CA)	
Grid Noise Map:		
Grid space:	10.00 m	
Height above ground:	1.500 m	
Grid interpolation:		
	Field size =	9x9
	Min/Max =	10.0 dB
	Difference =	0.2 dB
	Limit level=	40.0 dB

Geometry data

Calculation Area.geo	10/22/2024 3:07:04 PM	
Existing Buildings.geo	8/23/2024 8:37:40 AM	
Ground Absorption.geo	9/12/2024 3:21:08 PM	
Noise Sources_Speakers.geo	10/21/2024 2:56:16 PM	
Noise Sources_Spectator Lawns.geo		10/21/2024 7:27:12 AM
Noise Sources_Volleyball Courts.geo		10/21/2024 7:27:12 AM
Project Site Boundary.geo	10/7/2024 2:46:54 PM	
Ref Lines.geo	10/7/2024 2:47:02 PM	
Sensitive Receptors.geo	10/24/2024 8:08:00 AM	
Terrain Features.geo	8/19/2024 9:13:58 AM	
Topography_USGS.geo	10/21/2024 10:55:28 AM	
RDGM0001.dgm	8/19/2024 8:48:38 AM	