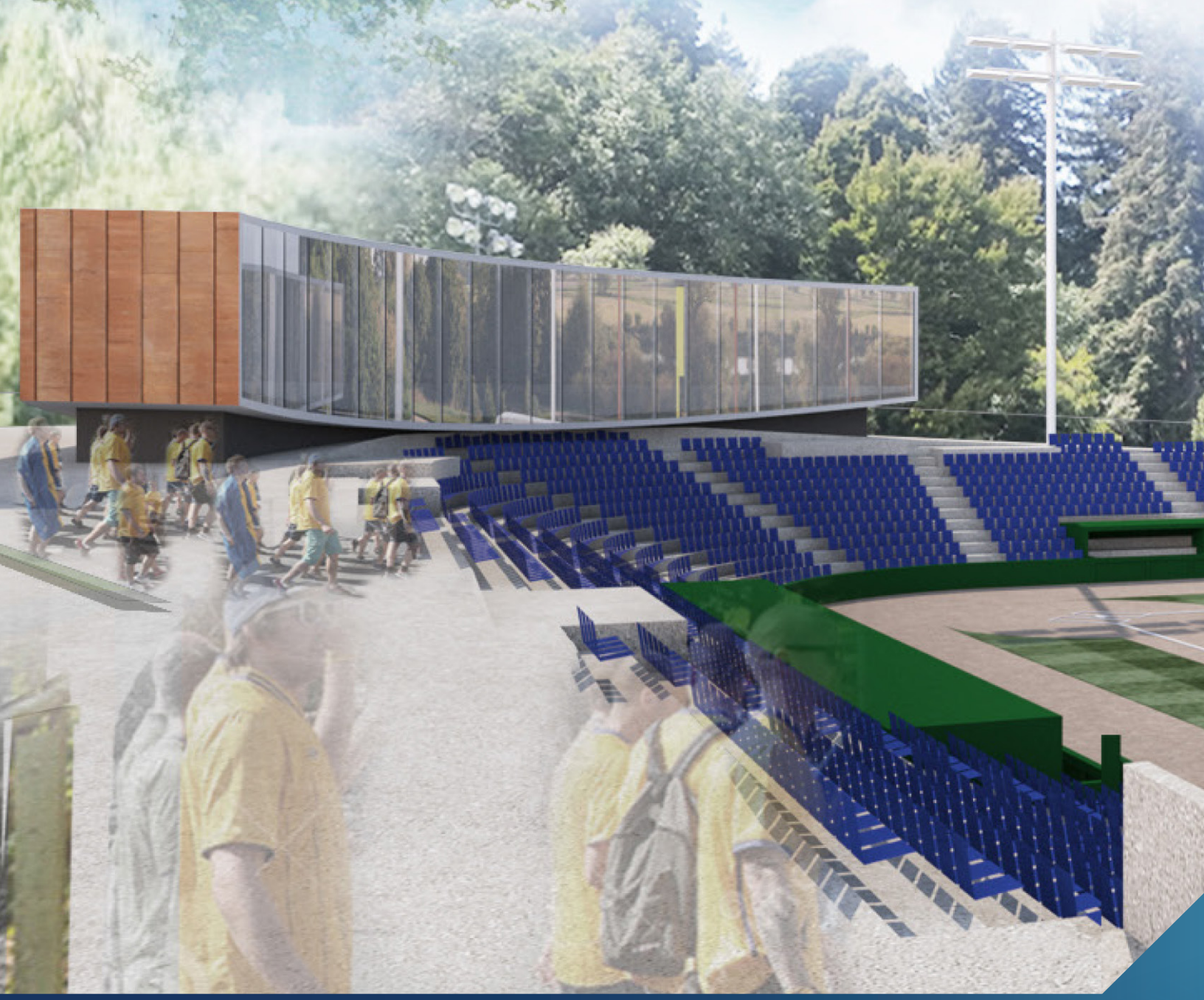

Berkeley
UNIVERSITY OF CALIFORNIA

Cal Softball Field Renovation Project

Draft Environmental Impact Report

December 2023 - State Clearinghouse Number: 2022110035

DRAFT
ENVIRONMENTAL IMPACT REPORT

UC Berkeley Cal Softball Field Renovation Project

State Clearinghouse Number 2022110035

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa Transit District
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADT	average daily trips
AES	aesthetics
Amsl	Above mean sea level
API	area of potential impact
APN	Assessor's Parcel Number
AQI	Air Quality Index
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit District
BERD	Built Environment Resources Directory
BMP	Best management practice
BSA	biological study area
CALFIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
Cal OES	California Office of Emergency Services
CARB	California Air Resources Board
CBC	California Building Code
CBP	continuing best practice
CCR	California Code of Regulations
cd	maximum intensity values
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	California Fire Code
CHL	California Historic Landscape
CHR	California Historical Resource
CHRIS	California Historical Resources Information System
CIE	Commission on Illumination
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CRHR	California Register of Historic Resources
CRPR	California Rare Plant Rank
CSC	Capital Strategies Communications
CUL	cultural
CWPP	Community Wildfire Protection Plan
dB	decibel
dBA	A-weighted decibel
DBH	Diameter at breast height
DNL	Day-night sound level
EBMUD	East Bay Municipal Utility District
EBP Subbasin	East Bay Plain Subbasin
EIR	environmental impact report
EOP	Emergency Operations Plan
ESA	Endangered Species Act
ES-R	Environmental Safety Residential

Acronym/Abbreviation	Definition
FAR	Floor Area Ratio
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FICON	Federal Interagency Committee on Noise
FRA	Federal Responsibility Area
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
GHG	greenhouse gas
GSA	Groundwater Sustainability Agency
GSF	gross square foot
GSP	Groundwater Sustainability Plan
HVAC	Heating, ventilation, and air conditioning
Hz	hertz
IA	Intercollegiate Athletics
ICS	Incident Command System
IES	Illuminating Engineering Society
INCE	Institute of Noise Control Engineers
IPaC	Information for Planning and Consultation
K	kelvin
LBNL	Lawrence Berkeley National Laboratory
LED	light-emitting diode
LEED	Leadership in Energy and Environmental Design
L_{dn}	Day-night sound level
L_{eq}	Equivalent continuous noise level
LHMP	Local Hazard Mitigation Plan
LID	Low-impact development
L_{max}	maximum noise level during a measurement period
L_n	Statistical sound level
LOS	level of service
LRA	Local Responsibility Area
LRDP	Long Range Development Program
LU	Land Use
MLD	most likely descendant
MM	mitigation measures
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission
MWWTP	Main Wastewater Treatment Plant
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCAA	National Collegiate Athletic Association
NHPA	National Historic Preservation Act
NIMS	National Incident Management System
NMFS	National Marine Fisheries Service
NOI	noise
NOP	Notice of Preparation
NO_x	Oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
NVCS	National Vegetation Classification Standard
NWI	National Wetlands Inventory
NWIC	Northwest Information Center
OHP	Office of Historic Preservation
OPR	Office of Planning and Research

Acronym/Abbreviation	Definition
PA	Public Address
PCE	Primary constituent element
PDA	Priority Development Area
PM10	particulate matter with an aerodynamic resistance diameter of 10 micrometers or less
PM2.5	particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less
PPV	Peak Particle Velocity
PRC	California Public Resources Code
R-1	Single-family Residential
R-2	Two-family Residential
R-2A	Restricted Multiple-family Residential
R-3	Multiple-family Residential
RCNM	Roadway Construction Noise Model
RH-1	Hillside Residential-1
RMS	root mean square
ROG	Reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCMP	Strawberry Creek Management Plan
SCRA	Strawberry Canyon Recreation Area
SCS	Sustainable Communities Strategy
SEMS	Standardized Emergency Management Systems
SHPO	State Historic Preservation Officer
SLM	Sound level meter
SOV	single-occupant-vehicle
SRC	Seismic Review Committee
SSC	Species of Special Concern
SWPPP	Stormwater Pollution Prevention Plan
TAC	Toxic air contaminant
TCR	Tribal Cultural Resources
TDM	transportation demand management
TPA	Transit Priority Areas
TRAN	transportation
UC	University of California
UCOP	University of California Office of the President
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VdB	Vibration decibel
VDECS	Verified Diesel Emissions Control Strategy
VMT	vehicle miles traveled
WHO	World Health Organization
WPP	Wildfire protection plan
WUI	Wildland Urban Interface
WVFMP	Wildland Vegetative Fuel Management Plan

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1. Executive Summary

1.1 OVERVIEW

The University of California, Berkeley (UC Berkeley or university) Cal Softball Field Renovation Project (project or proposed project) is about gender equity. Chancellor Christ has made it clear that 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.[1] 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 Cal Softball Field does not meet current National Collegiate Athletic Association Division I (NCAA) standards for field dimensions, seating, and lighting. This puts Intercollegiate Athletic (IA) Women's Softball Program (Cal women's softball) 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 UC Berkeley Cal Softball Field Renovation Project is to provide an equitable facility for women's softball. The project proposes to renovate and improve the existing Cal Softball Field to meet modern safety and NCAA competition standards for Cal women's softball and Recreational Sports (Rec Sports) Intramural softball players.

1.2 INTRODUCTION

1.2.1 PURPOSE OF THE EIR

This environmental impact report (EIR) evaluates the potential for significant environmental impacts from the proposed project. This summary highlights the major areas of importance in the environmental analysis for the proposed project, as required by Section 15123 of the California Environmental Quality Act (CEQA) Guidelines. It provides a brief description of the proposed project, alternatives to the proposed project, areas of controversy known to the university, and conclusions of the environmental impact analysis. For a complete description of the proposed project, see Chapter 3, Project Description, for the environmental impact analysis, see Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, and for a discussion of alternatives to the proposed project, see Chapter 6, Alternatives to the Proposed Project.

This Draft EIR addresses the environmental effects associated with adoption and implementation of the proposed project. CEQA requires that public agencies, prior to taking action on projects over which they have discretionary approval authority, consider the environmental consequences of such projects. An EIR is a public document

[1] Title IX is a portion of the United States Education Amendments of 1972 that makes it illegal to discriminate against a person on the basis of sex in any federally funded activity and applies to all aspects of education, including athletics programs. As it relates to athletics, one of the requirements of Title IX is that women and men be provided equitable opportunities to participate in sports.

designed to provide lead agencies, other local and State governmental agency decision-makers, and the public with an analysis of potential environmental consequences of a proposed project to support informed decision-making.

This Draft EIR has been prepared pursuant to the requirements of CEQA[2] and the State CEQA Guidelines[3] to determine if approval of the identified discretionary action and proposed development could have a significant impact on the environment. The Board of Regents of the University of California (the Regents), or its designee pursuant to the University's delegation policies, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable UC Berkeley technical personnel and review of all technical reports. Information for this Draft EIR was obtained from on-site field observations; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments and technical studies.

UC Berkeley is part of the University of California (UC), 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, the UC is not subject to the regulations of local non-state agencies, such as those that may be found in the City of Berkeley General Plan or land use ordinances, for uses on property owned or controlled by the UC that are in furtherance of the UC's educational purposes. As such, UC Berkeley will not consider local plans, policies and regulations in its evaluation of the environmental effects of the proposed project unless needed to provide appropriate context for the assessment of environmental impacts and/or if UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. The Regulatory Framework section within each technical section of Chapter 4, Environmental Setting, Impacts and Mitigation Measures specifies whether and how local plans, policies, and regulations are used in this Draft EIR.

1.2.2 SCOPE OF THE EIR

An initial study was prepared and circulated with the Notice of Preparation for the proposed project in November 2022 (see Appendix A-1, Notice of Preparation/Initial Study and Scoping Comments). The Initial Study indicates that the proposed project would result in no impacts or less-than-significant impacts in the following environmental resource topics: agriculture and forestry resources, air quality, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems. Chapter 5, Other CEQA Considerations, summarizes the results of the Initial Study and further elaborates on these results where needed to respond to scoping comments or to account for additional information that has become available since the release of the Initial Study in November 2022. Therefore, these environmental resource topics are not evaluated in detail in this Draft EIR. Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, of this Draft EIR provides a detailed evaluation of the following environmental resource topics: aesthetics, biological resources, cultural and tribal cultural resources, noise, transportation, and wildfire. Section 1.7, Impacts and Mitigation Measures, provides a summary of the environmental impacts associated with implementation of the proposed project for these environmental resource topics.

[2] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 et seq.

[3] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387.

1.3 OVERVIEW OF PROPOSED PROJECT

1.3.1 PROJECT LOCATION AND SETTING

The project site is located within the Hill Campus West of UC Berkeley and the Strawberry Canyon Recreation Area at the site of the existing Cal Softball Field. The project site includes the Cal Softball Field and Witter Lot located on Centennial Drive, portions of Centennial Drive right-of-way and sidewalk, and utility facilities located at the southeast corner of the Centennial Drive and Stadium Rim Way intersection. Witter Rugby Field is directly to the west of the project site, and Strawberry Canyon Recreation and Pool are to the northeast. California Memorial Stadium is located at the terminus of Centennial Drive to the west. Immediately south of the project site is a densely wooded area that includes an unnamed recreational trail running eastward up into the Hill Campus East from the western end of Canyon Road. Beyond the wooded area to the south of the project site is the Panoramic Hill Neighborhood. Witter Lot, a 110-space campus permit parking lot for faculty, staff, and students, is located along the northern edge of the project site.

1.3.2 PROJECT OVERVIEW

Consistent with its Title IX commitment to provide equitable athletics facilities for male and female student athletes, UC Berkeley proposes to renovate and improve the existing Cal Softball Field to preserve and upgrade the existing softball facility to meet modern safety and NCAA competition standards for the Cal women's softball and Rec Sports Intramural softball players, as well as support campus compliance with Title IX. The use of the softball facility would remain the same. Proposed changes to the existing facility would include providing additional spectator and player amenities and permanent seating for up to 1,511 spectators, up from approximately 1,340 spectator seats under existing conditions. The primary physical changes associated with the project would include providing additional permanent spectator seats in place of temporary bleachers, a press box, spectator concourse, competition-grade lights, restrooms, public address system, expanded playing field dimensions, team and locker rooms, a ticket booth, improved training facilities (e.g., batting cages), entry plaza, landscaping, sustainable design features, access and bus stop improvements and utilities. The proposed project would remove approximately 85 parking spaces and retain approximately 25 parking spaces in the existing Witter Lot, provide for a new roundabout on the northeast corner of the site near the Strawberry Canyon pool entrance, and upgrade the existing sidewalk along the project frontage on Centennial Drive. The proposed project also includes the implementation of applicable project-specific UC Berkeley university continuing best practices, a project-specific transportation demand management plan, and a project-specific wildfire management plan.

The renovated softball field would be use somewhat more frequently than the existing softball field. During the fall, the facility would be primarily used for practices, intramural play, camps/clinics, and other occasional daytime competitions. During the spring semester, the facility use would be comparatively more active, with up to 21 regular season softball events and up to 4 post-season events, as well as practices and intramural sports and activities when not scheduled for Cal women's softball use. Overall, competitive games would increase somewhat from 15 to 20 under existing conditions to up to 25 with the proposed project. During the summer, the facility would not be used for competition, but would be used for intramural recreation, as well as Rec Sports summer camps (same as existing uses). Non-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.

A full description of the proposed project, including a table summarizing existing and proposed operations, is provided in Chapter 3, Project Description.

1.3.3 PROJECT OBJECTIVES

The fundamental purpose of the UC Berkeley Cal Softball Field Renovation Project is to provide an equitable facility for women's softball. As such, the university's objectives for the UC Berkeley Cal Softball Field Renovation Project are to:

1. Support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports and improving the training and competition facilities provided to female student athletes who participate in the Cal women's softball program.
2. Ensure the women's softball field is in a location with walkable access to campus academic and athletic resources.
3. Meet NCAA design requirements for softball fields to accommodate the need for the Cal women's softball team to practice and compete, including evening games, on a NCAA compliant field and to host home playoff games on campus, consistent with the facilities and opportunities provided to university male student athletes. NCAA design requirements include:
    a. Minimum field dimensions - The outfield fences need to be 190 feet down the right and left field baselines, and 220 feet to the centerfield.
    b. Seating capacity - A facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament. The women's softball team would have to qualify for post-season play for the NCAA to consider UC Berkeley as a host for a playoff game.
    c. Competition-grade lighting - Lighting must meet NCAA best lighting practices for standard intercollegiate play. In accordance with the NCAA Best Lighting Practices for Softball, for Regional and National Broadcasts (NCAA 2011), lighting specifications include:
        i. Horizontal light levels: 100 footcandles infield/70 footcandles outfield.
        ii. Vertical light levels:
            1. 70 footcandles infield/40 footcandles outfield to high home plate camera.
            2. 70 footcandles infield/40 footcandles outfield to 1st baseline camera.
            3. 70 footcandles infield/40 footcandles outfield to 3rd baseline camera.
        iii. Grid spacing: 20 feet x 20 feet.
4. Improve the existing recreational facility at the Cal Softball Field to meet the needs, and enhance the experience, of the current student body and the community. This aligns with Berkeley campuswide land use objective to "Modernize and adapt existing buildings through strategic renovation projects that support current and future needs and pedagogies, and to improve space utilization and efficiency. Take advantage of these opportunities to maximize long-term flexibility."
5. Upgrade existing infrastructure surrounding Cal Softball Field, including Americans with Disabilities Act (ADA) access, sidewalks, transit stops, and utilities, in a cost-effective manner as project site acreage and other site constraints allow.
6. Prioritize renovation of existing recreational facilities to ensure adequate land remains available in the central campus for academic or research buildings. This aligns with the Berkeley campuswide land use objective to "Make the highest and best use of each site to employ limited land resources most efficiently. To the extent possible, prioritize utilization of infill or undeveloped sites for facility development to accommodate program needs, taking into consideration site setting and context, adjacent uses, and coordination with existing landscape, infrastructure, and mobility systems."

1.4 ALTERNATIVES TO THE PROPOSED PROJECT

CEQA Guidelines Section 15126.6 requires that an EIR describe and evaluate alternatives to the proposed project that feasibly attain most of the basic objectives of the project and avoid or substantially lessen any of the significant effects of the project. The following alternatives are evaluated in Chapter 6, Alternatives:

- **Alternative 1: No Project Alternative** – Alternative 1 consists of the circumstances under which the proposed project does not proceed. Under this alternative, the existing softball field would remain on the site and would continue to be used, as under existing conditions.
- **Alternative 2: Reduced Project Alternative** – Alternative 2 consists of the renovation of the existing Cal Softball Field with all proposed project components with the exception that the seating capacity would be reduced, as compared to both existing conditions and the proposed project.
- **Alternative 3: No Games After Dark Alternative** – Alternative 3 consists of the renovation of the existing Cal Softball Field but without field lighting, as no games after dark would be allowed and therefore no new field lighting would be provided and the use of the existing temporary field lighting would be eliminated.
- **Alternative 4: Comprehensive Project Alternative** – Alternative 4 consists of the development of the proposed project at the University Village Albany on the site of an existing softball field. Alternative 4 would include all proposed project components with the exception that a wildfire protection plan would not be required, as the site is located outside of the Very High Fire Hazard Severity Zone.

The CEQA Guidelines (Section 15126.6[a]) requires that an EIR's analysis of alternatives identify the "environmentally superior alternative" among all of those considered. In addition, Section 15126.6(e)(2) states that if the environmentally superior alternative is the No Project Alternative, the EIR must also identify an environmentally superior alternative among the other alternatives. There is no set methodology for comparing the alternatives or determining the environmentally superior alternative under CEQA. Identification of the environmentally superior alternative involves the Regents, or its designee, as lead agency, weighing and balancing all of the environmental resource areas. Based on the conclusions presented in Chapter 6, Alternatives, the environmentally superior alternative would be Alternative 2 (Reduced Project Alternative). However, Alternative 2 would not comply with NCAA standards (seating for 1,500 spectators) and would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX and would not meet a number of other project objectives.

1.5 ISSUES TO BE RESOLVED

CEQA Guidelines Section 15123(b)(3) requires that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. Regarding the proposed project, the major issues to be resolved include decisions by the Regents, or its designee pursuant to the university's delegation policies, as lead agency, related to:

- Whether this EIR adequately describes the environmental impacts of the proposed project.
- Whether the benefits of the proposed project override environmental impacts, if any, that cannot be feasibly avoided or mitigated to a level of insignificance.
- Whether there are other mitigation measures that should be applied to the proposed project besides those continuing best practices and/or mitigation measures identified in the EIR.

- Whether there are any alternatives to the proposed project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic objectives.

1.6 KNOWN AREAS OF CONTROVERSY

The Notice of Preparation (NOP) for this EIR was circulated for a 33-day comment period from November 2, 2022 to December 5, 2022. The NOP was circulated to the State Clearinghouse and to state, regional, and local agencies in accordance with the CEQA Guidelines. A public scoping meeting regarding the scope of the analysis for the Draft EIR was held on November 17, 2022. A total of seven comment letters were received from two agencies, two organizations, and three individuals. The public comments are included in Appendix A-2, Scoping Comments.

The following is a discussion of issues that are likely to be of particular concern to agencies and interested members of the public during the environmental review process. Every concern applicable to the CEQA process is addressed in this Draft EIR, but this list is not necessarily exhaustive; rather, it attempts to capture concerns that are likely to generate the greatest interest based on the input received during the scoping process.

- **Aesthetics.** Lighting impacts on nearby residents during softball games and practices; cumulative lighting impacts from other athletic facilities in the project area.
- **Biological Resources.** Noise and lighting impacts on wildlife; potential habitat impacts.
- **Cultural Resources.** Potential impacts related to the Panoramic Hill Historic District and Strawberry Canyon.
- **Noise.** Impacts related to operational noise during softball games and practices; potential impacts related to the "canyon" setting of the project area; cumulative noise impacts for instances that multiple athletic events occur simultaneously in the project area.
- **Transportation.** Existing and future traffic conditions; pedestrian and bicyclist safety, particularly for those accessing the project site and adjacent Strawberry Canyon Recreation and Pool; emergency access and evacuation.
- **Wildfire.** Potential impacts related to emergency evacuation planning and response.

All substantive environmental issues raised in the comment letters received in response to the NOP have been addressed or otherwise considered during preparation of this Draft EIR.

1.7 IMPACTS AND MITIGATION MEASURES

This subsection provides a summary of the environmental impacts associated with implementation of the proposed project. This section includes a summary of the impacts and mitigation measures. Table 1-1 provides a complete list of the proposed project's environmental impacts, including the level of significance before and after mitigation, based on the analysis and conclusions presented in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. Significant unavoidable project impacts have been identified in this EIR related to temporary construction noise (see Section 4.5, Noise, Impact NOI-1) and related to project and cumulative vehicle miles traveled (see Section 4.6, Transportation, Impact TRA-2 and Impact TRA-5). For a complete description of all potential impacts, please refer to the specific discussions in Sections 4.2 through 4.7 of this Draft EIR. Additionally, Chapter 5, CEQA Considerations, summarizes the impact conclusions from the Initial Study, as described in Section 1.2.2, Scope of the EIR.

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Aesthetics			
Impact AES-1: Scenic Vistas. The proposed project would not result in a substantial adverse effect on a scenic vista.	Less than Significant	None	Less than Significant
Impact AES-2: Visual Character. The proposed project is in a non-urbanized area and would not substantially degrade the existing visual character or quality of public views.	Less than Significant	None	Less than Significant
Impact AES-3: Light and Glare. The proposed project would not create a new source of substantial light and glare which would adversely affect day or nighttime views in the area.	Less than Significant	None	Less than Significant
Impact AES-4: Cumulative Impacts Related to Aesthetics. The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact related to aesthetics.	Less than Significant	None	Less than Significant
Biological Resources			
Impact BIO-1: Candidate, Sensitive, or Special-Status Species. The proposed project would have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by California Department of Fish and Game or U.S. Fish and Wildlife Service.	Potentially Significant	**MM BIO-1:** Within 14 days prior to the onset of any vegetation removal or demolition activities at the southeastern corner of the site, a qualified biologist shall determine if the San Francisco dusky-footed woodrat stick houses shown in Figure 4.3-5 are active using peer-accepted methods (e.g., mimicking woodrat "tail rattle" and listening for a response). If the biologist determines that the houses are unoccupied, no further action would be required. If the biologist determines that the houses are occupied or potentially occupied and that project activities could result in woodrat mortality, the following measures would be implemented: • The biologist shall consult with the contractor to determine if the houses can be avoided. If so, the contractor, under direction of the biologist, shall install a 10-foot-radius exclusion zone around each house using pin flags, orange safety cones, wood lathe, or similar in which no activity would occur until the project is complete.	Less than Significant

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• If the house(s) cannot be avoided, the contractor, under direction of the biologist, shall dismantle the houses by hand or using small machinery and move the woody materials to similar habitat outside the project footprint. These dismantling activities shall only occur in the early morning during the non-breeding (October to February), however, so that any adults or non-dependent young would be able to escape into adjacent habitat during the dismantling activity.	
Impact BIO-2: Riparian Habitat or Other Sensitive Natural Communities. The proposed project would not 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 Game or U.S. Fish and Wildlife Service.	Less than Significant	None	Less than Significant
Impact BIO-3: State or Federally Protected Wetlands. The proposed project would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means.	Less than Significant	None	Less than Significant
Impact BIO-4: Resident or Migratory Fish and Wildlife Movement and Native Wildlife Nursery Sites. The proposed project would not 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.	Less than Significant	None	Less than Significant
Impact BIO-5: Cumulative Impacts on Biological Resources. The proposed project, in combination with past, present, and reasonably	Less than Significant	None	Less than Significant

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
foreseeable projects, would not result in significant cumulative impacts with respect to biological resources.			
Cultural Resources			
Impact CUL-1: Built Environment Historical Resources. The proposed project would not cause a substantial adverse change in the significance of a (built environment) historical resource.	Less than Significant	None	Less than Significant
Impact CUL-2: Archaeological Resources. The proposed project may cause a substantial adverse change in the significance of unique archaeological resources or historical resources of an archaeological nature.	Potentially Significant	**MM CUL-1:** For project ground-disturbing activities (including, but not limited to, soil removal, parcel grading, new utility trenching, and foundation-related excavation), UC Berkeley shall implement the following measures to ensure impacts to archaeological resources will be less than significant: • 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 of the project (whether or not an archaeologist is present), the following measures shall be implemented: o All soil disturbing work within 35 feet of the find shall cease. o 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 within the project area to determine whether the resource is significant and would be affected by the project. o 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. o If the resource is a tribal cultural resource, the consulting archaeologist 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.	Less than Significant

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• 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, the 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 lead agency for regulatory compliance, California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required.	
Impact CUL-3: Human Remains. The proposed project may disturb human remains interred outside of dedicated cemeteries.	Less than Significant	None	Less than Significant
Impact CUL-4: Tribal Cultural Resources. The proposed project may result in a substantial adverse change to a tribal cultural resource.	Potentially Significant	Implement MM CUL-1 (see Impact CUL-2 above for a description of this measure).	Less than Significant
Impact CUL-5: Cumulative Cultural Resource and Tribal Cultural Resource Impacts. The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact related to cultural resources and tribal cultural resources.	Less than Significant	Implement MM CUL-1 (see Impact CUL-2 above for a description of this measure).	Less than Significant
Noise			
Impact NOI-1: Temporary or Permanent Increase in Ambient Noise. The proposed project could generate a substantial temporary 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	Significant (Construction Noise) Less than Significant (Operational Noise)	**MM NOI-1: Construction Noise.** The proposed project shall implement the following measures related to construction noise: Restrict demolition/construction activities and use of equipment that have the potential to generate significant noise levels (e.g., use of concrete saw, mounted impact hammer, jackhammer, rock drill, etc.) to between the hours of 8:00 a.m. and 5:00 p.m. ▪ Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal-	Significant and Unavoidable (Construction Noise) Less than Significant (Operational Noise)

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
applicable standards of other agencies, but would not generate a substantial permanent increase in such ambient noise levels.		combustion-powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed the manufacturer's specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function, and minimization of noise. • Pumps that are not submerged and aboveground conveyor systems shall be located within acoustically treated enclosures, shrouded, or shielded to prevent the propagation of sound into the surrounding areas. • Portable and stationary site support equipment (e.g., generators, compressors, rock crushers, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors. • Impact tools shall have the working area/impact area shrouded or shielded whenever possible, with intake and exhaust ports on power equipment muffled or suppressed. This may necessitate the use of temporary or portable, application-specific noise shields or barriers. • Construction equipment shall not be idled for extended periods (i.e., 5 minutes or longer) of time in the immediate vicinity of noise-sensitive receptors. • A temporary noise barrier shall be erected along the construction site perimeter, of a minimum height of 12 feet. Such a temporary noise barrier will be constructed with solid material with a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the temporary noise barrier and may be lined on the construction side with an acoustical blanket, curtain, or equivalent absorptive material.	
Impact NOI-2: Excessive Vibration. The proposed project would not result in excessive groundborne vibration or groundborne noise levels.	Less than Significant	None	Less than Significant
Impact NOI-3: Cumulative Noise Impacts. The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact related to noise.	Less than Significant	None	Less than Significant
Transportation			
Impact TRA-1: Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System. The proposed project would not	Potentially Significant	**MM TRA-1:** UC Berkeley shall implement measures to improve pedestrian safety and connectivity along Stadium Rim Way, Centennial Drive, and portions of Canyon Road leading to the Cal Softball Field, in order to facilitate safe egress and ingress of spectators before and after typical and maximum events. Specific measures shall be posted on the UC	Less than Significant

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle facilities. However, the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system related to pedestrian facilities.		Berkeley Intercollegiate Athletics (IA) website to provide spectators with several pedestrian travel routes to/from adjacent parking facilities. UC Berkeley shall also monitor the implementation of the measures and will refine such measures when warranted. Specific measures include, but are not limited to the following: • Stadium Rim Way (north of Centennial Drive) o Missing bollards along the stadium side of the road shall be replaced and maintained. o Wayfinding signage leading from the Stadium Garage to the Cal Softball Field shall be installed to lead pedestrians along the stadium edge towards the Stadium Rim Way/Centennial Drive intersection. o Painted pedestrian markings and rumble strips shall be installed to provide cohesive walkways from the existing Stadium Rim Way sidewalk and staircases from the Stadium Garage to and across the Stadium Rim Way/Centennial Drive intersection. • Stadium Rim Way/Canyon Road (south of Centennial Drive) o Missing bollards along the stadium side of the road shall be replaced and maintained. o Wayfinding signage leading from parking areas from the south to the Cal Softball Field shall be installed to lead pedestrians along the stadium edge towards the Stadium Rim Way/Centennial Drive intersection. o Painted pedestrian markings and rumble strips shall be installed to provide cohesive walkways from the existing Canyon Road sidewalk. • Stadium Rim Way/Centennial Drive intersection o Intersection shall be repainted with new striping, markings, and new stop-signs. o Vegetation along the southeast corner of the intersection shall be trimmed and managed to enhance visibility of pedestrians to oncoming traffic. o With the discretion of IA, a temporary crossing guard may be used to facilitate pedestrian traffic during maximum events.	
Impact TRA-2: Vehicle Miles Traveled. The proposed project could conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b).	Potentially Significant	No feasible mitigation measures identified.	Significant and Unavoidable
Impact TRA-3: Geometric Design Hazards. The proposed project would not substantially increase hazards due to a geometric design feature or incompatible use.	Less than Significant	None	Less than Significant

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact TRA-4: Emergency Access. The proposed project would not result in inadequate emergency access.	Less than Significant	None	Less than Significant
Impact TRA-5: Cumulative Transportation Impacts. The proposed project, in combination with past, present, and reasonably foreseeable projects, could result in a significant cumulative impact related to transportation from vehicle miles traveled.	Potentially Significant	None	Significant and Unavoidable
Wildfire			
Impact WF-1: Impairment of Emergency Response or Evacuation Plan. The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan	Less than Significant	None	Less than Significant
Impact WF-2: Exacerbate Wildfire Risks. The proposed project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, or other factors.	Less than Significant	None	Less than Significant
Impact WF-3: Fire Risk Associated with Infrastructure. The proposed project would not exacerbate fire risk or cause temporary or ongoing impacts to the environment due to the installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities).	Less than Significant	None	Less than Significant

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact WF-4: Expose People or Structures to Significant Environmental Risks. The proposed project would not 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.	Less than Significant	None	Less than Significant
Impact WF-5: Expose People or Structures to Significant Risks from Wildfire. The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	Less than Significant	None	Less than Significant
Impact WF-6: Cumulative Wildfire Impacts. The proposed project would not result in a cumulatively considerable impact regarding wildfire.	Less than Significant	None	Less than Significant

2. Introduction

This environmental impact report (EIR) has been prepared for the University of California, Berkeley (UC Berkeley or university) UC Berkeley Cal Softball Field Renovation Project (project or proposed project). This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA), which is found in the California Public Resources Code, Division 13, and with the CEQA Guidelines, which are found in Title 14 of the California Code of Regulations, commencing with Section 15000. According to CEQA Guidelines Section 15378, the proposed project is considered a "project" subject to environmental review. The implementation of the proposed project is "an action [undertaken by a public agency] which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment." The Board of Regents of the University of California (the Regents) is the lead agency for the proposed project and capital projects are approved by the Regents, or by their delegate depending on the characteristics of the project. This project will be approved by the UC Berkeley Chancellor. Under CEQA, the lead agency for a project is the public agency with primary responsibility for carrying out or approving the project, and for implementing the requirements of CEQA. As stated in CEQA Guidelines Section 15002, the basic purposes of CEQA are to:

- Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Pursuant to CEQA Guidelines Section 15121, an EIR is an informational document that is required to (1) identify the potentially significant environmental effects of a project on the environment, (2) indicate the manner in which those significant effects can be avoided or significantly lessened via the implementation of potentially feasible mitigation measures, (3) identify a reasonable range of potentially feasible alternatives to a project that would eliminate or substantially lessen any significant environmental effects, and (4) identify any significant and unavoidable adverse impacts that cannot be mitigated or otherwise reduced. When considering whether to approve a proposed project, the lead agency's decision-making body must consider the information in the EIR along with other information which may be presented to that body. While the information in the EIR does not control the ultimate decision about a project, prior to approving the project the decision-making body must consider the information in the EIR and respond to each significant effect identified in the EIR by making findings pursuant to Public Resources Code Section 21081.

Pursuant to Public Resources Code Section 21002, public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures which would substantially lessen the significant environmental effects of such projects. Furthermore, pursuant to CEQA Guidelines Section 15021, CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible. In deciding whether mitigation measures or alternatives are feasible, an agency may consider specific economic, environmental, legal, social, and technological factors. As defined in Section 15364 of the CEQA Guidelines, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

CEQA Guidelines Section 15021 further indicates that, under CEQA, a public agency has an obligation to balance a variety of public objectives, including economic, environmental, and social factors, in determining whether and how a project should be approved. CEQA Guidelines Section 15093 provides that, if an agency decides to approve a project that will cause one or more significant effects on the environment, the agency must prepare a "statement of overriding considerations" to reflect the ultimate balancing of competing public objectives. The environmental review process is further explained below in Section 2.3, Environmental Review and Approval Process.

UC Berkeley is part of the University of California (UC), 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, the UC is not subject to local land use policies, such as those that may be found in the City of Berkeley General Plan or land use ordinances, whenever using property under its control in furtherance of its educational purposes.

2.1 PROJECT OVERVIEW

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.[1] The Cal Softball Field does not meet current National Collegiate Athletic Association (NCAA) standards for field dimensions, seating, and lighting. This puts the Intercollegiate Athletic (IA) Women's Softball Program (Cal women's softball) 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, UC Berkeley proposes to renovate and improve the existing Cal Softball Field, which is the home of Cal women's softball.[2] The project would preserve and upgrade the existing softball facility to meet modern safety and competition standards for Cal women's softball and Recreational Sports (Rec Sports) Intramural softball players, as well as support campus compliance with Title IX. The use of the softball facility would remain the same. Proposed changes to the existing facility would include providing additional spectator and player amenities and seating for up to 1,511 spectators, up from approximately 1,340 spectator seats under existing conditions. The primary physical changes associated with the project would include providing additional permanent spectator seats in place of portable bleachers, a press box, spectator concourse, competition-grade lights, restrooms, public address system, expanded playing field dimensions, team and locker rooms, a ticket booth, improved training facilities (e.g., batting cages), entry plaza, landscaping, sustainable design features, access and bus stop improvements and utilities. The proposed project would remove approximately 85 parking spaces and retain approximately 25 parking spaces in the existing Witter Lot, provide for a new roundabout on the northeast corner of the site near the Strawberry Canyon pool entrance, and upgrade the existing sidewalk along the project frontage on Centennial Drive. The proposed project also includes the implementation of applicable UC Berkeley university continuing best practices, a project-specific transportation demand management plan and a wildfire protection plan.

[1] Title IX is a portion of the United States Education Amendments of 1972 that makes it illegal to discriminate against a person on the basis of sex in any federally funded activity and applies to all aspects of education, including athletics programs. As it relates to athletics, one of the requirements of Title IX is that women and men be provided equitable opportunities to participate in sports.

[2] The Cal Softball Field was previously called the Levine-Fricke Softball Field.

The renovated softball field would be used somewhat more frequently than the existing softball field. During the fall, the facility would be primarily used for practices, intramural play, camps/clinics, and other occasional daytime competitions. During the spring semester, the facility use would be comparatively more active, with up to 21 regular season softball events and up to 4 post-season events, as well as practices and intramural sports and activities when not scheduled for Cal women's softball use. Overall, competitive games would increase from 15 to 20 under existing conditions to up to 25 with the proposed project. During the summer, the facility would not be used for competition, but would be used for intramural recreation, as well as Rec Sports summer camps (same as existing uses). Non-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.

A full description of the proposed project, including a table summarizing existing and proposed operations, is provided in Chapter 3, Project Description.

2.2 EIR SCOPE

2.2.1 TYPE AND SCOPE OF EIR

As described in CEQA Guidelines Section 15161, this EIR is a "project" EIR. A project EIR examines the environmental impacts of a specific project, focusing primarily on the changes in the environment that would result from the project components identified in Section 2.1, Project Overview and described in detail in Chapter 3, Project Description. This EIR examines the physical environmental effects that would result from all phases of the project, including planning, construction, and operation, pursuant to CEQA Guidelines Section 15161.

An initial study was prepared and circulated with the Notice of Preparation for the proposed project in November 2022 (see Appendix A-1 and A-2, Notice of Preparation/Initial Study and Scoping Comments). The Initial Study indicates that the proposed project would result in either no impacts or less-than-significant impacts in the following environmental resource topics: agriculture and forestry resources, air quality, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials,[3] hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems. Chapter 5, Other CEQA Considerations, summarizes the results of the Initial Study and further elaborates on these results to respond to scoping comments. Therefore, these environmental resource topics are not evaluated in detail in this Draft EIR. In the sections of Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, this EIR provides a detailed evaluation of the following environmental resource topics:

- Aesthetics
- Biological Resources
- Cultural and Tribal Cultural Resources
- Noise
- Transportation
- Wildfire

As indicated above, the environmental review focuses on the potentially significant environmental effects of the proposed project. As defined in CEQA Guidelines Section 15382, a "significant effect on the environment" is "a

[3] Initial Study Section 2.9, Hazards and Hazardous Materials, includes a question related to adopted emergency response or emergency evacuation plans (question f) and a question related to wildfire risks (question g). The Initial Study indicates that these questions will be addressed in the Wildfire section of this EIR.

substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether a physical change is significant."

In evaluating the significance of the environmental effect of a project, the CEQA Guidelines require the lead agency to consider direct physical changes in the environment and reasonably foreseeable indirect physical changes in the environment which may be caused by the project (CEQA Guidelines Section 15064[d]). A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project. An indirect physical change in the environment is a physical change in the environment that is not immediately related to the project, but which is caused indirectly by the project. An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

CEQA Guidelines Section 15064(e) further indicates that economic and social changes resulting from a project shall not be treated as significant effects on the environment, although they may be used to determine that a physical change shall be regarded as a significant effect on the environment. In addition, where a reasonably foreseeable physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project.

2.3 ENVIRONMENTAL REVIEW AND APPROVAL PROCESS

2.3.1 SCOPING

CEQA Guidelines Section 15083 authorizes and encourages an early consultation or scoping process to help identify the range of actions, alternatives, mitigation measures, and significant effects to be analyzed and considered in an EIR, and to help resolve the concerns of affected regulatory agencies, organizations, and the public. Scoping is designed to explore issues for environmental evaluation, ensuring that important considerations are not overlooked and uncovering concerns that might otherwise go unrecognized.

The Notice of Preparation (NOP) for this EIR was circulated for a 33-day comment period from November 2, 2022, to December 5, 2022. The NOP was circulated to the State Clearinghouse and to state, regional, and local agencies in accordance with the CEQA Guidelines. As described in the NOP, UC Berkeley disclosed that an EIR would be required for the proposed project and that an Initial Study would be used to assess the potential for project impacts. As described above in Section 2.2.1, UC Berkeley prepared an Initial Study to help determine if the project may have a significant effect on the environment. Based on the NOP and Initial Study, which are included in Appendix A-1, Notice of Preparation and Initial Study, certain topics were determined not to require detailed discussion within the EIR (see Section 2.2.1, above). A public scoping meeting regarding the scope of the analysis for the EIR was held on November 17, 2022, conducted online via a live video feed.

A total of seven comment letters were received including from two agencies, two organizations, and three individuals. The public comments are included in Appendix A-2, Scoping Comments.

2.3.2 PUBLIC REVIEW OF THE DRAFT EIR

This Draft EIR was published and circulated for review and comment by the public and other interested parties, agencies, and organizations for a 45-day public review period starting December 13, 2023, and ending January 29, 2024. The Draft EIR is available for public review as follows:

- The Draft EIR is available online at: https://capitalstrategies.berkeley.edu/environmental-review
- In addition to the digital copy of the Draft EIR available online at the above website, a printed copy of the Draft EIR is available for public review during the comment period at the following locations:
  - 1 A&E, Berkeley, CA-94720 (By appointment only; please call 510-495-5786 for appointment)
  - College of Environmental Design Library, 210 Bauer Wurster Hall, Berkeley, CA 94720.

During the comment period, an online public hearing will be held to receive public comments on the Draft EIR on January 24, 2024, at 5:00pm. The public is invited to provide written comments via mail or email on the Draft EIR to UC Berkeley by 5:00 p.m. on January 29, 2024, to the contact shown below.

Cal Softball Field Renovation Project Draft EIR
Shraddha Navalli Patil, Senior Planner
Physical & Environmental Planning
University of California, Berkeley
200 A&E Building
Berkeley, California 94720-1382

Email: planning@berkeley.edu (please include "Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project" as the subject line. Public agencies providing comments are asked to include a contact person for the agency.)

CEQA Guidelines Section 15204(a) provides guidance on the focus of review of EIRs, indicating that in reviewing draft EIRs, persons and public agencies "should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated," and that comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. This section further states that "reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR."

2.3.3 FINAL EIR AND CONSIDERATION OF PROJECT APPROVAL

Following the close of the public comment period for this Draft EIR, UC Berkeley will review all comments and prepare written responses to comments raising significant environmental issues regarding the proposed project. The Final EIR will then be prepared, and will include all of the comments received, written responses to those comments in accordance with CEQA Guidelines Section 15088, and any text changes to the Draft EIR that become necessary after consideration of public comments. Those who submitted comments on the Draft EIR will be notified

of the availability of the Final EIR and the date and location of the public hearing to consider the certification of the EIR and approval of the proposed project.

All responses to comments submitted on the Draft EIR by public agencies will be provided to those agencies at least 10 days prior to certification of the EIR. The Final EIR (consisting of this Draft EIR and the response to comments document) will be presented for a final decision on the proposed project. The design approval is delegated to the UC Berkeley Chancellor, acting on behalf of the Regents pursuant to the University's delegation policies, who is then responsible for reviewing and considering the CEQA document at the time of her decision. Prior to making a decision to approve the project, the Chancellor must certify that she has reviewed and considered the information in the EIR, that the EIR has been completed in conformity with the requirements of CEQA, and that the document reflects the UC's independent judgment. If the Chancellor finds that the Final EIR is "adequate and complete," she may certify the EIR in accordance with CEQA and then consider project approval. When a public agency approves a project covered by an EIR, CEQA requires that the public agency must adopt a program to monitor and report on mitigation measures pursuant to that EIR. CEQA requires that such a program be adopted at the time the agency approves a project or determines to carry out a project for which an EIR has been prepared. This requirement ensures that mitigation measures identified in the EIR are implemented. The Mitigation Monitoring and Reporting Program for the proposed project will be prepared and considered by the Chancellor in conjunction with the Final EIR.

The Chancellor may find that certain mitigation measures are outside the jurisdiction of UC Berkeley to implement, or that no feasible mitigation measures have been identified for a given significant impact, or that the efficacy of a mitigation measure may be uncertain or not sufficient to reduce the significant impact to less than significant. To approve the project in those cases, the Chancellor would have to adopt a statement of overriding considerations if she determines that economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable, significant effects on the environment.

2.4 ORGANIZATION OF EIR

The content and format of this EIR are designed to meet the requirements of CEQA and the CEQA Guidelines (Sections 15122 through 15132). This EIR is organized into the following chapters:

- **Chapter 1, Executive Summary**, describes the purpose and scope of the EIR, presents an overview of the proposed project, provides a summary of the impacts of the proposed project and mitigation measures, provides a summary of the alternatives being considered, includes a discussion of known areas of controversy, and any issues to be resolved.
- **Chapter 2, Introduction**, explains the CEQA process, describes the scope and purpose of this EIR, provides information on the review and approval process, lists the likely approvals for the proposed project, and outlines the organization of this EIR.
- **Chapter 3, Project Description**, provides information about the location of the proposed project, identifies project objectives, provides a detailed description of the proposed project components and operational and construction details, and provides the planning context for the proposed project.
- **Chapter 4, Environmental Setting, Impacts, and Mitigation Measures**, provides the environmental analysis for the proposed project. Section 4.1, Introduction to Analyses, includes a description of the scope of the analysis and cumulative conditions. For the subsequent sections pertaining to the environmental resource topics for which a detailed analysis is provided, each section presents information in three parts: environmental setting; regulatory framework; and impacts, including cumulative impacts, if any, and mitigation measures.

- **Chapter 5, Other CEQA Considerations,** evaluates the other topics required to be included in an EIR, including impacts not found to be significant, significant and unavoidable impacts, significant irreversible environmental changes, and growth inducing impacts.
- **Chapter 6, Alternatives,** evaluates alternatives to the proposed project that would eliminate or substantially reduce any significant impacts identified in the EIR while feasibly attaining most of the project objectives. Alternatives that were reviewed but eliminated from further consideration in the EIR are also discussed.
- **Chapter 7, References**, identifies the references cited throughout this EIR.
- **Chapter 8, List of Preparers**, identifies individuals who were involved in preparing this EIR.
- **Appendices** contain additional information used in preparing this EIR, including:
  - Appendix A contains the NOP/Initial Study and the public scoping comments that were submitted in response to the NOP/IS.
  - Appendix B contains the UC Berkeley continuing best practices that are implemented for all campus projects.
  - Appendix C provides the wildfire protection plan for the proposed project.
  - Appendix D provides the lighting analysis for the proposed project.
  - Appendix E contains the biological resources species observed and assessment of special-status species potential to occur.
  - Appendix F contains the *National Register of Historic Places Registration Form: Panoramic Hill.*
  - Appendix G contains the noise modeling outputs.
  - Appendix H provides the evacuation modeling report for the proposed project.

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3. Project Description

This chapter describes the proposed UC Berkeley Cal Softball Field Renovation Project (project or proposed project) evaluated in this environmental impact report (EIR). Topics addressed in this chapter include an overview of Title IX and women's sports at University of California, Berkeley (UC Berkeley or the university); an overview of the project; a description of the project location and existing conditions; the project objectives; a description of the project components; demolition and construction plans; and the planning context for this EIR.

3.1 GENDER EQUITY, TITLE IX AND WOMEN'S SPORTS AT UC BERKELEY

In 1972, Title IX of the Education Amendments of 1972 (20 USC 1681 et seq.) (Title IX) made it illegal for education institutions that receive federal funding to discriminate against a person on the basis of sex in any education program or activity, including athletics programs. As it relates to intercollegiate athletics, Title IX requires that schools provide men and women with gender equitable sport participation opportunities, including equitable participation, athletics-related financial aid, and treatment. This project exemplifies the University's continuing commitment to gender equity and Title IX compliance. The Cal Athletics Fund recently completed a Gender Equity Campaign, the first of its kind at UC Berkeley, designed specifically to elevate women's sports facilities at Cal. Cal Softball has a storied history with 32 NCAA Tournament appearances, 12 trips to the Women's College World Series, and 1 National Championship in 2002. Softball's success fits within the bigger context of the success of the University's Intercollegiate Athletics program for women and men. The University has also produced the fourth-most number of Olympic medals in history with 223, 96 of which have been earned by women.

Despite past success, UC Berkeley's Intercollegiate Athletics (IA) Women's Softball Program (Cal women's softball) has been operating from a sub-par facility. Renovating the Cal Softball Field will provide the Cal women's softball student-athletes the field dimensions required by the NCAA, accessible batting cages, locker rooms and restroom facilities onsite, a permanent seating area, a location to sell tickets, secure entry ways, lights, and the infrastructure necessary to be on broadcast television. The renovated facility will allow the University to host postseason competition, which is not currently possible because the existing facility does not meet NCAA standards for capacity, infrastructure, lighting or broadcast readiness. With such a notable past, the field renovation aims to help current and future generations of Cal women's softball student-athletes reach new levels of performance and represent the University at the highest level.

Cal's commitment to advancing women's sports has been underscored throughout its year-long celebration of 50 years of Title IX. Through each of the 12 months of celebration starting in June 2022, every Cal intercollegiate sports program dedicated one home event to mark the honor, including in-person appearances by female alums who had a significant impact on their sport in the community and nationally. Now 51 years old, Title IX continues to provide a beacon of inspiration for the Cal Athletics community and beyond. With or without an official celebration or special events, Cal Athletics continues to honor and work toward fulfilling the mission of game-changing legislation to ensure all student-athletes are afforded the equitable resources required to perform at the highest level.

Renovating the existing softball field rather than building the facility in another location is essential to meeting the University's commitment to gender equity and Title IX compliance by providing our women's softball team equitable access to Intercollegiate Athletics centralized student-athlete facilities and services. The proximity of the field to the

Simpson High Performance Center (“Simpson Center") at California Memorial Stadium gives the Cal women’s softball student-athletes the opportunity to take full advantage of the 142,000 square foot state of the art training facility, which houses a sports medicine department, academic service rooms, nutrition and food services, locker rooms, and student-athlete development services. Building a new field farther away from the Simpson Center would negatively impact the team and undermine the dual goals of gender equity and Title IX compliance. With such a notable past, the field renovation aims to help current and future generations of Golden Bears reach new levels of performance and represent the University at the highest level. With the renovated field and its proximity to the Simpson High Performance Center, Cal will further its goal to position Cal women’s softball student-athletes to compete at the highest level on and off the field, as well as in the community and post-graduation.

3.2 PROJECT OVERVIEW

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 Cal Softball Field does not meet current NCAA standards for field dimensions, seating, and lighting. This puts Cal women’s softball 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, UC Berkeley proposes to renovate and improve the existing Cal Softball Field to preserve and upgrade the existing softball facility to meet modern safety and NCAA competition standards for Cal women’s softball and Recreational Sports (Rec Sports) Intramural softball players, as well as support campus compliance with Title IX. The use of the softball facility would remain the same. Proposed changes to the existing facility would include providing additional spectator and player amenities and permanent seating for up to 1,511 spectators, up from approximately 1,340 spectator seats under existing conditions. The primary physical changes associated with the project would include providing additional permanent spectator seats in place of portable bleachers, a press box, spectator concourse, competition-grade lights, restrooms, public address (PA) system, expanded playing field dimensions, team and locker rooms, a ticket booth, improved training facilities (e.g., batting cages), entry plaza, landscaping, sustainable design features, access and bus stop improvements and utilities. The proposed project would remove approximately 85 parking spaces and retain approximately 25 parking spaces in the existing Witter Lot, provide for a new roundabout on the northeast corner of the site near the Strawberry Canyon pool entrance, and upgrade the existing sidewalk along the project frontage on Centennial Drive. The proposed project also includes the implementation of applicable project-specific UC Berkeley university continuing best practices, a project-specific transportation demand management plan and a project-specific wildfire protection plan.

The renovated softball field would be used somewhat more frequently than the existing softball field. During the fall, the facility would be primarily used for practices, intramural play, camps/clinics, and other occasional daytime competitions. During the spring semester, the facility use would be comparatively more active, with up to 21 regular season softball events and up to 4 post-season events, as well as practices and intramural sports and activities when not scheduled for Cal women’s softball use. Overall, competitive games would increase somewhat from 15 to 20 under existing conditions to up to 25 with the proposed project. During the summer, the facility would not be used for competition, but would be used for intramural recreation, as well as Rec Sports summer camps (same as existing uses). Non-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.

3.3 PROJECT LOCATION

UC Berkeley is located in the City of Berkeley, approximately 10 miles east of San Francisco (Figure 3-1). As shown in Figure 3-2, the project site is located within the Hill Campus West of UC Berkeley and the Strawberry Canyon Recreation Area (SCRA) at the site of the existing Cal Softball Field. The project site includes the Cal Softball Field and Witter Lot located on Centennial Drive, portions of Centennial Drive right-of-way and sidewalk, and utility facilities located at the southeast corner of the Centennial Drive and Stadium Rim Way intersection. The project site is accessible by car from major local streets, including but not limited to University Avenue, Hearst Avenue, Gayley Road, Stadium Rim Way, and Centennial Drive. Centennial Drive is an east–west roadway that extends between Stadium Rim Way and Grizzly Peak Boulevard (Figure 3-2). Regional transit access is provided by Bay Area Rapid Transit District (BART) and Alameda–Contra Costa Transit (AC Transit).

Witter Rugby Field is directly to the west of the project site, and Strawberry Canyon Recreation and Pool are to the northeast. California Memorial Stadium is located at the terminus of Centennial Drive to the west. Immediately south of the project site is a densely wooded area, which includes an unnamed recreational trail running eastward up into the Hill Campus East from the western end of Canyon Road. Beyond the wooded area to the south of the project site are hillside residential neighborhoods to the south and southwest of the site, including the Panoramic Hill Neighborhood.

Witter Lot, a 110-space campus permit parking lot for faculty, staff, and students, is located along the northern edge of the project site. In addition to Cal Softball Field, Witter Lot serves Witter Rugby Field and Strawberry Canyon Recreation and Pool. Access from Centennial Drive into the parking lot is provided in two locations. Stadium Rim Way and Centennial Drive also provide direct pedestrian and bicycle access to the project site. Typical pedestrian facilities in the project area include various segments of sidewalks and crosswalks.

3.4 EXISTING CONDITIONS

UC Berkeley began the construction of the SCRA in 1959, creating a recreational complex that was then composed of the Haas Clubhouse, Stern Pool, tennis courts, and an athletic field. UC Berkeley built the East Pool in 1967 to relieve overcrowding. The tennis courts were removed in 1993, and UC Berkeley built both the Witter Rugby Field and Cal Softball Field in 1995.

3.4.1 EXISTING CAL SOFTBALL FIELD CHARACTERISTICS

The Cal Softball Field is approximately 40,000 square feet (0.90 acres) and the total project site area is approximately 3 acres. The existing project site includes turf grass on the field, developed impervious surfaces and existing landscaping. The project site elevation ranges from 478 feet above mean sea level in the western corner of Witter Lot to 495 feet above mean sea level in the northeastern corner of the parking lot.

As shown on Figure 3-3, the field orientation is to the northeast, with home plate and spectator seating located in the southwest corner. The Cal Softball Field is not compliant with current NCAA design requirements. A facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament. The current fixed spectator seating contains approximately 350 permanent seats. During the softball season and depending on expected attendance of the games, portable bleachers are installed in Witter Lot, facing south, along the northern fence line of Cal Softball Field and can increase capacity of the field to 1,340 seats. (Examples of portable bleacher installations at the existing Cal Softball Field are shown in Figure 3-4.) When portable bleachers are installed, they occupy parking spaces in Witter Lot. When the maximum number of portable bleachers are installed (990 seats), 20 parking spaces are occupied.

The NCAA requires softball field dimensions of 190 feet down the right and left field baselines, and 220 feet to the centerfield. Currently, the outfield fences run 187 feet down the right and left baselines, while it is 197 feet to center field. The existing field dimensions do not meet NCAA requirements. There is an 8-foot-high fence around the perimeter of the field and related facilities. An interior outfield fence is also present along the entire outfield along the Centennial Drive side of the facility. There is an approximately 3,000-square-foot warm-up area to the west of the field, between spectator seating and the fence line of Witter Rugby Field.

The NCAA requires lighting for regional and national broadcasts that is sufficient to illuminate the entire playing field and provides horizontal light levels of 100 footcandles infield/70 footcandles outfield, vertical light levels of 70 footcandles infield/40 footcandles outfield, and a grid spacing of 20 feet by 20 feet (NCAA 2011). The existing field has 4, 50-foot towers supporting 1,000-watt light fixtures. The existing lights reach only a portion of the playing field and do not provide adequate horizontal and vertical light levels and therefore do not meet the NCAA requirements. Field lighting is currently used Monday-Friday evenings from dusk until 10 p.m. during the fall and spring semesters for intramural sports. When the university has hosted playoff games, 6, 53-foot portable lighting structures with 8, 1,500-watt light fixtures have been installed at the site to allow for games after dark to be played. An example of a softball game after dark at the existing field during the NCAA Super Regional on May 26, 2012, is shown in Figure 3-5.

The existing public address system consists of six portable speakers affixed to poles along the perimeter of the softball field. These speakers are oriented towards fan seating areas: southward from the northern perimeter of the field and northward from the southern perimeter of the field.

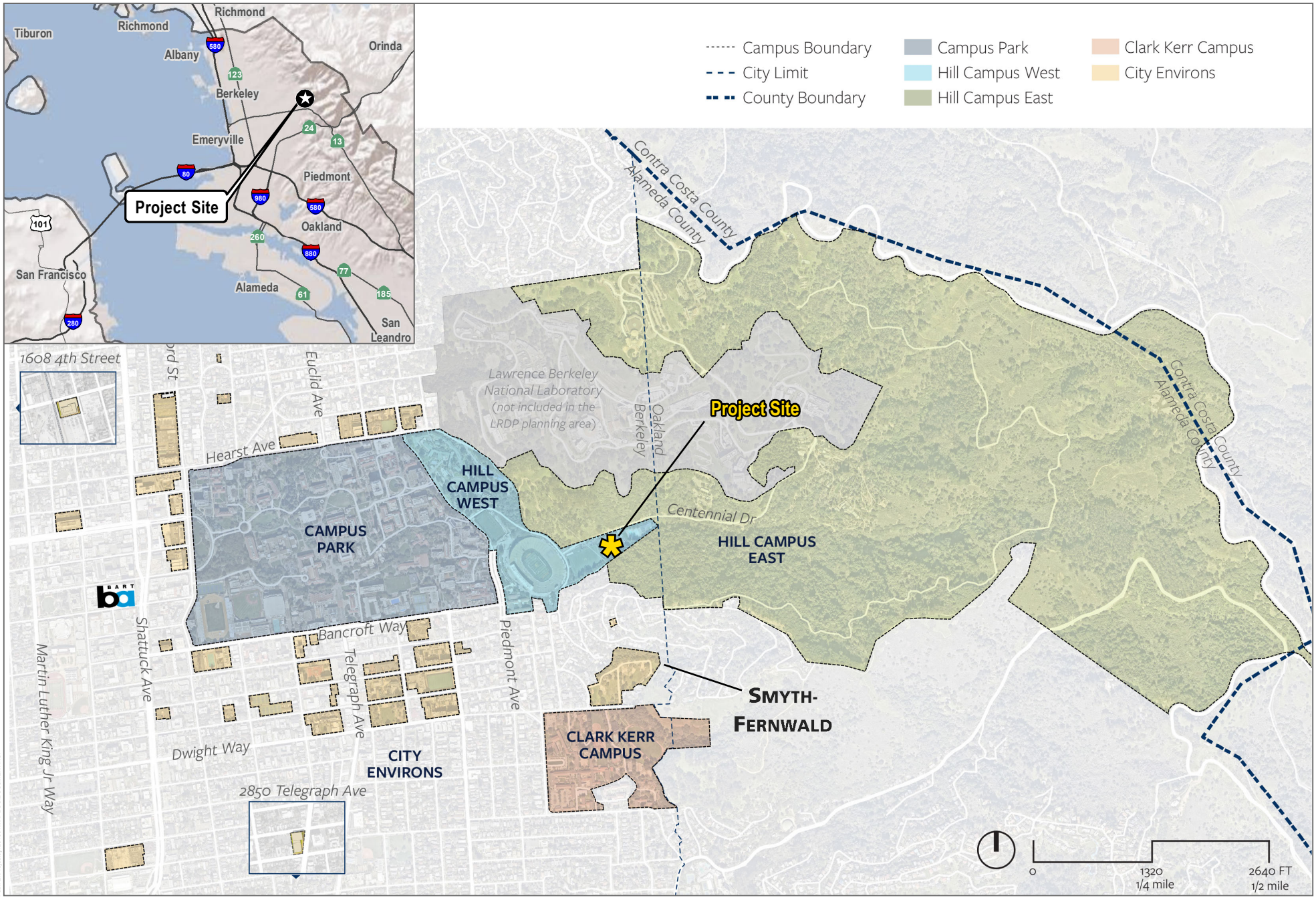
The field is currently used for softball practice, primarily during the school year from September through May. The field is also used for softball games, and the softball competition season is from January through June, although some practice games are held in the fall. The competition season consists of approximately 15 to 20 home games under existing conditions. Most games are held on Fridays, Saturdays, and Sundays, depending on television contracts and scheduling requirements.

Attendance at games varies substantially depending on how well the Cal women's softball team is performing in a given season, what team they are playing, and other factors, such as weather. The five-year game average attendance between 2016 to 2022 during the regular season was approximately 500 (no games were played in 2020 and no fans were in attendance in 2021 due to COVID-19). The range in per-game attendance over the five-year period varied from a low of approximately 100 in 2017 to a high of approximately 1,130 in 2016. Prior to 2016, higher per-game attendance occurred in 2014 (1,314 spectators) and 2015 (1,342 spectators).

3.4.2 EXISTING LANDSCAPING

The project site is located immediately north of a densely wooded area, which includes a recreational trail running eastward from the western end of Canyon Road. A retaining wall separates Cal Softball Field from this southern wooded area. This forested area is steeply sloped and contains oak trees (*Quercus sp.*) interspersed with California bay (*Umbellularia californica*), buckeyes (*Aesculus californica*), and other species.

The project site has 16 planted redwoods (*Sequoia sempervirens*) in two groupings, one on the east side and one on the west side, as well as several street trees along Centennial Drive; these were planted in the late 1990s when the original field was constructed. There are also 6 coast live oak trees (*Quercus agrifolia*) along Centennial Drive and 2 coast live oak trees on the northeast corner in the parking area.



SOURCE: UC Berekeley 2018

FIGURE 3-1

Project Location

UC Berkeley Cal Softball Field Renovation Project

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SOURCE: ESRI World Imagery 2018

DUDEK

0 150 300 Feet

FIGURE 3-2

Project Site

UC Berkeley Cal Softball Field Renovation Project

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SOURCE: HOK Architects

FIGURE 3-3

Existing Cal Softball Field

UC Berkeley Cal Softball Field Renovation Project

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Intentionally Left Blank

SOURCE: Cal Athletics

FIGURE 3-4

Portable Bleachers in Use

UC Berkeley Cal Softball Field Renovation Project

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Intentionally Left Blank

SOURCE: Cal Athletics

FIGURE 3-5

Softball Game After Dark

UC Berkeley Cal Softball Field Renovation Project

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3.4.3 EXISTING TRANSPORTATION, ACCESS, AND PARKING

Existing primary vehicle access to the field is from Centennial Drive. As indicated previously, Witter Lot, a 110-space campus permit parking lot for faculty, staff, and students, is located along the northern edge of the project site. In addition to Cal Softball Field, Witter Lot serves Witter Rugby Field and Strawberry Canyon Recreation and Pool. When portable bleachers are installed, they occupy up to 20 parking spaces in Witter Lot. Game spectators who drive to the field are directed (through existing signage and use of existing mobile apps) to park in other campus parking lots with visitor parking including the Stadium Garage at 2175 Piedmont Avenue, Underhill Garage, Lower Hearst Garage, and Recreational Sports Facility Garage (see Section 3.5.5.2, Parking, for additional information about these parking lots).

Public transit services in the project vicinity are provided by Alameda-Contra Costa Transit District (AC Transit). Several AC Transit routes operate near the project site. The nearest AC Transit bus stops to the project site include one stop on Piedmont Avenue near the UC Faculty Club (Routes F and 52), one stop at the intersection Piedmont Avenue and Bancroft Way (Routes 36 and 79) both approximately 0.3 miles from the project site, one stop at the intersection of College Avenue and Bancroft Way (Route 51B) approximately 0.4 miles from the project site, and one stop at the intersection of Telegraph Avenue and Bancroft Way (Route 6) approximately 0.7 miles from the project site. Schedules for these routes can be found in Section 4.6, Transportation. According to the Metropolitan Transportation Commission (MTC), the existing Cal Softball Field is located within an existing Transit Priority Area (MTC 2023). AC Transit Routes 51B and 52 both provide morning and afternoon peak frequency that is 15-minutes or less, and both provide bus stops within a one-half mile radius from the project site.

The project site is also served by Bear Transit. Operated by UC Berkeley, Bear Transit is a campus shuttle system that primarily serves the UC Berkeley campus and community. Daytime shuttles operate on a fixed route and schedule between 7:30 a.m. and 7:30 p.m. on weekdays only. Night shuttles operate on both weekdays and weekends, with a fixed schedule between 7:30 p.m. and 3:00 a.m. and door-to-door service throughout the service area between 3:00 a.m. and 6:00 a.m. Section 4.6, Transportation includes details of the Bear Transit shuttle service near the project site. The nearest Bear Transit bus stops to the project site includes two on Centennial Drive: one directly across the street from the project site, serving the westbound H Line, and one about 250 feet east of the project site, serving the eastbound H Line. The P-Line and the R-Line also both have stops along Piedmont Avenue near the Hass School of Business, approximately 0.3 miles from the project site.

3.5 PROJECT OBJECTIVES

The fundamental purpose of the UC Berkeley Cal Softball Field Renovation Project is to provide an equitable facility for women's softball. As such, the university's objectives for the UC Berkeley Cal Softball Field Renovation Project are to:

1. Support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports and improving the training and competition facilities provided to female student athletes who participate in the Cal women's softball program.
2. Ensure the women's softball field is in a location with walkable access to campus academic and athletic resources.
3. Meet NCAA design requirements for softball fields to accommodate the need for the Cal women's softball team to practice and compete, including evening games, on a NCAA compliant field and to host home

playoff games on campus, consistent with the facilities and opportunities provided to university male student athletes. NCAA design requirements include:

a. Minimum field dimensions - The outfield fences need to be 190 feet down the right and left field baselines, and 220 feet to the centerfield.

b. Seating capacity - A facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament. The women's softball team would have to qualify for post-season play for the NCAA to consider UC Berkeley as a host for a playoff game.

c. Competition-grade lighting - Lighting must meet NCAA best lighting practices for standard intercollegiate play. In accordance with the NCAA Best Lighting Practices for Softball, for Regional and National Broadcasts (NCAA 2011), lighting specifications include:

   i. Horizontal light levels: 100 footcandles infield/70 footcandles outfield.

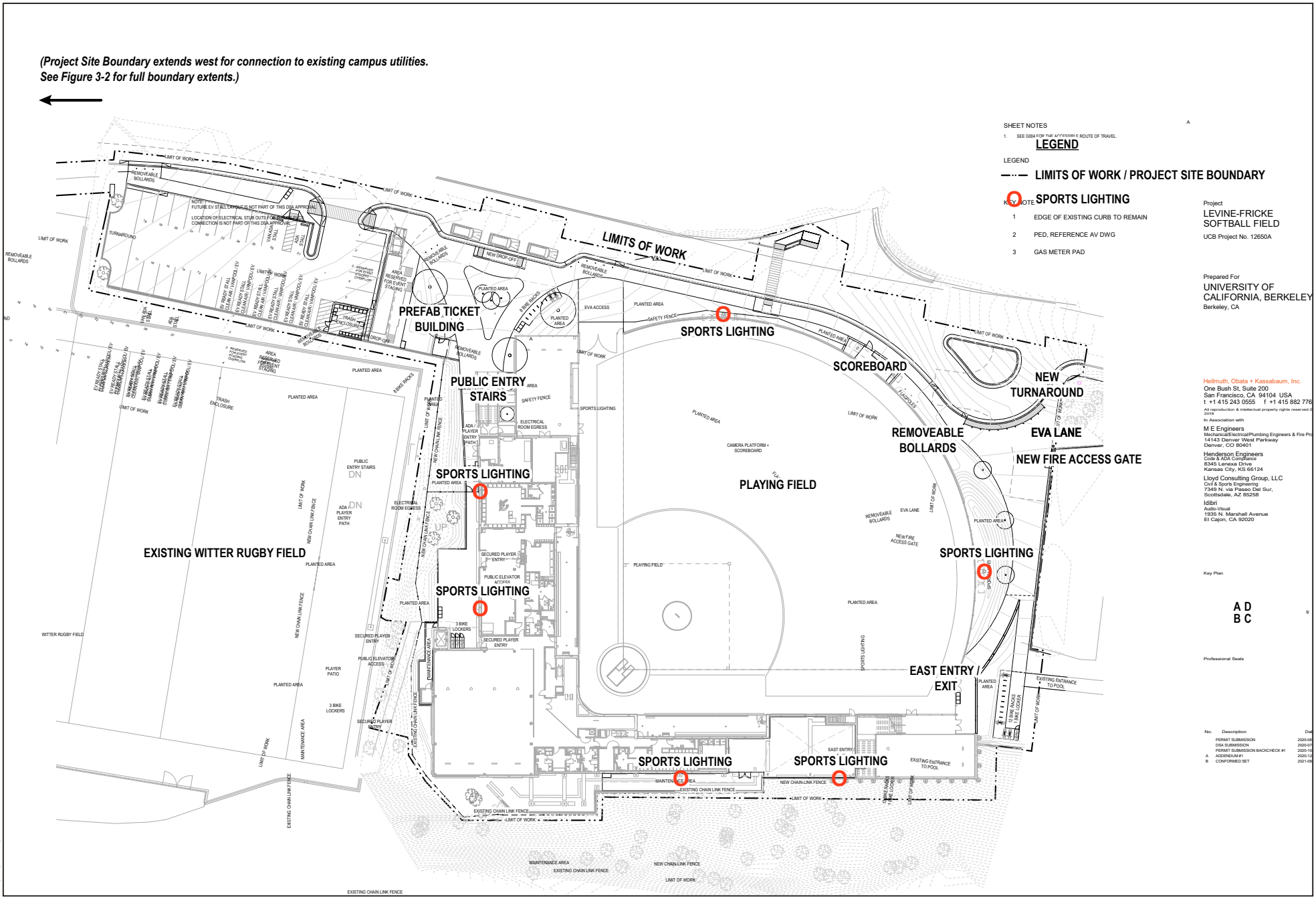
   ii. Vertical light levels:

      1. 70 footcandles infield/40 footcandles outfield to high home plate camera.
      2. 70 footcandles infield/40 footcandles outfield to 1st baseline camera.
      3. 70 footcandles infield/40 footcandles outfield to 3rd baseline camera.
      4. Grid spacing: 20 feet x 20 feet.

4. Improve the existing recreational facility at the Cal Softball Field to meet the needs, and enhance the experience, of the current student body and the community. This aligns with Berkeley campuswide land use objective to "Modernize and adapt existing buildings through strategic renovation projects that support current and future needs and pedagogies, and to improve space utilization and efficiency. Take advantage of these opportunities to maximize long-term flexibility."
5. Upgrade existing infrastructure surrounding Cal Softball Field, including Americans with Disabilities Act (ADA) access, sidewalks, transit stops, and utilities, in a cost-effective manner as project site acreage and other site constraints allow.
6. Prioritize renovation of existing recreational facilities to ensure adequate land remains available in the central campus for academic or research buildings. This aligns with the Berkeley campuswide land use objective to "Make the highest and best use of each site to employ limited land resources most efficiently. To the extent possible, prioritize utilization of infill or undeveloped sites for facility development to accommodate program needs, taking into consideration site setting and context, adjacent uses, and coordination with existing landscape, infrastructure, and mobility systems."

3.6 PROJECT COMPONENTS

As described above, the proposed project includes the renovation of the existing Cal Softball Field. Various components of the project are described in detail below. The existing and proposed project improvements are listed in Table 3-1. The overall site plan, field level site plan, and concourse level site plan are provided in Figure 3-6, Figure 3-7, and Figure 3-8, respectively.



SOURCE: HOK Architects

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FIGURE 3-6

Overall Site Plan

UC Berkeley Cal Softball Field Renovation Project

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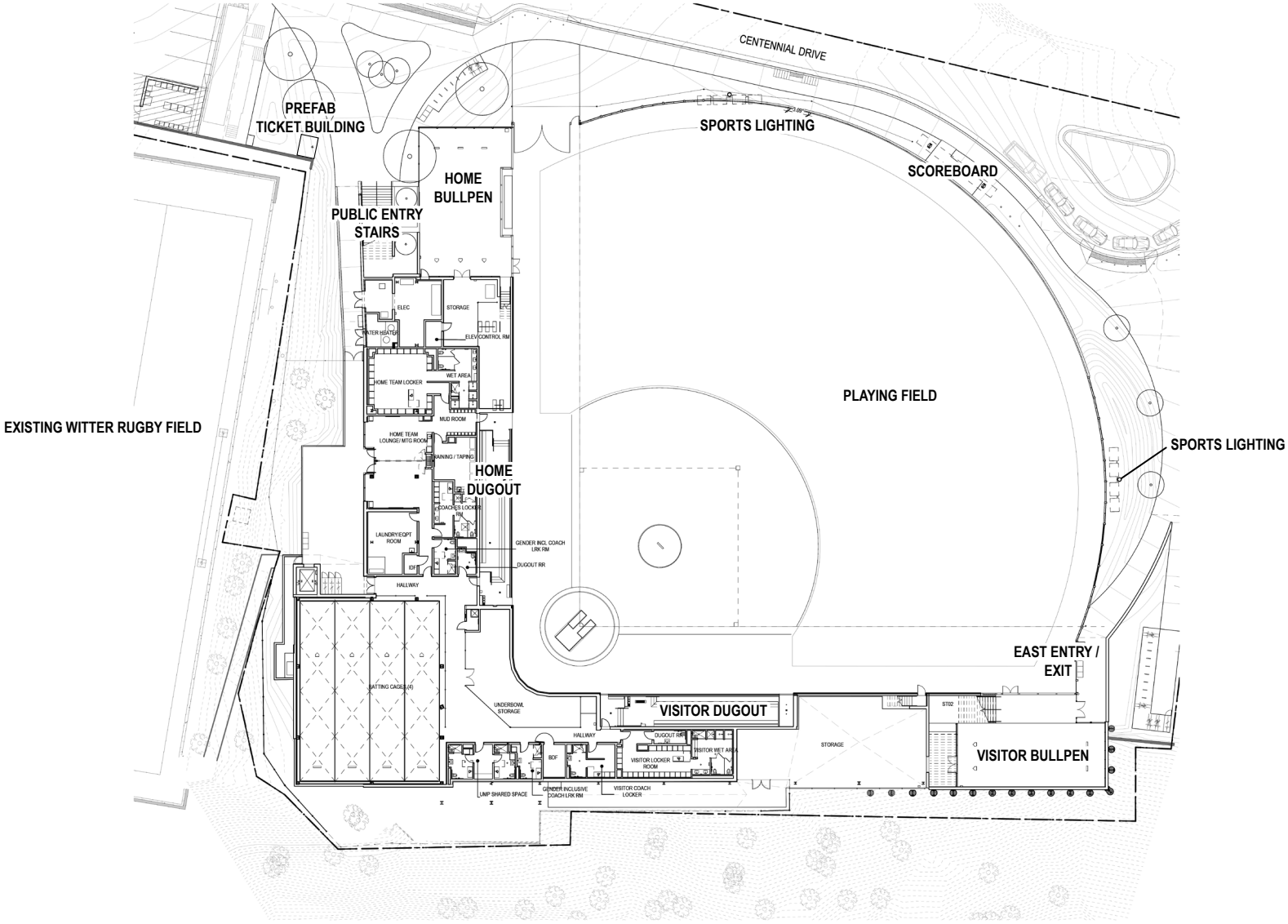

SOURCE: HOK Architects

FIGURE 3-7

Field Level Site Plan

UC Berkeley Cal Softball Field Renovation Project

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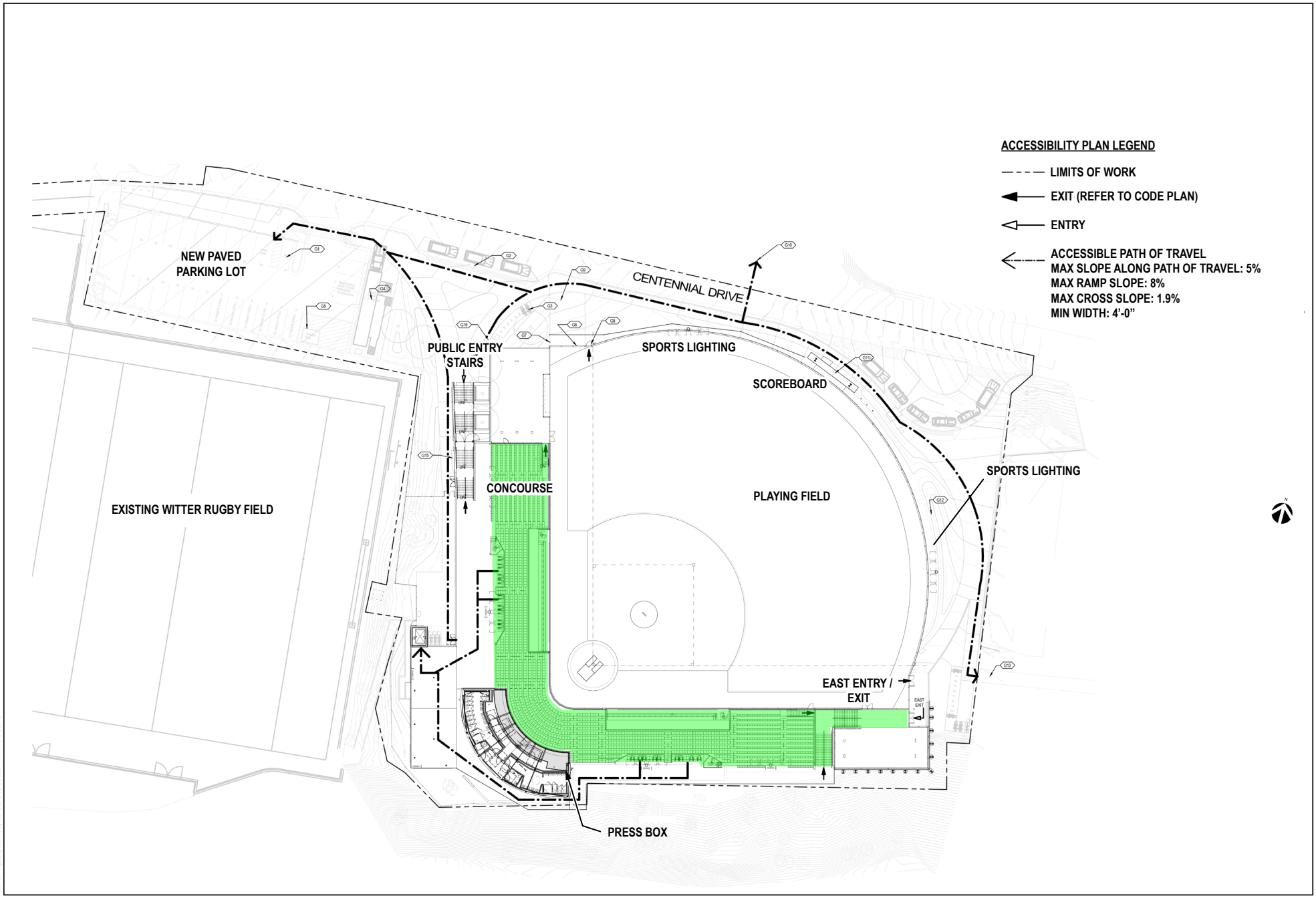

SOURCE: HOK Architects

FIGURE 3-8

Concourse Level Site Plan

UC Berkeley Cal Softball Field Renovation Project

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3.6.1 SOFTBALL FIELD

The renovated softball field would be in the same location as the existing field and would remain oriented to the northeast with home plate at the southwest corner of the site. The outfield fences would be extended to 190 feet down to the right and left baselines, and to 220 feet to the centerfield to comply with NCAA standards. The outfield fence would be up to ten feet high from finished grade to the top of the fence and a transparent safety net would be 55 feet high and provided along the left field fence to protect Centennial Drive. Interior field dimensions would include a 60-foot base path and would measure 43 feet from the pitcher's rubber to home plate. The infield surface would be resurfaced with new fine-grained aggregate material and the existing grass outfield would be replaced with synthetic turf.

3.6.2 FIELD LIGHTING

The proposed project would update the existing field lighting system that consists of unshielded high-pressure sodium floodlights with a modern LED (light-emitting diode) system featuring improved light quality, increased mounting heights with reduced light trespass into adjacent areas, and additional shielding. The existing field lights on 4, 50-foot towers would be replaced and upgraded by installing 6, approximately 60- to 70-foot-high towers with lights at mounting heights of approximately 70 to 90 feet that would illuminate the infield, outfield, bullpen, and seating. Two light towers would be placed along the left baseline, facing east; two light towers would be placed along the right baseline, facing north; and two towers would be placed along the outfield fence on the north and east corners of the site, facing southeast and northwest, respectively. For evening intercollegiate competition, all lights would be fully illuminated; for evening intramural or other uses, the lighting would be dimmer. There will be no change in the existing daily schedule for use of the field lights with the proposed project. The lighting plan is designed to meet NCAA lighting requirements, to concentrate light on the infield (average of 100 horizontal footcandles) and outfield (average of 70 horizontal footcandles) and dissipate footcandles toward the edges of the field. A lighting analysis for the proposed project has been prepared to support this Draft EIR (see Appendix D) and Section 4.2, Aesthetics, reports on the conclusions of this lighting analysis.

The press box, staircases, restrooms, and home and visiting team areas would have occupancy sensors that would be connected to the lighting control system (see Section 3.5.7, Sustainable Design and Lighting Controls, for information about how the proposed lighting will be controlled and operated). In addition to competition field lights, the project would include upgraded street and pedestrian lighting. All areas of public circulation would have recessed lights angled downward to reduce light pollution and glare, to be compatible with the rustic character of the Hill Campus West. The improved field would not use diesel backup generators for lighting or any other purposes, as adequate electrical connections would be provided with the proposed project.

3.6.3 BUILDING DESCRIPTION

The project involves construction of an approximately 30,500-square-foot two-story structure housing the bullpen, the concourse, and the press box, which would be built on the southwest corner of the site adjacent to a new fan concourse wrapping around up to 1,511 permanent seats (see Figures 3-6 through 3-8). Approximately 22,000 square feet would be ballpark spaces including bleachers, bullpens and dugouts; and approximately 7,927 square feet would be enclosed spaces including locker rooms, press box, lounges, and training room. The proposed building would be set back 100 feet from the curb of Centennial Drive to accommodate the landscape treatment at the entrance and the existing parking in Witter Lot. The setback depth would vary along the building edges of the concourse and the press box. The top of the press box, which represents the tallest portion of the building, would be 35 feet high, and the concourse would be 20 feet high. Although views would be filtered

through the surrounding trees, as with the current facility, the project would be visible from Centennial Drive and Canyon Road. The main entrance of the project would be located at the northwest corner of the site on Centennial Drive, between the improved Cal Softball Field and the existing Witter Rugby Field, and is planned and designed to form a landscaped entry plaza that serves as a gathering place, and provides a ticket booth, signage to the softball field, and direct access to those with special mobility needs.

A new scoreboard with LED display would be used for player headshots, statistics, replays and pre-produced videos. The display would be approximately 35 feet by 20 feet and would face southwest. A static 9-inning scoring line, approximate 35-foot by 9-foot score display would mount below the scoreboard and can be used independently of the primary video display. Views of these displays from the south would be largely screened by the dense trees south of the project site.

A new (replacement) PA speaker system would also be installed with the proposed project. Speakers would be mounted on the exterior of the building at the press box and on proposed lighting poles for use during games and practice. Speakers would also be mounted in the batting cages for use during practices. A total of 22 speakers would be used for commentary and media playback during competitive games.

The project design, composition, and siting are in accordance with the UC Berkeley Physical Design Framework (UC Berkeley 2021d) and the Hill Campus Working Paper (UC Berkeley 2002). The project, in concept, schematic and design phase, was reviewed by the UC Berkeley Design Review Committee in July, October, and December of 2018. Presentations included views of the new design, discussion of the building's program, description of materials, and treatment of the building exterior. Comments received were reviewed with the project design team. The Design Review Committee was primarily concerned with the architectural expression of the new building's main structure on Centennial Drive, as well as its relationship to the surrounding forested hillside. The proposed design was refined to ensure that the structure was respectful of the site context, as well as presented a positive architectural expression compatible for institutional uses. The Design Review Committee recommended retaining the existing orientation for Cal Softball Field and maximizing vegetation around the field. The entryway design would encompass naturalistic planting of trees and ground plants.

The project would comply with the University of California Seismic Safety Policy. According to the University of California Seismic Safety Policy, the design and construction of University of California facilities shall comply with the current seismic provisions of the California Building Code for new or existing buildings, as appropriate, and with university policies (UCOP 2021). An engineer of record shall be responsible for the structural aspects of the entire project and must sign and stamp all final documents, including deferred submittals, for which he/she is responsible. Peer review, with an independent seismic peer reviewer, shall be conducted on all new construction and all renovation of University of California facilities that involve structural design and that are intended for human occupancy or that may affect the life or safety of the occupants. The independent seismic peer reviewer shall be contracted and paid directly by the University of California. The designated campus building official shall select the independent seismic peer reviewer and plan for the peer review. The project was reviewed by UC Berkeley's Seismic Review Committee (SRC) in February 2019. Recommendations by the SRC were incorporated into the design, and design changes were approved by the SRC in October 2019.

A summary of proposed field improvements under the proposed project are listed below in Table 3-1.

TABLE 3-1. SUMMARY OF PROPOSED CAL SOFTBALL FIELD IMPROVEMENTS

Project Element	Existing Condition	Proposed Project
Field	• Dimensions do not meet NCAA standards – outfield fences run 187 feet down the right and left baselines, 197 feet to centerfield.	• The field would conform to minimum dimensions of an NCAA-compliant softball facility – 190 feet down the lines and 220 feet to centerfield.
Fencing	• 380 linear feet of backstop fencing. • 206 linear feet of perimeter fencing; no fencing separating Cal Softball Field from Witter Field to the west. • 400 linear feet of internal fencing. • Outfield fencing is 8 feet high.	• 425 linear feet of backstop fencing due to expanded field. • 600 linear feet of perimeter fencing; including replacing some fencing on the south side of the site and providing new fencing separating Cal Softball Field from Witter Field to the west. • 80 linear feet of internal fencing for bull pens. • Outfield fencing would be 10 feet high. • Transparent safety net along left-field fence to protect Centennial Drive would be 55 feet high.
Dugouts	• Two dugouts (metal structure with asbestos roof), 35 feet wide and 12.5 feet deep.	• Dugouts would be 73 feet wide and 12 feet deep and would hold 30 people with equipment (bats, helmets). • Bathrooms would be accessible directly off the dugouts (both home and visitors), with a mudroom between the dugout and the locker room.
Seating	• 350 permanent seats facing north and east; up to 990 portable bleachers, facing south, for a total of 1,340 seats.	• 1,511 permanent seats, facing north and east. • Net increase of 171 seats with the project.
Team rooms (home)	• No home team room. • Lockers are located at the Simpson Center in California Memorial Stadium.	• Home team room (approximately 575 square feet) would be directly adjacent to the dugout mudroom.
Team rooms (visiting)	• No visiting team room.	• Visiting team locker room, adjacent to visitor dugout.
Restrooms	• Structure with separate restrooms for men and women.	• Restrooms located in each team locker room, adjacent to each dugout. • Public restrooms on the concourse behind the press box. • Restrooms also in two unisex umpire locker rooms. • One gender-neutral bathroom in a central area.
Batting cages	• Three batting cage chutes (3,200 square feet) are located in a covered metal structure.	• Semi-exterior space with four batting cage chutes and space for a pitching area under concourse accessible from interior hallway serving locker rooms (approximately 4,060 square feet).
Concourse	• No concourse.	• Elevated concourse where fans can walk down to seats.
Press box	• Press box is at the southern edge of the field. • No structure.	• Slender press box structure of approximately 1,350 square feet located on the southwest corner of the concourse.
Lighting	• Permanent • 4, 50-foot light towers supporting 1,000-watt light fixtures/6–8 halogen fixtures. • Existing lights reach a portion of the playing field and measure around 20-30 footcandles. • Lights are scheduled through a local, antiquated lighting control system located in a box behind the left field wall. • Portable • 6, 53-foot portable lighting structures supporting 1,500-watt/8 fixtures.	• Permanent • 6, 60- to 70-foot poles with TV-ready game lighting fixtures at the top to illuminate playing field. Light mounting heights would be approximately 70 to 90 feet tall. • Horizontal light levels: average of 70 footcandles for the outfield and 100 footcandles for the infield, per NCAA requirements. • Lighting levels would be dimmer for events other than intercollegiate games, such as intramural competitions.

TABLE 3-1. SUMMARY OF PROPOSED CAL SOFTBALL FIELD IMPROVEMENTS

Project Element	Existing Condition	Proposed Project
PA systema	• Six portable speakers affixed to poles wired to a head unit and controlled by a mixing board. • Speakers affixed to poles along the perimeter of the softball field and oriented towards fan seating areas: southward from the northern perimeter of the field and northward from the southern perimeter of the field.	• Speakers mounted on exterior of building and poles for field use during games and practice. • Speakers mounted in batting cages for use during practice.
Power and data	• No power or data to team rooms or press box. • Requires use of diesel backup generators.	• Power and data to team rooms, press box, dugouts, batting cages, scoreboard, and various concourse locations. • No diesel backup generators required.

Notes: NCAA = National Collegiate Athletic Association Division I; PA = public address.
[a] Speakers would be oriented perpendicularly (toward the west) away from the closest residences.

3.6.4 SOFTBALL FIELD OPERATIONS

3.6.4.1 SOFTBALL PROGRAM DESCRIPTION

The use of the proposed project would be the same as the existing softball field, as the field would continue to be used for Cal women's softball and for Rec Sports. During the fall, the field would be used for practices, intramural play, camps/clinics, and other occasional daytime competitions. These fall competitions occur on weekend afternoons and are scheduled to not coincide with football games at nearby California Memorial Stadium. During the spring semester (the regular softball season), the facility would be used somewhat more frequently than under existing conditions (15 to 20 games), with up to a total of 25 games including 21 regular season softball games and up to 4 post-season events, as further described below, as well as practices and intramurals when not scheduled for Cal women's softball use. All regular season softball games could be televised, as under existing conditions. Of these 21 regular season events, 8-10 would be against Pac-12 competition played during 4-5 weekend series with two games per weekend. It is possible, though very unlikely, that all 10 of those Pac-12 games could be played in the evening. Additionally, the schedule typically includes 4-6 out-of-conference games, and it is possible, though very unlikely, that all of these could be played in the evening. The facility may also host an intercollegiate tournament in February, which could include up to 5 games after dark in a worst-case scenario. If the team qualifies for the post-season, it would need to be one of the top 16 teams in the country in order to host a 4-team, double-elimination tournament in which up to 4 games after dark could occur.

For a typical college softball schedule at a Pac-12 facility that is already equipped with NCAA-compliant lighting to allow for games after dark, there were approximately 11 games that started at 5:00 pm or later, based on the 2022 Stanford University softball season, as an example. While the project conservatively assumes up to 25 games after dark per year (conservatively assuming four post-season games), it is much more likely there would be approximately 11 games starting at 5:00 pm or later, similar to the Stanford University schedule, with the remainder of the schedule played during the day. During the summer, the field would not be used for competition, but would be used for intramural recreation, as well as Rec Sports summer camps (same as existing uses).

Table 3-2 compares the existing program schedule to the proposed program schedule, based on information provided by UC Berkeley. The primary changes include an increase in maximum seating "sell-out" capacity from approximately 1,340 to 1,511; potential to host televised games after dark, depending on network scheduling;

and the ability to host up to 25 games. The project assumes that average attendance at games would double, from a historic average of 300 to 600 attendees at Fall competitions and from 500 to 1,000 at Spring competitions. Although the ability to host competitive NCAA games after dark would be new, the facility hours of use (until 10:00 p.m.) would not change.

3.6.4.2 HOURS OF OPERATION

The hours of field operations will remain unchanged with the project. Existing and proposed softball field hours of operations are Monday through Sunday 8:00 a.m. to 10:00 p.m. Evening games are and will continue to be scheduled to ensure the softball field is cleared no later than 10 p.m. Typical times of day for specific activities are shown in Table 3-2.

TABLE 3-2. PROPOSED UC BERKELEY SOFTBALL FIELD PROGRAM SCHEDULE

ID	Activities	Expected Number of Uses/Events		Days of Week	Times of Day
		Existing	Proposed		
September through December (Fall Semester – Practice Season) [a]					
1	Fall attendance at home competitions (4–5 total games on weekends)	300 average attendees; 60 athletes; 32 coaches/support staff	600 average attendees; 60 athletes; 32 coaches/support staff	Saturday and Sunday	12:00 p.m.–5:00 p.m.
2	Softball team practices[b]	35 users	35 users	Monday–Friday	11:00 a.m.–2:00 p.m.
3	Intramural sports	40 users	40 users	Monday–Sunday	5:00 p.m.–10:00 p.m.
4	Camps and clinics	100 users	100 users	Saturday and Sunday	9:00 a.m.–3:00 p.m.
5	Special events/rentals	50 attendees	50 attendees	Varies	Varies
6	Maintenance	4 users	4 users	Monday–Friday	8:00 a.m.–11:00 a.m.
January through May (Spring Semester – Competitive Season) [c]					
7	Spring attendance at home competitions	500 average spectators; 60 athletes; 32 coaches/support staff	1000 average spectators; 60 athletes; 32 coaches/support staff		
8	Spring home competitions	15–20 games on weekdays and weekends; no games after dark	Up to 21 games, including up to 21 games after dark	Tuesday, Thursday–Sunday	Weekdays: 1:00 p.m.–10:00 p.m. Weekends: 12:00 p.m.–10:00 p.m.
9	Post-season play	Infrequent, depends on performance	Infrequent, depends on performance; up to 4 games (including up to 4 after dark)	3-day playoff weekend events	Weekdays: 1:00 p.m.–10:00 p.m. Weekends: 12:00 p.m.–10:00 p.m.
10	Softball team practices	35 users	35 users	Monday–Friday	11:00 a.m.–2:00 p.m.
11	Intramural sports	20 users	40 users	Monday–Sunday	5:00 p.m.–10:00 p.m.
12	Maintenance	4 users	4 users	Monday–Friday	8:00 a.m.–11:00 a.m.
June through August (Summer Session – Camp Season)					
13	Youth camps	250-600 users	250-600 users	Monday–Friday	8:00 a.m.–5:00 p.m.
14	Camps and clinics	100 users	100 users	Saturday and Sunday	9:00 a.m.–3:00 p.m.
15	Special events/rentals	50 users	50 users	Varies	Varies
16	Maintenance	4 users	4 users	Monday–Friday	8:00 a.m.–11:00 a.m.

Notes: IA = Intercollegiate Athletics.

[a] Fall home competition: Support staff include trainers, grounds crew, sports information directors, public address announcers, scoreboard operator, statistician, videographer, television broadcast crew, and audio professionals. Games typically start at 12:00 p.m. or 1:00 p.m. and last 2.5 hours.
[b] Practice times subject to change depending on class schedule.
[c] Spring home competition: Televised games would require a production truck, four to five camera operators, and four to five other employees. Weekday games typically start between 1:00 p.m. and 4:00 p.m. and last 2.5 hours; weekend games typically start at 12:00 p.m. or 1:00 p.m. and last 2.5 hours.

3.6.5 TRANSPORTATION, ACCESS, AND PARKING

3.6.5.1 SITE ACCESS

The main public entrance to the new facility would be located at the northwest corner of the site on Centennial Drive, between the new softball field and the existing Witter Rugby Field. This new facility entrance would be used as a public gathering space, entry plaza and ticket booth. A secondary team entrance would be located to the west of the spectator entrance to allow direct access to the lower-level team facilities, including the locker rooms and batting cages. On the west of the Witter Lot, there is another standby entrance with removable bollards for vehicular access that may be used during certain times of the year.

The project would include upgrading the existing sidewalk along the project frontage on Centennial Drive. To the east of the new field, the vehicle and pedestrian entrance to the SCRA would be reconstructed and replaced with the roundabout and new sidewalk described previously. A new access gate between the project site and SCRA would also be constructed that would be connected to an existing unobstructed pathway to the pool and pool clubhouse. The project also involves improvements to an existing bus stop area located directly north of the project site, along Centennial Drive. Improvements to the bus stop include new striping, signage, curbs, sidewalk, and asphalt paving.

Loading and service access would be through the main entrance from Witter Lot for trash pickup and deliveries. Production trucks would be staged near the main entrance for televised softball games. Bicycle access would be from Centennial Drive, a designated Class III bicycle route (which provides for shared use with pedestrians and motor vehicles). The project would include 20 bicycle racks (fitting two bicycles each) and 3 bike lockers providing 43 total spaces for an increase of 34 compared to the existing 9 spaces.

Site access to the new facility would be similar to the existing field as its location and orientation would not change. Game spectators would be directed (through project signage and use of existing mobile apps) to park in other campus parking lots with visitor parking (see Section 3.5.5.2, Parking). The project would include two new passenger loading/unloading zones along Centennial Drive (see Figure 3-6) for those that require immediate access to the field, which would have rolled curbs to accommodate emergency vehicles:

- Northwest Passenger Loading/Unloading Zone - The new pullout area at the main entrance gate on the northwest corner of the site would be 65 feet in length along the project frontage on Centennial Drive, which could accommodate up to 3 vehicles. This pullout area is closest to the ADA path on the west side of the site.
- Northeast Passenger Loading/Unloading Zone – The new roundabout on the northeast corner of the site near the Strawberry Canyon Recreation and Pool entrance can accommodate up to 6 vehicles for passenger loading and unloading.

Centennial Drive provides access for emergency vehicles and the new roundabout on the northeast corner of the site would allow for turnaround for fire apparatus at the project site, rather than requiring travel approximately 0.6 mile further up Centennial Drive to the Botanical Garden, which is currently the next opportune location.

Emergency vehicle access to the proposed project would be reviewed by the UC Fire Marshal and City of Berkeley Fire Marshal for compliance with their respective standards and regulations. Emergency vehicle access may be provided to the proposed softball field via a lane running from Centennial Drive onto the softball field itself. Traveling southward from Centennial Drive, the lane may consist of 2 feet roll curb and gutter, removable bollards providing access to fire department and police department personnel, cast-in-place pedestrian concrete, grass pavers providing all weather driving capability of fire apparatus up to 75,000 pounds, an access gate to the field, and synthetic turf with 8-inch permeable aggregate base. The design and construction of the emergency vehicle access to the proposed structures must upon completion of the project conform to code requirements; variations may be granted by the Fire Authority having jurisdiction, as described previously (see Appendix C).

3.6.5.2 PARKING

The project would remove approximately 85 surface parking spaces from Witter Lot. There would be 25 perpendicular parking spaces with a 20-foot-wide two-way drive aisle and the roundabout area, previously described. The parking spaces would be 9 feet wide and 17 feet long. In addition to these remaining spaces, the lot would accommodate one ADA-compliant parking space and one ADA-compliant van parking space. Currently, during peak season up to 20 parking spaces are occupied with portable bleachers when they are installed. These portable bleachers are installed in the parking lot between Centennial Drive and the existing field. The remaining parking lot would continue to serve the Witter Rugby Field and the Strawberry Canyon Recreation and Pool.

As indicated above, spectators who drive to the new field would be directed (through project signage and use of existing mobile apps) to park in other campus parking lots with visitor parking including the Stadium Garage at 2175 Piedmont Avenue (approximately 435 spaces), Underhill Garage (approximately 935 spaces), Lower Hearst Garage (approximately 600 spaces), and Recreational Sports Facility Garage (approximately 200 spaces). The Stadium Garage, located 0.34 miles from the project site, is entirely visitor paid parking. On weekdays, the other garages feature a limited number of visitor parking spaces between 7:00 a.m. and 5:00 p.m. Since after 5:00 p.m. and on weekends, all campus parking facilities are open to the public for paid visitor parking, spectators attending weekend and games played after dark who drive to the new field would be directed to park in campus parking facilities closer to the Project, including the Berkeley Law Lot and Garage (approximately 143 spaces), and Bowles Lot (approximately 60 spaces), which are all within 0.5 miles of the project.

3.6.5.3 TDM PLAN

In coordination with the UC Berkeley Parking & Transportation, IA has developed a game day transportation and parking demand management (TDM) plan for the project due to limited onsite parking availability. Implementation of the TDM plan would be flexible because attendance at Cal women's softball games fluctuates. The TDM plan for the project would include:

- Continued use of Bear Transit H Shuttle to provide weekday shuttle service to the project site, connecting the site to the Main Campus Park and the Botanical Garden and Lawrence Hall of Science.
- Managing signed and designated pick-up/drop-off areas for passenger loading, including users that access the site via rideshare vehicles. See Section 3.5.5.1, Site Access, for details.
- Visiting team's athletes and associated staff will arrive via bus to the field, where they will be dropped off. The bus will then be routed to the Foothill parking lot or the Southwest Crescent. Each school is responsible for its own travel.

- Publicize and continue communication on game day transportation-related information to promote non-driving options:
  - IA will advertise transit and parking information for game day events on their website.
  - UC Berkeley Parking and Transportation lists all parking and transit options on their website, pt.berkeley.edu. Visitors will find details on getting to and from the BART station through this website.

3.6.6 LANDSCAPING

The proposed project includes new landscaping (see Figure 3-6), primarily focused on replacement of the streetscape and creation of new entry plazas along Centennial Drive. The landscape design intent of the proposed project is to incorporate planting of trees and groundcover to screen views of the new facility, blending it with the natural landscape of the canyon.

Due to construction and the increased footprint of the new facility, up to 23 trees would be removed on the northern portion of the project site to accommodate the new facility or to prevent construction from impacting their health (Figure 3-9). The proposed project would retain approximately 7 existing trees and would include planting 8 new trees as part of the overall landscaping plan (Figure 3-6). No trees would be removed south of the project site with the proposed project; however, it is possible that some tree trimming could be conducted along the southern edge of the project site if needed to accommodate project construction.

As previously noted, the trees on site are recent additions, planted after 1995 when the existing field was first constructed on what was formerly tennis courts and recreation fields. Per the Campus Specimen Tree Policy, the Campus Landscape Architect identified that one Specimen Tree would be removed as part of the Project (PGAdesign 2019). The project would replace this Specimen Tree at a 3:1 ratio as required by the UC Berkeley Specimen Tree Program. This may not always be feasible, in which case, trees measuring up to 4 inches diameter at breast height (DBH) are to be replaced with 24-inch-box trees, trees measuring 4 to 10 inches DBH are to be replaced with 36-inch-box trees, and trees greater than 10 inches DBH are to be replaced with 48-inch-box trees. The Campus Landscape Architect may elect to replace 36- or 48-inch-box trees with 24-inch-box size in greater quantity to equal the cost of the larger trees. New plantings are selected as horticulturally appropriate at the largest possible nursery sizes. Landscaped areas are restored to the full feasible extent.

The project would also establish protection for two large multi-trunk California bay trees immediately southwest of the project site during construction (although they are anticipated to be outside of the affected construction zone). These trees have combined trunk measurements of 62 inches and 59 inches in DBH and serve as screening for the homes located on Canyon Road to the south. The forested slope that abuts the southern edge of the field includes an oak–bay woodland community that qualifies as a ‘natural area’ under the Campus Specimen Tree Program. The project footprint does not encroach into this woodland community.

SOURCE: HOK Architects

DUDEK

FIGURE 3-9

Vegetation Removal Plan

UC Berkeley Cal Softball Field Renovation Project

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3.6.7 SUSTAINABLE DESIGN AND LIGHTING CONTROLS

The proposed project would be required to meet energy efficiency and green facility standards in the UC Sustainable Practices Policy, UC Berkeley Energy Use Policy, and the UC Berkeley Campus Design Standards. The project would be designed and constructed, at minimum, to the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Design + Construction (BD+C) Silver Certification (LEED v4 BD+C Silver Certification), the 2022 California Energy Code, Title 24, Part 6., and the 2022 California Green Building Standards Code—Part 11, Title 24, California Code of Regulations—known as CALGreen. "Green" facility measures in the proposed structure would include low-emitting adhesives, sealants, composite wood, agrifiber products, paints, and coatings; Forest Stewardship Council-certified wood; and low-flow plumbing fixtures. The project would implement a high thermal performance envelope, aggressive lighting-power density reduction, variable-frequency drives for all motors, heat recovery systems, and high-efficiency mechanical equipment. In general, lighting would be controlled by a networkable lighting control system with a built-in time clock and local overrides.

In addition to the new field lighting described in Section 3.5.2, Field Lighting, new and replacement lighting would be installed for the press box, stairs, restrooms, home and visiting team areas, mechanical/electrical/telephone and storage rooms, and the concourse. To provide for energy efficiency, lighting controls proposed for the facility, concourse, sports lighting and interiors include the following:

- The lighting control system would be a stand-alone low-voltage system, which is specifically designed for controlling lighting in a stadium and interfacing with building automation system to control certain zones.
- Lighting circuit for the interior lighting would be controlled by lighting control relays/dimmers. The exterior lighting would be controlled by photocell and the relays in the lighting control panel which can be over-ridden by the lighting control system.
- Low voltage lighting control override switches would be provided at all spaces and major back of house entries to control the zones in that level. Override switches would be provided to meet energy code requirements.
- Sports lighting would be its own self-contained system, including its control system. The sports lighting would also have Hand-Off-Auto (H-O-A) switches to manually operate the lighting.
- The press, stairs, restrooms, home and visiting team areas would have occupancy sensors that are connected to the lighting control system.
- The lighting control for mechanical/electrical/telephone and storage rooms would be equipped with occupancy sensors with manual dimmers.
- All public concourses would be controlled by the lighting control system only.

To support the development of a high-performance, cost-effective project, the architectural design team and all design consultants have engaged in an integrative design process from the outset of schematic design. This process would ensure that design decisions are informed through holistic benefits across a variety of factors. The design intent is that the site selection, water use, energy use, material use, and environmental quality enhance the facility's flexibility of use, provide a safe and comfortable environment, optimize energy consumption, and minimize maintenance costs.

In compliance with LEED BD+C v4, Silver Certification, the following credit pursuits have been identified and would be pursued for the project:

- LT Credit 2 – Sensitive Land Protection: The project is located on a previously developed site and would not disturb sensitive land.

- **LT Credit 4** – Surrounding Density and Diverse Uses: The project is located within 0.5 miles, walking distance, of the entrances to existing, public, and diverse amenities (Option 2: Diverse Uses).
- **LT Credit 6** – Bicycle Facilities: The project would provide bicycle spaces for more than 2.5% of the project's peak visitors.
- **LT Credit 7** – Reduced Parking Footprint: Provide parking capacity that is 40 percent below the base ratios recommended by the Parking Consultants Handbook.
- **LT Credit 8** – Green Vehicles: Designate 5 percent of all parking spaces used by the project as preferred parking for green vehicles and provide one preferred spot and electric vehicle infrastructure-ready conduits for later use.

3.6.8 UTILITIES

The project would upgrade existing utility connections that currently serve the project site, including electrical, water, sewer, stormwater drainage, and telecommunications. The project would be connected to UC Berkeley's central energy management system. The heating, ventilation, and air conditioning system would consist of split-system air conditioners, heating-only baseboard and in-duct systems with gravity-fed ventilators that would not exceed the threshold as described in the 2022 California Energy Code that defines a building as "Low Energy." A summary of project utility improvements is provided below:

- **Electrical.** New electrical service and conduit would be installed underground, connecting from the northwest corner of Witter Field at Centennial Drive and Stadium Rim Way. The conduit would be routed from this connection point, through Witter Lot, to the new support building.
- **Sewer.** To accommodate the project's restrooms, a new 6-inch sewer service line would be connected to an existing manhole at the northern edge of Centennial Drive across the proposed northwest passenger loading/unloading zone. The new underground sewer line would be built with multiple cleanout access points.
- **Water.** Water connections and improvements would be required for the new support building and for fire suppression needs. A new 4-inch water service line would connect the support building to a water service line on Centennial Drive at the Witter Lot entrance. A new 3-inch meter, 8-inch pressure valve, and 3-inch backflow preventer would be installed along the western portion of the project site, between the Witter Lot and proposed ticket building. Fire service water improvements would occur in the same areas, parallel to, the new water service improvements; these improvements include a new 6-inch fire service line, 6-inch backflow preventer, and new fire department connection. The project also proposes a second new fire service line along the northeast corner of the site which would be 6-inches in diameter and would connect to a new fire hydrant.
- **Stormwater/Drainage.** On campus, all projects are required to offset potential stormwater runoff to achieve net zero runoff. The project would result in a net increase in the amount of pervious surface by approximately 8,200 square feet from existing conditions and therefore the project would result in a net decrease in impervious surfacing. According to the Municipal Separate Storm Sewer System (MS4) stormwater guidelines, the net increase in impervious surface, if any, must be treated within the site area or through an approved alternative compliance method. Stormwater would continue to flow from the site into the City of Berkeley stormwater system, as under current conditions.

  The proposed project includes a new storm drain system that would collect the concourse and field runoff to the underground retention storage chamber system under the softball infield or a localized stormwater management system. An alternative compliance method may involve a stormwater treatment at a campuswide level. Perforated storm drain pipes are proposed under the field perimeter and join the outfall from the underground retention storage chambers into the municipal storm drain. The chamber

system and the field base are designed as both stormwater treatment as well as retention storage to reduce the peak flow from the site. Additionally, the proposed project will expand the current storm drain system within the parking area, install a drain system within the new roundabout and the landscape area northeast of the field. This drain system would outlet directly to the existing 60-inch storm drain line. The site stormwater improvements would be designed to maintain or reduce existing peak stormwater flows from the project site, as compared to existing conditions. The project involves several drainage improvements, including:

  - A new 6-inch perforated drainpipe would be installed along the perimeter of the softball field outfield.
  - Multiple new subsurface 24-inch diameter drain basins would be installed throughout the project site.
  - Multiple new non-perforated storm drainpipes throughout the project site to connect stormwater infrastructure (i.e., catch basins, roof runoff, trench drain, and outfalls).
  - An underground retention chamber would be installed under the softball field infield.

- **Telecommunications.** New telecommunication service and conduit would be installed, connecting from the northwest corner of Witter Field at Centennial Drive and Stadium Rim Way. The conduit would parallel the proposed electrical service and conduit; it would be routed from the northwest corner of Witter Field, through Witter Lot, to the new support building.

3.6.9 UNIVERSITY CONTINUING BEST PRACTICES

UC Berkeley currently implements continuing best practices (CBPs) to ensure environmental impacts from development and ongoing UC Berkeley operations would be reduced and/or avoided to the greatest extent feasible. CBPs are implemented as part of proposed projects, where applicable, and/or as part of UC Berkeley's standard, ongoing operations. In some cases, CBPs reference existing regulatory requirements that have been determined to be the most effective and practical means of preventing or reducing environmental impacts. The current CBPs were recently updated as part of the 2021 LRDP EIR. The CBPs have been reviewed for their adequacy in reducing and/or avoiding impacts to the environment in the 2021 LRDP EIR.

The CBPs are listed where relevant in the impact analyses presented in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, to illustrate how they would help to reduce and/or avoid environmental impacts from the proposed project. The specific CBPs that would be implemented as part of the proposed project include those listed below. Other CBPs may also be relevant to the impact analysis but are implemented as part of ongoing operations, not as part of specific projects, such as the proposed project. Appendix B provides all CBPs from the 2021 LRDP EIR.

- **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.
- **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.[1]

- **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.
- **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 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.
  - 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.
- **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

[1] The exception in this CBP is intended to apply to light structures in historic properties or districts.

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 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 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.

- **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€ (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.
- **CBP GEO-1:** UC Berkeley will continue to 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 continue to review all seismic and structural engineering design for new and renovated existing buildings on campus.
- **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.
- **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 include seismic improvements as part of its Capital Financial Plan.
- **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.
- **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-8:** Site-specific geotechnical studies will include an assessment of landslide hazard, including seismic vibration and other factors contributing to slope stability.
- **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.
- **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.

- **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.
- **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 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 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.
- **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.
- **CBP HYD-6:** UC Berkeley will continue to develop and implement the recommendations of the Strawberry Creek Management Plan and its updates, and construct improvements as appropriate. These recommendations include, but are not limited to, minimization of the amount of land exposed at any one time during construction as feasible; use of temporary vegetation or mulch to stabilize critical areas where construction staging activities must be carried out prior to permanent cover of exposed lands; installation of permanent vegetation and erosion control structures as soon as practical; protection and retention of natural vegetation; and implementation of post-construction structural and non-structural water quality control techniques.
- **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.
- **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.
- **CBP LU-2:** Each individual project built in the Hill Campus West, Hill Campus East, or the City Environs Properties under the LRDP will be assessed to determine whether it could pose potential significant land use impacts not anticipated in the LRDP, and if so, the project would be subject to further evaluation under the California Environmental Quality Act.
- **CBP NOI-1:** Mechanical equipment selection and building design shielding will be used, as appropriate, so that noise levels from future building operations would not exceed the City of Berkeley Noise Ordinance limits for commercial areas or residential zones as measured on any commercial or residential property in the area surrounding a project proposed to implement the LRDP. Controls typically incorporated to attain this outcome include selection of quiet equipment, sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures.
- **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 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.

    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.

- **CBP NOI-3:** UC Berkeley will precede all new construction projects that are outside of the Campus Park, the Clark Kerr Campus, or adjacent to a non-UC Berkeley property with community notification, with the purpose of ensuring that the mutual needs of the particular construction project and of those impacted by construction noise are met, to the extent feasible.
- **CBP PS-2:** UC Berkeley will continue its partnership with the Lawrence Berkeley National Laboratory, Alameda County Fire Department, Oakland Fire Department, and Berkeley Fire Department to ensure adequate fire and emergency service levels to UC Berkeley facilities. This partnership will include consultation on the adequacy of emergency access routes to all new UC Berkeley buildings. UC Berkeley will also continue to work closely with external fire management partners related to regional wildfire prevention, including the Hills Emergency Forum, Diablo Firesafe Council, and various neighborhood groups and internal interdisciplinary planning teams.
- **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.
- **CBP TRAN-5:** UC Berkeley will require contractors working on major new construction or major renovation projects to develop and implement a Construction Traffic Management Plan that reduces construction-period impacts on circulation and parking within the vicinity of the project site. The Construction Traffic Management Plan will address job-site access, vehicle circulation, bicycle and pedestrian safety, and be coordinated with the City of Berkeley Public Works Department when projects require temporary modifications to city streets.
- **CBP TRAN-6:** For each construction project, UC Berkeley will require the prime contractor to prepare a Construction Traffic Management Plan which will include the following elements:
  - Proposed truck routes to be used, consistent with the City truck route map.
  - Construction hours, including limits on the number of truck trips during the morning (AM) and evening (PM) peak traffic periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), if conditions demonstrate the need.
  - Proposed employee parking plan (number of spaces and planned locations).
  - Proposed construction equipment and materials staging areas, demonstrating minimal conflicts with circulation patterns.
  - Expected traffic detours needed, planned duration of each, and traffic control plans for each.
  - Identifying bicycle and pedestrian detours and safety plan, including solutions to address impacts to accessible routes.
- **CBP TRAN-7:** UC Berkeley will manage project schedules to minimize the overlap of excavation or other heavy truck activity periods that have the potential to combine impacts on traffic loads and street system capacity, to the extent feasible.
- **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 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 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.

3.6.10 WILDFIRE MEASURES

The proposed project would be constructed in accordance with the California Building Code (CBC) and the California Fire Code (CFC) and would be required to comply with all applicable codes for fire safety pursuant to UC policy. The project is designed to minimize fire risk and would include fire alarm and fire suppression systems.

UC Berkeley plans and implements programs to reduce risk of wildland fires, including plan review and construction inspection programs that ensure that the proposed project incorporates fire prevention measures. The plan review process looks at compliance with the CBC and CFC. In particular, Chapter 7A of the CBC regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a wildland–urban interface fire area. The project site is located in such an area and therefore project compliance with Chapter 7A is required. The purpose of CBC Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any fire hazard severity zone within a State Responsibility Area or a wildland–urban interface fire area to resist the intrusion of flames or burning embers projected by a vegetation fire, and to contribute to a systematic reduction in fire losses. The code includes provisions for building materials, infrastructure, defensible space, site access, and fire protection systems (e.g., water, fire flow, fire hydrants, interior fire sprinklers). Building material requirements address roofs, eaves, exterior walls, vents, appendages, windows, and doors, ultimately resulting in hardened structures that have been proven to perform at high levels (resist ignition) during a typically short duration of exposure to burning vegetation from wildfires. New buildings located in such areas, such as the project site, must comply with the ignition-resistant construction standards outlined in CBC Chapter 7A. Part 9 of Title 24 contains the CFC, which incorporates by adoption the International Fire Code with necessary California amendments. The purpose of this code is to establish the minimum requirements to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. Chapter 49 of the CFC contains minimum standards for development in the wildland–urban interface

and fire hazard areas. The project was reviewed by the Campus Fire Marshal (2019 and 2023) to ensure that the emergency provisions were acceptable per campus policy.

In February 2021, UC Berkeley approved the Hill Campus Wildland Vegetative Fuel Management Plan (WVFMP) for the Hill Campus East and Hill Campus West zones. This plan provides guidance on implementing projects that reduce wildfire risk and minimize potential for harmful effects of wildfire on people, property, and natural resources. The plan proposes treating vegetation that could become fire fuel according to four treatment types: evacuation support treatments, temporary refuge areas, fuel break treatments, and fire hazard reduction treatments. The project site is located within the WVFMP area and there are WVFMP measures being implemented near the project site.

Additionally, consistent with the 2021 LRDP EIR Mitigation Measure WF-2a, the project includes a wildfire protection plan (see Appendix C). Table 3-3 provides a summary of the project elements and recommendations from the wildfire protection plan that are incorporated into the proposed project. Table 3-3 also identifies the measures that are being implemented under the WVFMP, in the vicinity of the project site, as part of the WVFMP.

TABLE 3-3. PROPOSED PROJECT WILDFIRE PROTECTION PLAN – PROJECT ELEMENTS AND RECOMMENDATIONS

Action	Project Element	Recommendation	WVFMP Measure
Electrical distribution infrastructure must be installed and maintained per all applicable codes.	X		
The project will be permitted through the campus Fire Marshall for compliance with Fire Hydrant coverage of the proposed buildings.	X		
Should the synthetic turf or structures become impacted by fire, appropriate measures will be taken to ensure resulting debris do not enter the storm drainage system or the drainage ditch south of the proposed facility.		X	
Fire apparatus access to within 150 feet of all portions of the exterior walls of the 1st story must be provided.	X		
A Knox box would be located on the exterior of the building that stores the necessary keys for personnel to respond to an emergency.	X		
The entrance to the softball field is equipped with a gate/double doorway equipped with a Knox box.	X		
Install signs that indicate the project site is in a very High Fire Hazard Severity Zone.	X		
Install a dynamic fire danger sign at the project site or at another appropriate location within the developed portion of the Strawberry Canyon Recreation Area.	X		
Vegetation treatments within 100-ft of the project site will continue under the WVFMP as another way to prevent ignitions.			X
Develop a plan for contingencies for athletic events in the Hill Campus on red flag days when other events are held concurrently. The plan may include but would not be limited to: canceling or rescheduling events, funding and implementing UC Hill Patrols, use of shuttle, and coordinating responses and availability of equipment with Berkeley Fire Department.		X	
Continue maintenance of the area within 100 feet of the project site in accordance with the WVFMP.			X
Athletics staff will be trained annually regarding wildfire detection, reporting, extinguishing and evacuation. (This is specifically for staff who are at the Softball Field for competitive or other events.)	X		
At least one Athletics Department's Softball staff member will participate in a local Community Emergency Response Team.	X		
Fire extinguishers will be available on site. Fire extinguishers will be a minimum of a Class-A type.	X		

TABLE 3-3. PROPOSED PROJECT WILDFIRE PROTECTION PLAN – PROJECT ELEMENTS AND RECOMMENDATIONS

Action	Project Element	Recommendation	WVFMP Measure
A water hose will be connected during events, and staff will be familiar with the location of the valve.	X		
During a wildfire, the public address system and visual scoreboard will be used to assist evacuation guidance, based on coordination with the emergency management staff.	X		
Provide communication, through radios or other means to support campus's emergency response.	X		
Radios will be present and operated every time the ballfield is used. A contact sheet should be also present, and updated yearly.	X		
Develop a Hill Campus pre-incident map for the lower Strawberry Canyon facilities and share it with the Berkeley Fire Department and Facilities Services.		X	
Invite the Berkeley Fire Department to tour the Strawberry Athletics Facilities on an annual basis, if not more frequently.	X		
Coordinate with other Hill Campus occupants, share notification systems, and practice their evacuation plan together, annually.	X		
Attend the quarterly Hill Fire Mitigation Committee meetings.	X		
Inspect the defensible space around the project site consistent with the Hill Campus WVMP, and certify to its completion.			X
Assumes plan checking when it is to be permitted.	X		

3.7 DEMOLITION AND CONSTRUCTION

Demolition activities and construction of the project are anticipated to commence in 2024 and last for approximately 13 months. Project construction would generally take place Monday–Friday 7:00 a.m. to 7:00 p.m., with limited weekend hours if needed.

Construction activities for the project would entail the following phases: 1) demolition of some existing facilities, grading and excavation, tree removal, trenching for utilities, construction of stormwater facilities, and site preparation; 2) construction of the new field, concourse, and circulation and utility improvements; and 3) finishing of the field, building interior, circulation and signage, and installation of landscaping and fencing.

The limits of construction disturbance, including disturbance from construction staging, are shown by the project boundary line labeled 'Limit of Work' on Figure 3-6. The total area to be disturbed and graded is approximately 92,000 square feet. A total of 2,410 square feet of existing facilities would be demolished, including the bleachers and a restroom. The top two inches of existing natural grass field surface and the developed impervious surfaces would also be removed. Project construction would result in a net increase in pervious surface of approximately 8,200 square feet. The area around existing trees to be retained would be excluded from the work area to protect the trees.

Construction of the project would require excavation shoring and temporary structural and excavation work. The project does not include pile-driving activities; however, the project would include drilled piers. Excavation work would be limited to site grading and subsequent footing excavation. The project would include approximately 2,500 cubic yards of excavation and approximately 4,600 cubic yards of fill, for a total net import of approximately 2,100 cubic yards of fill.

Construction operations are coordinated to help reduce impacts in the vicinity and on campus. For example, the contractor would coordinate with both the City of Berkeley and UC Berkeley to limit overlap of work that requires overlapping truck routes. Construction work may require temporary sidewalk or parking lane closures; however, these temporary changes would be coordinated and would follow campus CBPs (see Section 3.7.3). Consistent with CBP TRANS-5, the Construction Traffic Management Plan for the proposed project would describe standards and protocols to protect bicyclists and pedestrians, provide for emergency vehicle access, and provide a point of contact on campus for construction-related complaints. Construction work requiring temporary changes to transit service provided by AC Transit, Bear Transit, and Lawrence Berkeley National Laboratory (LBNL) would be coordinated directly with AC Transit, Parking & Transportation, and LBNL.

To reduce emissions from construction equipment, UC Berkeley shall use equipment that meets the United States Environmental Protection Agency Tier 4 Final emissions standards or higher for off-road diesel-powered construction equipment with more than 50 horsepower, unless it can be demonstrated to UC Berkeley that such equipment is not commercially available.[2] Where such equipment is not commercially available, as demonstrated by the construction contractor, Tier 4 interim equipment shall be used. Where Tier 4 interim equipment is not commercially available, as demonstrated by the contractor, Tier 3 equipment retrofitted with a California Air Resources Board's Level 3 Verified Diesel Emissions Control Strategy (VDECS) shall be used. The requirement to use Tier 4 Final equipment or higher for engines over 50 horsepower shall be identified in construction bids and the following shall also be completed:

- Prior to construction, the project engineer shall ensure that all demolition and grading plans clearly show the requirement for United States Environmental Protection Agency Tier 4 Final or higher emissions standards for construction equipment over 50 horsepower.
- During construction, the construction contractor shall maintain a list of all operating equipment in use over 20 hours on the construction site for verification by UC Berkeley.
- The construction equipment list shall state the makes, models, and numbers of construction equipment on-site.
- To the extent that equipment is available and cost-effective, contractors shall use electric, hybrid, or alternate-fueled off-road construction equipment.
- Contractors shall use electric construction tools, such as saws, drills, and compressors, where grid electricity is available.
- Construction activities shall be prohibited when the Air Quality Index (AQI), as measured by the closest Bay Area Air Quality Management District monitoring station (e.g., Berkeley Aquatic Center), is greater than 150 for particulates and ozone in the project area.
- Contractors shall provide information on transit and ridesharing programs and services to construction employees. Additionally, meal options on-site and/or shuttles between the project sites and nearby meal destinations for construction employees shall be provided.

[2] "Commercially available" means the availability of Tier 4 Final engines similar to the availability for other large-scale construction projects in the city occurring at the same time and taking into consideration factors such as (i) potential significant delays to critical-path timing of construction and (ii) geographic proximity to the project site of Tier 4 Final equipment.

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4. Environmental Setting, Impacts, and Mitigation Measures

4.1 INTRODUCTION TO ANALYSES

This chapter provides an analysis of the potential physical environmental effects of implementing the UC Berkeley Cal Softball Field Renovation Project (proposed project or project). The following sections in this chapter evaluate the potential environmental impacts of the proposed project:

- 4.2 — Aesthetics
- 4.3 — Biological Resources
- 4.4 — Cultural Resources and Tribal Cultural Resources
- 4.5 — Noise
- 4.6 — Transportation
- 4.7 — Wildfire

4.1.1 SCOPE OF ANALYSES

4.1.1.1 SECTION ORGANIZATION

Each environmental resource section listed above is organized as follows:

- **Environmental Setting.** This section provides a general overview of the existing physical environmental conditions related to the topic being addressed, based on the conditions present at the time that the Notice of Preparation for the EIR was released (2022).
- **Regulatory Framework.** This section describes applicable University, federal, state, and local laws and regulations relevant to the environmental resource topic and the proposed project.
- **Impacts and Mitigation Measures.** This section identifies thresholds of significance used to evaluate whether an impact is considered significant, based on standards derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. In some cases, UC Berkeley policies and regulations or professional judgment are used to further define CEQA significance thresholds.

  This section first presents a discussion of the significance thresholds for which no impacts have been identified, if any. The section then evaluates and analyzes project impacts, states the level of significance prior to mitigation, and proposes mitigation measures for significant or potentially significant impacts that would reduce such impacts, if feasible. A statement regarding the level of significance of each impact after mitigation follows the discussion of mitigation measures for that impact.

  Cumulative impacts are discussed in each environmental resource section following the description of the project-specific impacts. The cumulative impact analysis considers the effects of the proposed project together with, and against the backdrop of, other past, present, or reasonably foreseeable future projects proposed in the project vicinity and region. The cumulative impact analysis is based on the same setting, regulatory framework, and significance thresholds presented for each respective resource topic. Additional mitigation measures may be identified if the analysis determines that the proposed project's incremental contribution to a significant cumulative impact would be cumulatively considerable and, therefore,

significant in and of itself. Section 4.12, Cumulative Impacts Overview, below describes the assumptions and methodology for assessing cumulative impacts.

4.1.1.2 SIGNIFICANCE DETERMINATIONS

In accordance with CEQA, specifically Public Resources Code Section 21068, a "significant effect on the environment" means a substantial or potentially substantial adverse change in the environment. The significance thresholds used for each environmental resource topic are presented in each section of this chapter immediately before the discussion of impacts. For each impact described, one of the following significance determinations is made:

- ***No Impact.*** This determination is made if there is no potential that the proposed project could affect the resource at issue.
- ***Less than Significant.*** This determination applies if there is a potential for some limited impact on a resource, but the impact is not significant in accordance with the significance standard.
- ***Less than Significant with Mitigation.*** This determination applies if there is the potential for a substantial adverse effect in accordance with the significance standard, but mitigation is available to reduce the impact to less than significant.
- ***Significant and Unavoidable.*** This determination applies to impacts that are significant, and for which there appears to be no feasible mitigation available to substantially reduce the impact.

4.1.2 CUMULATIVE IMPACTS OVERVIEW

The section below presents the CEQA requirements pertaining to the cumulative impacts analysis and the cumulative projects that have been considered in the cumulative impacts analysis presented for each environmental resource topic, at the end of each section in this chapter.

4.1.2.1 CEQA GUIDELINES REQUIREMENTS

CEQA Guidelines Section 15130(a) requires that an environmental impact report (EIR) discuss cumulative impacts of a project "when the project's incremental effect is cumulatively considerable." As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Pursuant to CEQA Guidelines Section 15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," the lead agency need not consider the effect significant.

CEQA requires an evaluation of cumulative impacts when they are significant. When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. Furthermore, according to CEQA Guidelines Section 15130(a)(1), there is no need to evaluate cumulative impacts to which the project does not contribute.

An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus not significant when, for example, a project funds its fair share of a mitigation measure designed to alleviate the cumulative impact, according to CEQA Guidelines Section 15130(a)(3).

Additionally, an EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide detail as great as that provided for the impacts that are attributable to the project alone, according to CEQA Guidelines Section 15130(b). The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified project contributes.

CEQA Section 21094(e)(1) states that if a lead agency determines that a cumulative effect has been adequately addressed in a prior environmental impact report, that cumulative effect is not required to be examined in a later EIR. The section further indicates that cumulative effects are adequately addressed if the cumulative effect has been mitigated or avoided as a result of the prior EIR and adopted findings or can be mitigated or avoided by site-specific revisions, imposition of conditions or other means in connection with the approval of the later project (CEQA Section 21094[e][4]).

4.1.2.2 CUMULATIVE PROJECTS AND SCOPE OF ANALYSIS

The analysis of cumulative impacts may consider either 1) a list of past, present, and probable future projects producing cumulative impacts; or 2) a summary of growth projections contained in an adopted plan that evaluates conditions contributing to cumulative impacts, such as those contained in a General Plan. Projects that are relevant to the cumulative analysis include projects that could:

- Contribute incremental environmental effects on the same resources as, and would have similar impacts to, those discussed in the EIR applicable to the proposed project.
- Be located within the defined geographic scope for the cumulative effect. The defined geographic scope is dependent on the environmental resource affected.
- Contribute impacts that coincide with the proposed project's impacts during either construction (short-term) or operation (long-term).

This EIR uses a list-based approach for the development of the cumulative projects. Based on the above factors, cumulative projects considered for the analysis include pending projects in the City of Berkeley, on the UC Berkeley campus, and on the Lawrence Berkeley National Laboratory campus (see Table 4.1-1).

TABLE 4.11-1. CUMULATIVE PROJECTS

Project Name	Project Location / UC Berkeley Campus Zone	Project Description	Estimated Construction Schedule
Pending Projects in the City of Berkeley			
1899 Oxford Street	1899 Oxford Street	Construction of an 8-story, mixed-use residential development with ground level lobbies and commercial space with a State of California Density Bonus. Includes removal of existing non-landmarked structure.	Unknown
2510 Channing Way	2510 Channing Way	Construction of 8-story building with ground-floor commercial and 40 dwelling units	Unknown
2680 Bancroft Way	2680 Bancroft Way	Conversion of Bancroft Hotel into a residential building. Proposed project will have approximately 15,800 square feet of residential area, with 15 units & 22 GLA rooms and includes affordable housing units for State Density Bonus. This project will retain and rehab the original facade of the historic building.	Unknown

TABLE 4.11-1. CUMULATIVE PROJECTS

Project Name	Project Location / UC Berkeley Campus Zone	Project Description	Estimated Construction Schedule
2433 Telegraph Avenue	2433 Telegraph Avenue	Construction of 7-story, 254-bed dormitory	Unknown
2435 & 2441 Haste Street	2435 & 2441 Haste Street	Demolition of existing 2-story residential building at 2435 Haste St. and replacement with 32-unit, 5-story, residential building that would occupy space on both 2435 and 2441 Haste St.	Unknown
1951 Shattuck Avenue Mixed-Use Project	1951 Shattuck Avenue	Construction of 12-story residential building with 156 rental units and ground-floor retail	24-month construction duration; start date unknown
Alexander C. Stuart House	2524 Dwight Way	Construction of detached 2-story residence and renovation of existing City Landmark single-family residence	Unknown
Shattuck Square	2023 Shattuck Avenue	Demolition of existing structure; construction of new 7 story mixed-use building with 46 units and ground-floor commercial space	Unknown
Southside Plan Area	Southside Plan Area: bounded by Dwight Way to the south, Bancroft Way to the north, Prospect Street to the east, and Fulton Street to the west	Southside Plan (Zoning Ordinance) Amendments by City of Berkeley Planning Department	N/A
2023 – 2031 City of Berkeley Housing Element Pipeline Projects[1]	Various locations throughout the City of Berkeley	Construction of 35 residential and mixed-use projects, of various densities, that include a total of 1,548 housing units and commercial space on various project sites. In total, pipeline projects would cover approximately 5.54 acres throughout the City.	Unknown
Pending UC Berkeley Projects			
Academic Replacement Building (Evans Hall Classroom Replacement Building)	Campus Park	Approximately 78,000 gross square foot replacement of classroom space and the Academic Office Building; replacement space for Evans Hall Programs	Winter 2023 - 2026
Anchor House - Transfer Student Housing[3]	Campus Park	Transfer student housing is on Oxford Avenue. Demolition of existing on-site structures and the construction and operation of a new 16-story (14 stories above ground) mixed-use building that would include student housing (approximately 770 beds), campus life space (approximately 20,000 square feet), and ground-floor commercial (approximately 17,000 square feet)	November 2021 – June/July 2024
Bancroft Parking Garage Replacement[2]	Campus Park	Replacement of the Bancroft Parking Structure with a multi-level garage. Provides replacement and net new parking spaces.	June 2025 – August 2026
Bechtel Engineering Center - Renovation and Addition	Campus Park	Renovation and addition to the Bechtel Engineering Center to accommodate student campus life space and surge space for future seismic projects.	Fall 2023 – Winter 2024
Centennial Drive Bridge Replacement[3]	Hill Campus East	Replacement of structurally deficient bridge on Centennial Drive; new overcrossing and re-route of Centennial Bridge, in partnership with Lawrence Berkeley National Laboratory	Fall 2022 – Winter 2024
Dwinelle Annex Renovation	Campus Park	Renovation to address seismic and life-safety improvements to allow for occupancy by the DSP.	Fall 2023 – Fall 2024
Gateway New Academic Building[2]	Campus Park	New construction of an approximately 375,000 square foot academic building create a new home and	September 2022 – August 2025

TABLE 4.11-1. CUMULATIVE PROJECTS

Project Name	Project Location / UC Berkeley Campus Zone	Project Description	Estimated Construction Schedule
		support enrollment growth within the Division of College of Computing, Data Science, and Society. Provides seismic replacement space for occupants currently in Evans Hall and South Hall.	
Haas Entrepreneur Hub - 2232 Piedmont Renovation[2]	Campus Park	Renovation and restoration of 2232 Piedmont Avenue for the new Entrepreneurship Hub (EHub) for the UC Berkeley Haas School of Business.	June 2022 – February 2024
Heathcock Hall[2]	Campus Park	New chemistry lab building to replace existing, deficient lab space within Lewis Hall and create space for collaboration and entrepreneurship within the College of Chemistry.	2023 – 2026
Moffitt Library DM and Renovation Project	Campus Park	Renovation of Levels 1 - 3 to improve student study space, classrooms, and maker spaces	May 2024 – June 2025
People's Park Student Housing and Open Space[3]	City Environs	Demolition of the existing on-site structures and park amenities, and the construction and operation of two new mixed-use buildings and revitalized open space, including: (1) a proposed student residential building for student and	2023 – 2026
Switch Station 8 / Old Art Gallery Seismic	Campus Park	Installation of new switch gear and seismic improvements to the Old Art Gallery, in support of the Clean Energy Campus project	July 2023 – July 2024
Wildland Vegetative Fuel Management Plan	Hill Campus East	Plan intended to provide guidance to implement projects that reduce wildfire risk	Summer 2021 – Ongoing
Pending Lawrence Berkeley National Laboratory (LBNL) Projects			
Advanced Light Source Upgrade	LBNL	Upgrade of the Advanced Light Source (ALS) that will endow the ALS with revolutionary x-ray capabilities	2022 – 2029
BioEPIC Building	LBNL	Construction of new 73,000 square foot laboratory and office building	2021 – 2024
Linear Asset Replacement	LBNL	Sitewide utility project; utilities include natural gas, domestic water, electrical, communication/data, storm drain, and sanitary sewer systems. In planning stages.	Phase 1: 2024 – 2026 Phase 2: 2026 – 2030
Grizzly Yard and Substation Expansion (LAMP Subproject 1)	LBNL	Increase of main substation permanent capacity; includes two new transformers	2024 – 2026
Transit Hub Sitework and Utilities	LBNL	Construction of new transit hub (main shuttle drop off station) to support the with Lawrence Berkeley National Lab (LBNL) shuttle system; utility renewal-based modifications and improvements, including new electrical, sanitary sewer, water and storm drain	2021 – September 2026
Seismic Safety and Modernization (SSM)	LBNL	Demolition of Building 54 and construction of new facility with a cafeteria, conference room space for relocating Health Services and Human Resources personnel; includes seismic retrofit of B48	2022 – 2025
B73 Modernization	LBNL	Seismic upgrade of Building and renovation to accommodate lab and office use; includes demolition of building interior and a small nearby utility building (Building 73A)	2022 – 2024
National Energy Research Scientific Computing (NERSC-10 facility upgrade)	LBNL	No change in existing building footprint or major infrastructure renovation outside of the footprint associated with the upgrade. Utility renovations to bring power into the building will be completed by LAMP.	2024 – 2028

Source: City of Berkeley 2023b.

Notes:

[1] This includes an overall development envelope of the City of Berkeley Housing Element Pipeline Projects per Table C-6 of the City's 2023 – 2031 Housing Element Update (5th submittal to the California Department of Housing & Community Development; dated February 17, 2023).

[2] Campus periphery projects – these are in the campus park, but at the periphery.

[3] Off campus – in City of Berkeley, but not in campus park. [3] Off campus – in City of Berkeley, but not in campus park.

4.2 AESTHETICS

This section describes the existing aesthetic conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project and cumulative impacts, and identifies mitigation measures for any significant or potentially significant impacts related to implementation of the UC Berkeley Cal Softball Field Renovation Project (project or proposed project). As further described in Section 4.2.1, Environmental Setting, the analysis is based on site observations and photographs, review of aerial imagery of the site and surrounding area to determine existing uses and visual character, review of project plans including field lighting, review of project photo simulations, and review of the lighting analysis prepared for the proposed project (Appendix D).

4.2.1 ENVIRONMENTAL SETTING

The project site includes the existing Cal Softball Field and Witter Lot (a surface parking lot) located on Centennial Drive, portions of Centennial Drive right-of-way and sidewalk, and utility facilities located at the southeast corner of the Centennial Drive and Stadium Rim Way intersection. The project site is located within the Strawberry Canyon Recreation Area (SCRA), which is within the Hill Campus West land use zone, as identified in the 2021 Long Range Development Plan (LRDP) (UC Berkeley 2021a). The Hill Campus West comprises 50 acres and consists of student housing as well as sports and recreation facilities (including Memorial Stadium, Maxwell Field, Witter Rugby Field, Strawberry Canyon Recreation and Pool, and the Cal Softball Field) and a performance/assembly venue (i.e., the Greek Theatre).

Witter Rugby Field is directly to the west of the project site, and Strawberry Canyon Recreation and Pool are to the northeast. California Memorial Stadium is located at the terminus of Centennial Drive to the west. Immediately south of the project site is a densely wooded area, which includes an unnamed recreational trail running eastward up into the Hill Campus East from the western end of Canyon Road. Beyond the wooded area to the south of the project site is the Panoramic Hill Neighborhood.

Memorial Stadium currently seats over 60,000 persons for intercollegiate football games. The other recreational facilities are playing fields with limited capacity for spectators. While the Cal Softball Field, adjacent Witter Rugby Field, and other recreational facilities along Centennial Drive are situated on relatively flat terrain, the Hill Campus West area is marked by steep topography rising from an elevation of 376 feet along Gayley Road to 560 feet at the eastern boundary of the area (i.e., the hilly terrain to the north of Strawberry Canyon Recreation and Pool) (UC Berkeley 2021a). Hilly terrain is also prevalent to the south of the project site.

4.2.1.1 VISUAL CHARACTER AND QUALITY

The existing Cal Softball Field is approximately 40,000 square feet (0.90 acres) in size and includes turf grass on the field, a dirt infield and field perimeter (including outfield warning track and foul area perimeter within the field fence line), developed impervious surfaces and existing landscaping primarily consisting of mature trees. The existing field dimensions do not meet National Collegiate Athletic Association Division I (NCAA) requirements. An aerial view of the Cal Softball Field (and adjacent rugby field) is included as Figure 3-3 (see Chapter 3, Project Description) and a view of the field from spectator stands behind home plate is presented as Figure 4.2-1, Existing Conditions: Cal Softball Field (see Photo 1). The outfield fence is covered with a semi-transparent, blue screening fabric and a small scoreboard supported by two wooden beams is located beyond the left field fence. Dugout and bullpens facilities are installed at-grade with the playing field. A 10- to 12-foot-high chain-link backstop structure is

erected behind the field's home plate area and overhangs the home plate area. Spectator stands with ascending rows of seating are located behind the backstop and during the softball season, portable bleachers are installed beyond the left field fence with elevated rows of seating offering field views above the site's perimeter fence (see Chapter 3, Project Description, Figure 3-4 and Figure 4.2-1 [Photo 2 encompasses the field view from the portable bleachers]). Single-story structures housing restroom and clubhouse facilities are located to the west of the third-base side dugout and bleachers. Two steel shipping containers painted green have been placed along the first and third base sides of the field and are used for storage. Existing field lighting is supported by 4 permanent towers that are approximately 50 feet high but existing lights reach only a portion of the playing field and do not meet NCAA requirements.[1] When the university has hosted playoff games, 6, 53-foot tall portable lighting structures were installed at the Cal Softball Field to allow for games after dark to be played (existing field lighting is included in Photo 2, Figure 4.2-1). The existing public address system consists of six portable speakers affixed to poles along the perimeter of the Cal Softball Field. Mature trees are generally located to the west and south of the softball field fence line and a small stand of redwoods are located just beyond center field and right-center field. Trees located behind home plate and on the hillside beyond the first base line are shown on Figure 4.2-1.

4.2.1.2 SCENIC VIEWS AND VISTAS

No scenic views or scenic vistas (i.e., broad, long-range views such as from an elevated vista point) are available from the Cal Softball Field project site due to the presence of mature trees to the west, east, and south of the field, and steep, rising terrain to the north and south. In addition to nearby trees, the local terrain to the north and south of the Cal Softball Field is included on Figure 3-3.

Scenic vistas within the UC Berkeley campus are primarily located within the Hill Campus East, located to the immediate east of the Hill Campus West area (see Figure 1.1: Campus Development Areas of the UC Berkeley Long Range Development Plan; UC Berkeley 2021a). The local elevation in the Hill Campus East provides for panoramic westward views towards the San Francisco Bay and City of San Francisco (UC Berkeley 2021b). Specifically, there are a number of scenic vistas off of Grizzly Peak Boulevard, such as the Upper Jordan Fire Trail, Grizzly Peak Vista Point and the Grizzly Peak Boulevard Overlook, as well as views offered from the Lawrence Hall of Science and from fire roads in this zone. Views of the project site are available from the Upper Jordan Fire Trail and public parking areas/scenic vista points off Grizzly Peak Boulevard, all of which are generally located over 1 mile to the northeast.

In addition to Hill Campus East, scenic vistas may be available from residentially developed hillsides located to the south of the softball field. The project site may also be visible from nearby hillside residences. However, except for brief, unencumbered views to the west/northwest from public roads in the area, the scenic views available from the developed hillsides are private and only available from private residences/residential properties. Therefore, these are not considered scenic vistas for purposes of this analysis. Lastly and as discussed in the Chapter 3, Project Description, there is an unnamed recreational trail running eastward up into the Hill Campus East from the eastern end of Canyon Road. As shown on Figure 4.2-2, partial views to the project site are available from the trail; however, because the length of the view is short and primarily encompasses the foreground viewing distance (i.e., areas within 0.5 mile of the viewer), views from the trail are not considered scenic vistas for purposes of this analysis.

[1] NCAA best lighting practices for softball for regional and national broadcasts include horizontal light levels of 100 footcandles infield/70 footcandles outfield; vertical light levels of 70 footcandles infield/40 footcandles outfield to high home plate camera, 1st baseline camera, and 3rd baseline camera; and grid spacing of 20 feet by 20 feet (NCAA 2011).

Photo 1

Photo 2

FIGURE 4.2-1

Existing Conditions: Cal Softball Field

UC Berkeley Cal Softball Field Renovation Project

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Photo 1

Photo 2

FIGURE 4.2-2

Existing Conditions: View from Nearby Trail

UC Berkeley Cal Softball Field Renovation Project

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4.2.1.3 SCENIC RESOURCES/SCENIC HIGHWAYS

There are no eligible or officially designated state scenic highways in the immediate project area. The nearest state scenic highway, State Route 13 from approximately State Route 24 to Interstate 580 (milepost 4.2 to milepost 9.6) is approximately 1.9 miles from the project site and the Cal Softball Field is not visible from SR 13 due to intervening terrain (Caltrans 2023). The nearest officially designated state scenic highway, State Route 24 east of the Caldecott Tunnel, is over two miles from the project site.

4.2.1.4 LIGHT AND GLARE

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can be visually disruptive to humans and nocturnal animal species. Generally, it takes the form of street lighting along major streets and highways and nighttime illumination of commercial buildings, shopping centers, and industrial buildings. Light spillage from residential areas is usually screened by trees (UC Berkeley 2021b).

The Cal Softball Field and other sporting venues in the surrounding SCRA include field lighting and are sources of existing night light and potential glare. For example, operable field lighting is installed at the adjacent Witter Rugby Field and at California Memorial Stadium. As indicated under Visual Character and Quality above, the Cal Softball Field also has existing field lighting. In addition, overhead lighting is installed along Centennial Drive and contributes lighting to the night environment. Nighttime lighting and glare generated by sport fields is temporary and occurs during a limited number of evenings per year when events are scheduled.

As further detailed in Section 4.2.3, below, a detailed lighting analysis was prepared to document existing lighting levels and determine future lighting levels associated with operation of the proposed project. The lighting analysis is included as Appendix D to this Draft Environmental Impact Report (Draft EIR). As part of the analysis, HLB Lighting Design performed two site visits to measure existing lighting levels associated with the Cal Softball Field and with the adjacent Witter Rugby Field. Measurements of vertical light spill[2] (foot candles) and maximum intensity (candela; maximum intensity is an indicator of glare[3] potential) were taken from representative receptor sites in the surrounding area or on the project site (see Figure 4.2-3). The receptor sites were selected to illustrate light spill and glare potential in various directions and elevations in the surrounding area and include: receptor site A located southwest of the project site at the eastern end of Canyon Road; receptor site B located southeast of the project site on the unnamed trail; receptor site C located southwest of the project site on Mosswood Road; and receptor site D located on Centennial Drive just northeast of the project site. Views from the selected receptor sites towards the project site are presented on Figure 4.2-4.

The measurements were taken in August 2022 for the rugby field and March 2023 for the softball field and allowed for the light sources to stabilize out (i.e., measurements were not taken immediately after lights were turned “on”). For existing conditions, measurements were taken that captured (1) existing lighting with softball and adjacent rugby field lighting “on”; (2) existing lighting from the adjacent rugby field lighting “on”, and (3) existing lighting from softball and adjacent rugby field lighting “off” (i.e., this scenario measured ambient lighting levels). Clear sky conditions occurred during both site visits and all measurements were taken using a Sekonic L-758 light meter with a low-end

[2] Light spill is the light falling onto a surface outside of the subject property. Light spill can be vertical or horizontal. Horizontal light spill was not analyzed in the lighting analysis due to the significant elevation change of the hillside south of the project site, as described in Appendix D.

[3] Glare is the perceived brightness of a light source, influenced by many factors including photometric output, fixture geometry, color of light, personal sensitivity, and environmental conditions.

range limit of 0.06 fc (see Appendix D). Measured vertical spill light and maximum intensity at the four representative locations are presented in Table 4.2-1 and Table 4.2-2.

TABLE 4.2-1. EXISTING CONDITIONS: VERTICAL LIGHT SPILL (IN FOOT CANDLES)

Receptor Site	Softball + Rugby + Ambient	Rugby + Ambient	Ambient Only	Softball Only1	Rugby Only1
A	0.56	0.23	0.20	0.33	0.03
B[2]	0.11	<0.06	<0.06	0.11	<0.06
C[3]	<0.06	<0.06	<0.06	<0.06	<0.06
D	0.56	0.10	0.06	0.46	0.04

Source: HLB Lighting Design 2023 (Appendix D)
Notes:
1 The "softball only" and "rugby only" measurements were derived from the other measurements taken in the field.
2 The spill light at receptor site B fell below the threshold of sensitivity of the light meter once the existing softball lighting was extinguished.
3 The conditions at receptor site C were so dark that the illuminance was below the sensitivity of the light meter.

TABLE 4.2-2. EXISTING CONDITIONS: MAXIMUM INTENSITY (CANDELA)[1]

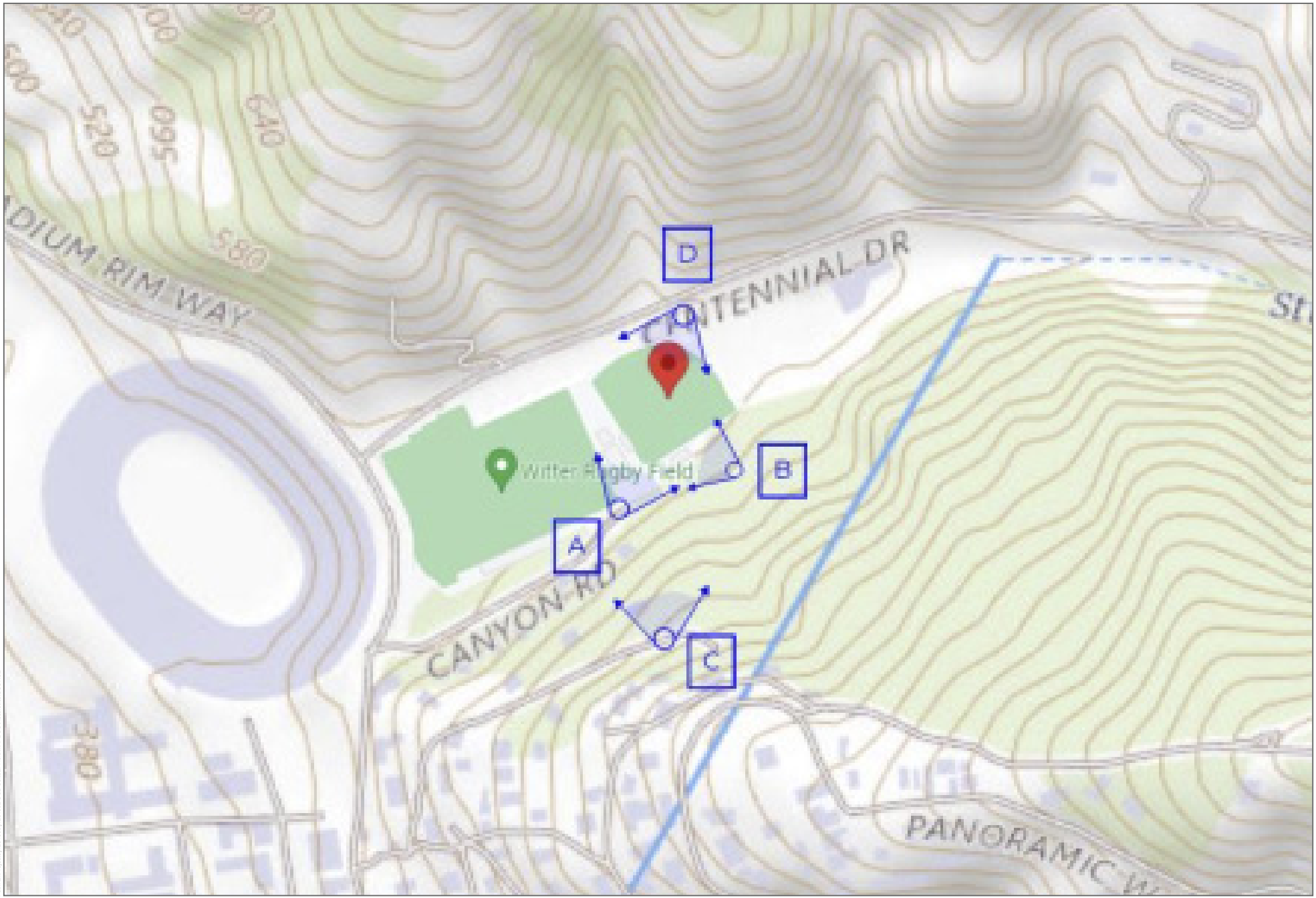
Receptor Site	Existing Softball Lights On
A	200
B	2,682
C	No direct view[2]
D	8,053

Source: HLB Lighting Design 2023 (Appendix D)
Notes:
1 Maximum intensity is used to capture the apparent brightness of a light source as viewed from a distance. Maximum intensity, measured in units of candela, is used to evaluate the glare potential of a lighting installation. Maximum intensity is measured using a two-part method, combining luminance measurements taken with a meter with high-dynamic range photography analysis. Maximum intensity in units of candela is used throughout the lighting analysis interchangeably with luminance in units of candela per square meter per industry standards as the viewing distances are more than 5x the largest dimension of the light.
2 Existing foliage on the hillside to the south of the project site provides for significant obstruction of lighting.

VIEWER EXPOSURE

Viewer exposure from public vantage points is a function of three elements: visibility, number of viewers, and duration of view. These elements, as related to the project site and primary groups provided views to the project site (i.e., road users [motorists, pedestrians, cyclists, etc.], and trail-based recreationists), and project features (i.e., lighting) are described below. For purposes of this assessment, viewer exposure is associated with the duration of available daytime and nighttime views.

Motorists with views of the project site primarily include those on Centennial Drive. Views to the project site are available from the network of neighborhood roads on developed hillsides located to the south; however, these views are generally hindered/partially blocked by the presence of dense vegetation (i.e., trees). From Centennial Drive (Centennial Drive parallels the softball field's parking area [i.e., portion of Witter Lot] for approximately 315 feet), views of the softball field are generally limited to field lights and the blue fabric lined outfield chain-link fence. From Centennial Drive, the duration of available views to the project site is short, generally lasting less than 10 seconds. Lastly and as discussed in the Project Description, there is an unnamed recreational trail running eastward up into the Hill Campus East from the eastern end of Canyon Road. Views to the project site may be available from the trail; however, the presence of dense groupings of intervening mature trees would generally block views of the softball field from this trail.



Source: HLB Lighting Design 2023

FIGURE 4.2-3

Lighting Receptor Site Locations

UC Berkeley Cal Softball Field Renovation Project

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Source: HLB Lighting Design 2023

FIGURE 4.2-4

Lighting Receptor Sites

UC Berkeley Cal Softball Field Renovation Project

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4.2.2 REGULATORY FRAMEWORK

4.2.2.1 FEDERAL

There are no federal plans, policies, regulations, or laws related to aesthetics applicable to the proposed project.

4.2.2.2 STATE

CALIFORNIA SCENIC HIGHWAY PROGRAM

The California Department of Transportation (Caltrans) manages the State Scenic Highway Program. Established by the State Legislature in 1963, the State Scenic Highway Program lists highways that are either eligible for designation as a scenic highway or already are designated as a scenic highway. A highway may be designated as scenic on the basis of the amount of natural landscape that can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263. The Streets and Highways Code establishes State responsibility for protecting, preserving, and enhancing California's natural scenic beauty of scenic routes and areas that require special scenic conservation and treatment. As indicated in Section 4.2.1, Environmental Setting, there are no eligible or officially designated state scenic highways in the immediate project area.

CALIFORNIA BUILDING CODE

The State of California provides a minimum standard for building design through Title 24, California Building Standards Code, of the California Code of Regulations. The California Building Code (CBC) is in Part 2 of Title 24. The CBC is updated on a three-year cycle. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. The CBC includes standards for outdoor lighting that are intended to reduce light pollution and glare by regulating light power and brightness, shielding, and sensor controls.

4.2.2.3 UNIVERSITY OF CALIFORNIA

UC AND UC BERKELEY DESIGN REVIEW

UC capital projects require design review prior to approval. This process includes several policies and procedures required for capital improvement projects. The UC's Policy for Independent Design and Cost Review of Building Plans is to maintain the quality of design of UC construction projects, and review may focus on compatibility and appropriateness of a project's design within its setting. For the UC Berkeley campus, the UC Berkeley Design Review Committee provides advice to the Campus Architect regarding historic preservation and design of UC Berkeley buildings and spaces. The UC Berkeley Design Review Committee is made up of design professionals and faculty from the disciplines of architecture, landscape architecture, urban design and planning, and historic preservation.

PHYSICAL DESIGN FRAMEWORK

UC requires every campus to have a Physical Design Framework. The UC Berkeley Physical Design Framework (Framework), accepted by the Regents in July 2021, includes principles for both land use and architecture, and was built on the policies and guidelines in the 2021 LRDP (UC Berkeley 2021c). The Framework is an advisory guidance document intended to convey a set of design intentions, rather than prescriptive regulations or mandates, and is used

by the campus Design Review Committee when reviewing a project's design. While campuses are required to consider the Framework's guidelines and principles in developing their projects, a project is not required to be consistent with every guideline in the Framework. The following are applicable guidelines to the proposed project (which is in the Hill Campus West land use zone as defined in the 2021 LRDP and reflected in the Physical Design Framework):

- Strategy HCW-1: Create a welcoming public realm that prioritizes the pedestrian experience and campus connectivity.
- Strategy HCW-2: Integrate sustainability and resilience throughout the zone.
- Strategy HCW-3: Steward the character of important sites.
    - Transition gracefully between the Hill Campus West and Hill Campus East, from a mostly developed context on the western side of the Hill Campus West to a mostly natural environment on the eastern side of the Hill Campus West.

UC BERKELEY CAMPUS DESIGN STANDARDS

UC Berkeley created the Campus Design Standards to guide design and construction professionals to complete lasting, high-quality additions to the UC Berkeley built environment. The Campus Design Standards, along with applicable codes such as the CBC, ensure that new construction and renovation projects at UC Berkeley integrate industry best practices and experience with existing campus buildings, infrastructure, grounds, and maintenance issues. UC Berkeley's Campus Design Standards contain construction specifications to guide design and ensure that new construction and renovation projects at UC Berkeley utilize continuing best practices (CBPs) (see below) and are integrated with the existing campus. They are administered by the Campus Building Department and apply to all construction projects sponsored by the UC.

In addition to providing lighting that complies with the CBC, the Campus Design Standards include general illumination levels based on the latest standard published by the Illuminating Engineering Society (IES) of North America, the California Energy Code, and applicable UC policies such as the UC Sustainability Practices Policy. The Campus Design Standards do not expressly include specifications for sport lighting. The Campus Design Standards include the following requirements for exterior lighting:

- The IES light levels recommended in its Lighting Handbook shall be used as a guide for campus outdoor lighting. Campuses shall also consider IES activity levels (high, medium, and low) in the design of lighting in open parking facilities. These activity levels reflect both vehicular and pedestrian activity.
- In general, the campus goal for exterior lighting is to promote safety and create visibility by creating layers of light as well as reducing light pollution and energy consumption.
- Light fixtures shall generally include cut-off shields as needed to prevent light trespass into neighboring off-campus areas; however, some trespass may be allowable in lower-density areas, such as through glades and natural areas, where minimal light spill enhances safety.
- Pedestrian and bicycle parking area lighting shall be downlit.

UC BERKELEY CONTINUING BEST PRACTICES

UC Berkeley applies continuing best practices (CBPs) relevant to aesthetics as part of the project approval process. CBPs that are implemented as part of the proposed project are identified in Chapter 3, Project Description and provided in Appendix B, UC Berkeley Continuing Best Practices, of this Draft EIR. Applicable CBPs, which include both those implemented as part of the proposed project and those implemented as part of ongoing operations, are identified and assessed for their potential to reduce adverse physical impacts later in this section under Section 4.2.3, Impacts and Mitigation Measures.

4.2.2.4 LOCAL

As discussed in Chapter 2, 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. As such, UC Berkeley will not consider local plans, policies and regulations in its evaluation of the environmental effects of the proposed 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. Local plans, policies, and regulations are not considered in the assessment of aesthetic impacts in this EIR, as they are not used by UC Berkeley as thresholds or standards of significance and are not warranted to provide context for the assessment of aesthetics impacts. Therefore, local plans, policies and regulations are not provided herein.

4.2.3 IMPACTS AND MITIGATION MEASURES

4.2.3.1 STANDARDS OF SIGNIFICANCE

The standards of significance used to evaluate the impacts of the proposed project related to aesthetics are based on Appendix G of the CEQA Guidelines, as listed below. The proposed project would result in a significant impact if it would:

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. Substantially degrade the existing visual character or quality of public views (i.e., views that are experienced from publicly accessible vantage points) of the site and its surroundings if in a non-urbanized area, or would conflict with applicable zoning and other regulations governing scenic quality if in an urbanized area.

D. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

E. In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact.

Regarding Significance Standard C (discussed in Impact AES-2 below), while the project site is located within an urbanized area, based on the definitions included in Public Resources Code Section 21071,[4] it will be evaluated as a non-urbanized area under this standard given the prevalence of 1- to 2-story, single-family residential development on individual lots and the lack of traditionally urban utilities including streetlights in the immediate surroundings including hillside residential neighborhoods to the south and southwest.

Regarding Significance Standard D, thresholds of significance for lighting and glare are established in the lighting analysis prepared for the proposed project (see Appendix D). Specifically for lighting, HLB Lighting Design determined that the appropriate source for the establishment of the threshold of significance is the International Commission on Illumination's (CIE) *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*, 2nd Edition (CIE 2017). This guide provides criteria or limits for a range of environmental lighting zones that account for the ambient brightness of the environment experienced. The environmental lighting zones are shown in Table 4.2-3.

[4] Public Resources Code Section 21071 indicates that an "urbanized area" means (among several definitions) an incorporated city with at least 100,000 persons. According to the California Department of Finance, the estimated January 2023 population for the City of Berkeley was 123,188 persons (Department of Finance 2023).

TABLE 4.2-3. ENVIRONMENTAL LIGHTING ZONES

Zone	Lighting Environment	Examples of Lighting Conditions
E0	Intrinsically dark	UNESCO Starlight Reserves, IDA Dark Sky Parks, Major optical observatories
E1	Dark	Relatively uninhabited rural areas
E2	Low district brightness	Sparsely inhabited rural areas
E3	Medium district brightness	Well inhabited rural and urban settlements
E4	High District brightness	Town and city centers and other commercial areas

The vertical light spill threshold of significance is 0.46 fc (5 lux), is based on "Environmental Zone 2" (E2) that is defined as areas of "Low District Brightness / Rural Residential" and approximates the use of the area surrounding the project site. This threshold is appropriate for the project site given that it reflects environments with low levels of brightness, like exists in the vicinity of the project site. While the density and scale of nearby hillside residential neighborhoods do not resemble traditional rural patterns of low-density development on large lots, local streets do not feature streetlights and other sources of outdoor neighborhood lighting are limited. In addition, the area bordering the project site to the north, south, and southeast include densely vegetated and undeveloped hillsides that contain no sources of outdoor lighting. For these reasons, the E2 zone was determined to be appropriate for the local project site lighting environment. For glare (or maximum intensity), HLB Lighting Design determined that the appropriate source for the establishment of the threshold of significance is EN 12913:2007 "Light and lighting – Sports lighting" (BS EN 2007). Using "Environmental Zone 2", the threshold of significance for maximum intensity is 7,500 cd.

ANALYTICAL METHODS

The evaluation of aesthetics and aesthetic impacts is highly subjective. It requires the application of a process that objectively identifies the visual features of the environment and their importance. The existing aesthetic setting involves identifying existing visual character, including visual resources and scenic vistas unique to the project area, as described in Section 4.2.1, Environmental Setting. Changes to aesthetic resources resulting from implementation of the proposed project are identified and qualitatively evaluated (generally) based on the proposed modifications to the existing setting and the viewer's sensitivity. Anticipated changes to lighting (vertical spill light) and glare potential (maximum intensity) are quantitatively evaluated. Aesthetic impacts from the proposed project are determined using the standards of significance discussed in Section 4.2.3.1, Standards of Significance.

The analysis of potential impacts related to aesthetics and visual resources is limited to public views, which are defined as exterior locations accessible by the public. Accordingly, this analysis considers public views from within Hill Campus West, and nearby areas where public views to the project site(s) are available. Significance determinations account for the overall visibility of proposed changes and alterations from public viewing areas and severity of change within the context of existing conditions, as well as the physical characteristics (i.e., scale, mass, color) of project components. Existing condition photographs presented in Section 4.2.1, Environmental Setting, inform the environmental baseline for aesthetics and project information including design plan sets, renderings, photo simulations, and a lighting analysis (Appendix D) for the project site, assist in the impact determinations.

4.2.3.2 IMPACT ANALYSIS

AREAS OF NO IMPACT

Scenic Resources (Standard of Significance B)

The proposed project would not damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway (Significance Standard B). There are no eligible or officially designated state scenic highways in the immediate project area. The closest designated state scenic highway, State Route 13 from State Route 24 to Interstate 580 (milepost 4.2 to milepost 9.6), is approximately 1.9 miles from the Cal Softball Field. No elements of the proposed project (i.e., field lightings, fencing, buildings, etc.) would be visible from State Route 13 due to intervening terrain. State Route 13 is partially located within a densely canopied (and developed) valley featuring rising terrain to north, east, and west. This terrain and vegetation, and similar ridge and hill terrain to the north of the junction of State Route 13 and State Route 24 towards the Hill Campus West area effectively limits the potential for particularly long views including views to the project site. State Route 24 east of the Caldecott Tunnel is also a designated state scenic highway; however, the route is situated east of the Berkeley Hills that block UC Berkeley, the project site and surrounding areas from view of motorists on State Route 24 east of the tunnel. Because the project site is not visible from designated scenic segments of State Route 13 or State Route 24, the proposed project would have *no impact* on scenic resources within a state scenic highway and this standard is not addressed further.

PROJECT AND CUMULATIVE IMPACTS

Impact AES-1: Scenic Vistas (Significance Standard A). The proposed project would not result in a substantial adverse effect on a scenic vista. *(Less than Significant)*

Construction

As previously discussed in Section 4.2.1.2, Scenic Views and Vistas, scenic vistas near the project site primarily consist of roads and trails on higher elevation terrain to the east and north and residentially developed hillsides located to the south/southeast. From these roads, trails and developed hillsides, features on the project site do not currently impede or degrade available long or broad views that are generally oriented to the west and extend to the San Francisco Bay and points beyond.

Demolition activities and construction of the proposed project are anticipated to last for approximately 13 months. Construction activities and phasing for the proposed project is discussed in detail in Chapter 3, Project Description. Construction activities would include tree removal and the total area to be disturbed and graded would be approximately 92,000 square feet. In general, project construction would entail visible alteration of the project site, increased activity (including truck traffic) and worker presence in the area. Additionally, temporary construction fencing partially covered with semi-transparent vinyl fabric may be installed around the project work area. While construction activities would gradually (and noticeably) change the existing aesthetics of the project site through proposed tree removal (see Chapter 3, Project Description [Figure 3-9]), demolition and grading, installation of new surfaces, and construction/installation of new structures and light towers (these activities would require the use of a crane[s]), construction activities and associated aesthetic effects would be temporary and would not dominate or block any views from potential scenic vistas (i.e., roads, trails, and developed hillsides on and encompassing higher elevation terrain to the north, east, or south/southeast) in the surrounding area. Further, all the 23 trees to be removed are located along Centennial Drive and adjacent to left field and center/right-center field and as previously indicated, views from Centennial Drive towards the Cal Softball Field or from elsewhere on the project site are not

considered to be scenic vistas or provide scenic vistas for purposes of this analysis. While some existing trees may be removed and understory vegetation thinned in accordance with campus wide CBPs and as part of the ongoing implementation of the Hill Campus Wildland Vegetative Fuel Management Plan (WVFMP), the density and scale of hillside trees would continue to partially screen views onto the project site from local scenic vistas and/or most elevated public vantage points. The cumulative impacts of select projects including ongoing implementation of the WVFMP are also considered below in Impact AES-4. Furthermore, due to the temporary nature of construction and the temporary presence of construction vehicles and equipment on the project site, construction vehicles and equipment would not result in substantial short- or long-term obstruction or interruption of views from a scenic vista. Therefore, construction of the proposed project would not result in a substantial adverse effect on a scenic vista and impacts would be *less than significant.*

Operation

As noted in Chapter 3, Project Description, the proposed project includes extended outfield fences, a slightly higher outfield fence, resurfacing of the infield, and installation of synthetic turf that would replace existing grass. Existing lighting (4, 50-foot permanent towers, plus 6, 53-foot portable lighting structures to allow for games after dark) would be replaced with 6, approximately 60- to 70-foot towers[5] with NCAA compliant optimized lighting designed to concentrate lighting on the playing surfaces. In addition, a 30,500-square-foot two-story structure housing the bullpen, the concourse, and the press box would be built on the southwest corner of the site adjacent to a new fan concourse wrapping around up to 1,511 permanent seats. A full inventory of proposed renovations is provided in Chapter 3, Project Description (Table 3-1) and the approximate use schedule is presented in Table 3-2. Lastly, a series of exhibits depicting existing landscape and view conditions and proposed project change as experienced from four representative vantage points is presented as Figures 4.2-6 through 4.2-9. The locations of the vantage points are depicted on Figure 4.2-5.

In addition to new light towers and a two-story building, proposed renovations would entail the operation of softball field features/components of a similar scale to existing features. As such, most project elements would not have potential to create new (and substantial) view obstructions or interruptions from scenic vistas and elevated vantage points in the areas near the project site. The two-story building (35 feet high at the top of the press box) would be constructed on the southwest corner of the project site and set back 100 feet from the curb of Centennial Drive to accommodate new landscaping. As there are no current scenic vistas from the project site or from Centennial Drive near the site, and because the new building would be constructed against a backdrop of mature trees (and hillsides) to the west and south, the new building would not obstruct or interrupt an existing scenic vista (see Figure 4.2-9). As viewed from elevated vantage points located outside of the immediate surrounding area, the scale of the new building (sited at a comparatively lower elevation) would not result in view blockage (see Figure 4.2-8).

Regarding light towers, the proposed increase in total number of onsite towers and increased tower height would be noticeable but as under current conditions, the light towers do not and would not result in the full or partial obstruction of views from an identified scenic vista. As viewed from elevated vantage points, lights and the generally thin form and line of towers would not block or substantially interrupt existing views from public roads or trails. While the light towers would be visible from some elevated vantage points, existing trees in the surrounding area would routinely block these features from view and/or view corridors above the features would be maintained.

[5] The towers would have lights at mounting heights of approximately 70 to 90 feet, as described in Impact AES-3.

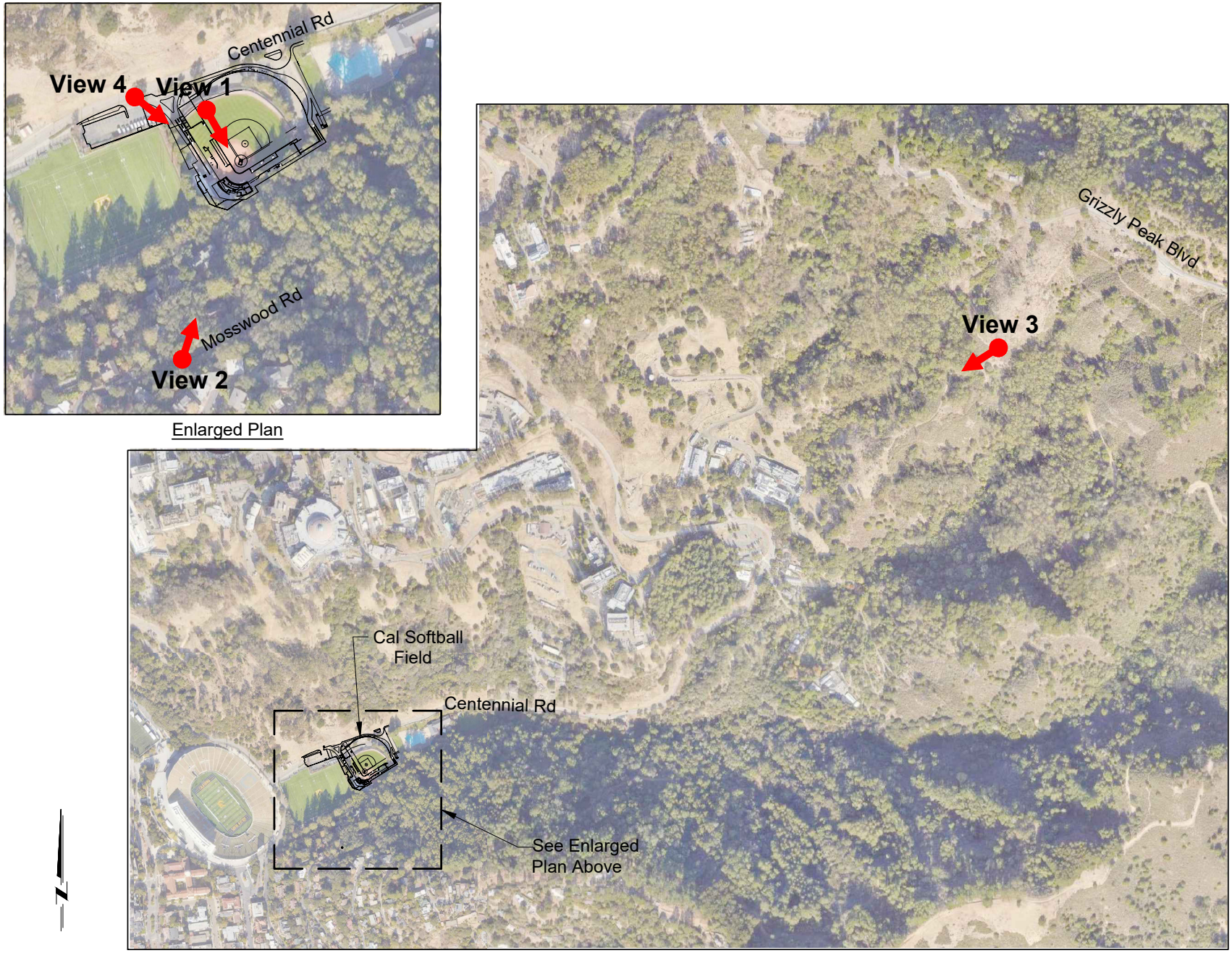

FIGURE 4.2-5

Vantage Point Locations

UC Berkeley Cal Softball Field Renovation Project

DUDEK

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Existing Conditions

Visual Simulation of Project

FIGURE 4.2-6

Vantage Point 1 – Onfield

UC Berkeley Cal Softball Field Renovation Project

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Existing Conditions (Partial View to Project Site Available)

Visual Simulation of Project

FIGURE 4.2-7

Vantage Point 2 – Mosswood Road

UC Berkeley Cal Softball Field Renovation Project

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Existing Conditions

Visual Simulation of Project

FIGURE 4.2-8

Vantage Point 3 – Offsite Trail

UC Berkeley Cal Softball Field Renovation Project

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Existing Conditions

Visual Simulation of Project

FIGURE 4.2-9

Vantage Point 4 – Centennial Drive

UC Berkeley Cal Softball Field Renovation Project

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Like existing conditions and illumination from existing softball field lighting, illumination from proposed field lighting may be visible over intervening trees. However, the potential effect on existing views would be reduced by the installation of shields and cut offs on light fixtures (in accordance with CBP AES-6 [see Impact AES-2 for details of this CBP]), the precise downward direction of installed field lights, and operation of a lighting control system that would facilitate quick and computer-controlled fixture adjustments to ensure proper field illumination (see Impact AES-3 for additional information about light and glare). In addition, and at the request of UC Berkeley, the initial lighting design was subsequently optimized through aiming adjustment, pole location adjustment, and lighting height optimization to reduce potential lighting impacts, as reflected in the lighting analysis for the proposed project (see Appendix D). For the reasons described above, implementation of the proposed project would not result in a substantial adverse effect to a scenic vista located on- or off-campus during operations of the proposed project. Impacts would therefore be *less than significant.*

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to scenic vistas, and therefore, no mitigation measures are required.

Impact AES-2: Visual Character (Significance Standard C). The proposed project is in a non-urbanized area and would not substantially degrade the existing visual character or quality of public views. *(Less than Significant)*

As previously stated, the project site is located within an urbanized area based on the definitions included in Public Resources Code Section 21071. However, for purposes of this analysis, it is evaluated as a non-urbanized area due to the lack of traditional urbanized qualities present in the surrounding area including within hillside residential neighborhoods to the south and southwest and throughout densely vegetated and undeveloped hill terrain to the north, east, south, and southeast. Therefore, the proposed project would result in adverse effects to visual character if it were to substantially degrade the existing visual character or quality of public views.

Construction

During the approximately 13-month construction period, onsite activities would include demolition of some existing facilities; grading and excavation; tree removal; utility trenching; site preparation; field renovation; building, concourse, circulation, and utility construction; and installation of landscaping and fencing. Typical construction vehicles and equipment including dozers, front end loaders, graders, scrapers, backhoes, forklift, dump truck, haul trucks, air compressors, and concrete saws would be used on site (specific timing of equipment/vehicle use would be dependent on phase of construction). Over the course of construction, the site would be fenced to deter unauthorized access and minimize potential for conflicts between construction activities and the public. Construction work may require temporary sidewalk or parking lane closures; however, temporary changes would be coordinated and would follow campus CBPs. On site construction activities would alter the existing visual character of the project site (and quality of existing views to the project site) as it would be transformed into an active construction site and existing site features including field lights, visitors stands, and buildings would be removed or demolished. Views to the active construction site would be primarily available to users of the adjacent Witter Rugby Field and Strawberry Canyon Recreation and Pool, Centennial Drive motorists, and from private hillside residential properties to the south and southwest of the project site. Despite the changed appearance of the project site during construction, individual phases would progress in a timely and efficient manner such that the character of any one phase would be transient. While visual change on the project site during construction would be apparent as viewed

from public vantage points in the surrounding area, the presence of construction equipment/vehicles would be familiar for most/all receptors and the transformation of the site from an existing softball field to a renovated softball field would not result in substantial long-term degradation of site visual character or quality. Thus, impacts to existing visual character and quality during construction would be *less than significant*.

Operation

The proposed project includes the renovation of the existing Cal Softball Field and related site improvements. A full description of the proposed project including proposed site features and amenities is presented in Chapter 3, Project Description. To aid in the assessment of long-term visual change associated with operation of proposed project, four representative public viewing locations in the surrounding area were selected for evaluation. The vantage point locations and the angle of view towards the project site from these locations are depicted in Figure 4.2-5. In addition to an onsite view from left field towards the proposed softball field amenities including the press box, stands, dugout, bullpen, and lights, selected views include Mosswood Road, Centennial Road, and the Upper Jordan Trail. Existing conditions photos towards the project site and photosimulations of the proposed project as anticipated to be experienced from the selected vantage point locations are presented on Figures 4.2-6 through 4.2-9.

The onfield photo simulation from vantage point 1 depicts the transformation of the existing Cal Softball Field to a modern collegiate softball field with renovated/modernized amenities and features (see Figure 4.2-6). While visual change resulting from implementation of the proposed project would be most apparent from onsite locations such as vantage point 1, the scale of proposed amenities including bleachers/seating and the press box would be compatible with the continued use of the site as a collegiate softball field and would not result in the substantial degradation of existing character or quality.

As experienced from vantage point 2 on Mosswood Road, the existing partial/mostly blocked view to the project site would remain relatively unchanged (see Figure 4.2-7). As shown in the figure, the existing partial view to the Witter Lot and Centennial Drive would be modified by the proposed project in that circulation/site access improvements (in particular, the construction of new parallel parking spaces at the new drop-off location off Centennial Drive) would be somewhat visible. Overall, the visual change at vantage point 2 would be minor and effects to existing visual character and quality would be negligible. In a similar manner, the renovation of the existing Cal Softball Field would be visible from the Upper Jordan Trail (vantage point 3); from this elevated and distant location, proposed tree removal and the concourse/press box structures would increase the visibility of the Cal Softball Field compared to the existing view. However, the overall change to the view would be minor and effects to existing character and quality would be negligible (see Figure 4.2-8). As demonstrated in the above analysis of anticipated view change from vantage points 1, 2, and 3, the renovated project site would be visible, but the proposed scale and character of the future facility would be compatible with the existing use of the site as a softball field and detectable change would not result in substantially degraded visual character or quality.

Lastly, vantage point 4 depicts the view towards the existing and future project site from adjacent Centennial Drive. The existing view from northbound Centennial Drive is directed towards blue-tarp covered chain-link fencing along the perimeter of the project site and the adjacent Witter Rugby Field. The Witter Lot is visible in the foreground and softball field amenities including the left field scoreboard and an existing field light along the right field line are visible. No other features of the softball field are overly apparent in the existing view. Beyond the parking lot and field, the landscape is defined by mature trees to the east and south. Once the proposed project is constructed and with proposed removal of some existing on-site trees, views from Centennial Drive to the proposed project would feature the outfield scoreboard, field fencing and left field netting, light towers, new drop-off, entry plaza landscaping and public entry stairs, and spectator stands (see Figure 4.2-9). As shown in the photosimulation in Figure 4.2-9, a portion of the existing Witter Lot would be replaced with a landscaped entry plaza that would

(compared to existing conditions) formalize a sense of arrival and entry to the Cal Softball Field. The increased visibility of field features including the increased scale of field light poles would be apparent from this specific vantage point; however, such field features are consistent with the existing use of the site as the university's softball field and the established recreational facility character of the landscape to the south of Centennial Drive from vantage point 4. As such, proposed visual change including increased scale/height of light towers would not substantially degrade existing visual character or quality as experienced from Centennial Drive/vantage point 4 and impacts would be *less than significant*.

In regard to policy consistency and efforts to minimize potential impacts to existing visual character and quality, UC Berkeley is the only agency with land use jurisdiction over programs and projects proposed on UC Berkeley property, including the Cal Softball Field. As indicated in Chapter 3, Project Description (see Section 3.6.3), the project design was reviewed by the UC Berkeley Design Review Committee in summer and fall 2018. The Design Review Committee was primarily concerned with the architectural expression of the new building's main structure on Centennial Drive, as well as its relationship to the surrounding forested hillside. The proposed design was refined to ensure that the structure was respectful of the site context, as well as presented a positive architectural expression compatible for institutional uses. The Design Review Committee recommended retaining the existing orientation for Cal Softball Field and maximizing vegetation around the field. The entryway design would encompass naturalistic planting of trees and ground plants.

Additionally, as described in Chapter 3, Project Description (Section 3.6.9), UC Berkeley would implement the aesthetics (AES) CBPs listed here as part of the proposed project (see Appendix B for all applicable CBPs):

- **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.
- **CBP AES-3:** To the extent feasible, UC Berkeley will enhance the visual quality of mapped high fire risk zones by focusing fuel management practices that promote landscape resilience, native habitats, and biodiversity.
- **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.[6]
- **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 are designed to reduce impacts to visual resources through the review process for new projects by ensuring adherence to UC Berkeley objectives for preserving important existing visual resources. The implementation of CBP AES-1 through CBP AES-3, CBP AES-6, and AES-7, and the other CBPs discussed throughout this Draft EIR and listed in Appendix B, would help reduce impacts to visual resources as part of the design review

[6] The exception in this CBP is intended to apply to light structures in historic properties or districts.

process. Therefore, the proposed project would not conflict with applicable policies related to aesthetics and visual character and overall impacts to visual character and quality would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to visual character and quality, and therefore, no mitigation measures are required.

Impact AES-3: Light and Glare (Significance Standard D). The proposed project would not create a new source of substantial light and glare which would adversely affect day or nighttime views in the area. *(Less than Significant)*

Demolition and construction of the proposed project would generally occur Monday–Friday 7:00 a.m. to 7:00 p.m., with limited weekend hours if needed. Because nighttime work is not anticipated to occur, use of lights during nighttime hours over the course of the 13-month construction period would not be required.

As specified in Chapter 3, Project Description and in the lighting analysis (Appendix D), the proposed project would update the existing field lighting system that consists of unshielded high-pressure sodium floodlights with a modern LED (light-emitting diode) system featuring improved light quality, increased mounting heights with reduced light trespass into adjacent areas, and additional shielding. The existing field lights (4, 50-foot permanent towers, plus 6, 53-foot portable lighting structures to allow for games after dark) would be replaced and upgraded by installing NCAA compliant optimized lighting designed to concentrate lighting on the playing surfaces. The new lighting would consist of 6, approximately 60- to 70-foot-high towers with lights at mounting heights of approximately 70 to 90 feet that would illuminate the infield, outfield, bullpen, and seating. The hours of field operations with the proposed project would remain unchanged with the proposed project (existing and proposed softball field hours of operations are Monday through Sunday 8:00 a.m. to 10:00 p.m.). The proposed seasonal schedule for softball field use is provided in Chapter 3, Project Description (Table 3-2).

Implementation of applicable CBPs (AES-6 and AES-7 described in Impact AES-2), as part of the proposed project, would minimize light spillage and glare potential. Specifically, to implement these CBPs, the lighting design was optimized through aiming adjustment, pole location adjustment and lighting height optimization to minimize vertical spill light and maximum intensity (Appendix D).

In addition, a technical lighting analysis was prepared by HLB Lighting Design to quantify existing light spill and maximum intensity (glare) levels and levels in the future with the proposed project (see Appendix D). (As described in Section 4.2.1.4, Light and Glare, light spill is the light falling onto a surface outside of the subject property and glare is the perceived brightness of a light source.) The location and height of light poles, quantity of fixtures, and light type (including wattage and lumens) was provided by UC Berkeley for use in the lighting analysis to ensure accuracy of project-specific information. The lighting analysis included two (2) site visits to document existing conditions and measure vertical spill light and maximum intensity (glare) levels at representative receptor sites (Locations "A, B, C, and D"), described in Section 4.2.1.4, Light and Glare, and shown in Figure 4.2-3. In addition, as described in Section 4.2.3.1, Standards of Significance, the lighting analysis established appropriate quantitative thresholds of significance, based on the CIE *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*, 2nd Edition (CIE 2017). This guide provides criteria or limits for a range of environmental lighting zones, shown in Table 4.2-3, that account for the ambient brightness of the environment experienced. The vertical light spill threshold of significance is 0.46 fc (5 lux), based on "Environmental Zone 2"

(E2) that is defined as areas of "Low District Brightness / Rural Residential" and approximates the use of the area surrounding the project site. This threshold is appropriate for the project site given that it is based on levels of low brightness, like exists in the vicinity of the project site. For glare (or maximum intensity), the appropriate source for the establishment of the threshold of significance is EN 12913:2007 "Light and lighting – Sports lighting" (BS EN 2007). Using "Environmental Zone 2", the threshold of significance for maximum intensity is 7,500 cd. The lighting analysis included calculations of project-related field lighting to determine future lighting levels at receptor sites and inform the potential for nighttime view impacts related to light and glare. The lighting analysis is included in Appendix D and the results of this analysis are provided below.

Existing lighting measurements were taken and future lighting level calculations were modeled at the four receptor sites. The high, dense tree canopy and significant opaque trunk density provides for significant obstruction of light onto the receptor sites. Screening from intervening trees was considered and accounted for in the lighting analysis by applying a reduction factor that indicates the amount of light anticipated at a receptor site that makes it through dense foliage.[7] Table 4.2-4 summarizes existing measured lighting levels and calculated future light spill with contributions for the proposed project lighting system. As shown in Table 4.2-4, calculated vertical spill light levels at all analyzed receptor locations would be below the 0.46 fc threshold of significance.

TABLE 4.2-4. COMPARISON OF EXISTING TO FUTURE PROJECT VERTICAL LIGHT SPILL (FOOTCANDLES)

Receptor Site	Ambient + Existing Softball	Ambient + Future Softball (No Obstruction)1	Ambient + Future Softball (With Obstruction)2	Threshold of Significance
A	0.53	0.35	0.35	0.46
B	<0.11	<0.43	<0.11	
C	<0.06	<0.06	<0.06	
D	0.52	0.39	0.07	

Source: HLB Lighting Design 2023 (Appendix D)
Notes:
1 "No Obstruction" refers to modeled light levels that do not account for the dense foliage between the receptor and the project site.
2 "With Obstruction" refers to modeled light levels that do account for the dense foliage between the receptor and the project site.

Regarding glare, a comparison of existing and future glare potential (maximum intensity) is included in Table 4.2-5. This analysis conservatively assumes no reduction in glare based on obstructions from mature trees and vegetation between the lights and receptors. The glare potential at receptor site A following implementation of the proposed project is anticipated to increase and the glare potential at receptor sites B and D is anticipated to decrease compared to existing conditions (see Appendix D). For receptor site C, as indicated previously, currently there is no direct view of existing field lighting due to existing foliage on the hillside to the south of the project site. While the taller light poles associated with the proposed project are anticipated to be visible from receptor site C, the optimized aiming of the lights is anticipated to result in no direct view of the light fixtures themselves (Appendix D). Since future maximum intensity values (cd) of the new lighting system as experienced from the analyzed receptor sites would be below the threshold of significance (7,500 cd; see Table 4.2-5, below), glare potential would be below the established threshold and impacts would be less than significant. Accordingly, light and glare impacts would be *less than significant.*

7 To determine the amount of light anticipated at each receptor site that makes it through the dense foliage to the south of the project site, a simulation of the existing softball lighting was created using industry-standard photometric software. The difference in spill light between the existing conditions measured in the field and the existing conditions modeled in the simulation, allowed for the blocking effect of the dense canopy to be quantified. The reduction factors calculated at each site are presented in Appendix D (Table 3) and are used to calculate the "with obstruction" results in Appendix D and in Table 4.2-4.

TABLE 4.2-5. COMPARISON OF EXISTING TO FUTURE PROJECT MAXIMUM INTENSITY (CANDELA)[1]

Receptor Site	Ambient + Existing Softball	Ambient + Future Softball	Threshold of Significance
A	200	4,594	7,500
B	2,682	923	
C	No direct view[2]	5,104[3]	
D	8,053	198	

Source: HLB Lighting Design 2023 (Appendix D)

Notes:

1 Maximum intensity is used to capture the apparent brightness of a light source as viewed from a distance. Maximum intensity, measured in units of candela, is used to evaluate the glare potential of a lighting installation. Maximum intensity is measured using a two-part method, combining luminance measurements taken with a meter with high-dynamic range photography analysis. Maximum intensity in units of candela is used throughout the lighting analysis interchangeably with luminance in units of candela per square meter per industry standards as the viewing distances are more than 5x the largest dimension of the lights.

2 Existing foliage on the hillside to the south of the project site provides for significant obstruction of existing field lighting.

3 Receptor site C currently has no direct view of existing lights due to relative height of receptor site to the lights combined with the dense foliage. The taller poles of the proposed project are anticipated to be visible, with a maximum glare potential of 5,104 candela excluding any potential [3] impact of obstructions from mature trees.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to light and glare, and therefore, no mitigation measures are required.

Impact AES-4 Cumulative Impacts Related to Aesthetics (Significance Standard E). The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact related to aesthetics. ***(Less than Significant)***

This section provides an evaluation of cumulative aesthetic impacts associated with the proposed project and past, present, and reasonably foreseeable future projects within the Hill Campus West and beyond, as identified in Table 4.1-1, Cumulative Projects, in Section 4.1, Introduction to Analyses, and as relevant to this topic. The geographic area associated with cumulative aesthetics analysis in the vicinity of the proposed project would be limited to the viewsheds of or from the project site. Therefore, the geographic scope of cumulative effects associated with the proposed project includes the immediate surrounding area as well as residentially developed hillsides to the south, due to the height of light poles and varying range of visibility to the project site from this area. Cumulative projects in this area include development of the Centennial Drive Bridge Replacement Project (under construction), select projects at the Lawrence Berkeley National Laboratory, and the ongoing implementation of the UC Berkeley Hill Campus WVFMP that overlap with the viewshed of the project.

Project impacts to scenic vistas and to visual character and quality of public views (Impacts AES-1 and AES-2, respectively) were determined to be less than significant with implementation of CBPs as part of the proposed project. Regarding lighting and glare (Impact AES-3), effects to nighttime views would generally be localized and with the installation of fixtures with glare shields, precision-aligned light fixtures controlled by a lighting- controlled system, and implementation of CBPs entailing the design of project lighting that minimizes light spillage and light pollution, the impacts related to light and glare would be less than significant, based on the lighting analysis conducted for the proposed project (see Appendix D). In addition, new sources of lighting associated with the proposed project would be installed on an existing developed site with operable field lights located near existing recreational facilities (Witter Rugby Field and Memorial Stadium) with operable field lights. It should also be noted

that the contributions of existing lighting systems at Witter Rugby Field were considered in the lighting analysis (see Appendix D) prepared for the proposed project. Table 4.2-6 presents existing and proposed project vertical light spill with the Witter Rugby Field.

TABLE 4.2-6. COMPARISON OF EXISTING TO FUTURE PROJECT VERTICAL LIGHT SPILL WITH RUGBY (FOOTCANDLES)

Receptor Site	Ambient + Existing Rugby + Existing Softball	Ambient + Existing Rugby + Future Softball (With Obstruction)1	Threshold of Significance
A	0.56	0.38	0.46
B	0.11	<0.11	
C	<0.06	<0.06	
D	0.56	0.11	

Source: HLB Lighting Design 2023 (Appendix D)
Notes:
1 "With Obstruction" refers to modeled light levels that do account for the dense foliage between the receptor and the project site.

Table 4.2-6 shows that the combined light levels from the existing rugby field and the proposed project would be below the 0.46 fc threshold of significance for vertical spill light.[8] Memorial Stadium lighting was not included in the assessment of vertical spill light, as events scheduled at Memorial Stadium do not overlap with games scheduled at the Cal Softball Field. Additionally, because the Centennial Drive Bridge Replacement Project (under construction) and select projects at the Lawrence Berkeley National Laboratory would not include similar lighting sources as the proposed project (i.e., they would not include LED field lights), they would not significantly contribute to a cumulative light and glare impact.

The WVFMP directs the treatment of vegetation that could become fire fuel within the UC Berkeley Hill Campus. Vegetation treatments described in the WVFMP are aimed at reducing the volume and arrangement of fuel available for a wildfire. The WVFMP includes four vegetation treatment types within the Hill Campus using various treatment methods, including: 1) evacuation support treatments, 2) temporary refuge areas, 3) fuel breaks, and 4) fire hazard reduction. On average, UC Berkeley would implement vegetation treatment activities on 200 acres per year within the WVFMP Plan Area. Chapter 3, Project Description, and the wildfire protection plan for the proposed project (Appendix C), acknowledge certain vegetation treatments that have or would be implemented under the WVFMP to the south or north of the project site. The WVFMP EIR identifies a significant unavoidable impact on scenic vistas and visual character even with identified mitigation measures due to tree removal, which would create a contrast between treatment areas and surrounding vegetation from public views (UC Berkeley 2020 and 2021e). Given that the proposed project would not conduct vegetation removal outside of the project site in the WVFMP Plan Area, it would not contribute to the significant unavoidable impact of the WVFMP. Additionally, proposed project lighting would not exceed the threshold of significance for vertical light spill even when the modeled light levels do not account for dense foliage (see Table 4.2-4 and Appendix D) and therefore the ongoing implementation of the WVFMP near the project site would not increase light levels at the four receptor sites surrounding the project site beyond those identified in the lighting analysis for the proposed project.

Therefore, while the WVFMP would have a significant unavoidable impact on scenic vistas and visual character due to tree removal, the proposed project would not result in a considerable contribution to this impact and the cumulative impact to aesthetics would be *less than significant.*

8 The lighting analysis for the proposed project (Appendix D) did not conduct additional scenarios incorporating Witter Rugby Field lighting in the proposed project glare analysis, as Maximum Intensity, measured in units of candela, is not additive. Maximum Intensity is a value associated with views of specific light sources and a cumulative analysis is not appliable. Therefore, the cumulative analysis does not present results of a glare analysis that includes Witter Rugby Field lighting.

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4.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources setting of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project and cumulative impacts, and identifies mitigation measures for any significant or potentially significant impacts related to implementation of the of the UC Berkeley Cal Softball Field Renovation Project (project or proposed project). The analysis is based on records searches and reconnaissance-level field surveys, as further described in Section 4.3.1, Environmental Setting. The lighting analysis prepared for the proposed project is also referenced (see Appendix D).

4.3.1 ENVIRONMENTAL SETTING

Information in this section was obtained through biological resource records searches, review of other relevant biological resource documentation, reconnaissance-level field surveys, and review of pertinent literature. Methodological details and the resulting information are presented below. For the purposes of this analysis, *project site* refers to the area that would be physically affected by construction activities associated with the proposed project (including temporary disturbance and staging areas) and the location of permanent structures. The *biological study area* (BSA or study area) includes the project site plus a 500-foot buffer in which indirect effects on sensitive biological resources could occur, including disturbance from noise, vibration, and lighting. Both the project site and BSA are depicted in Figure 4.3-1.

4.3.1.1 METHODOLOGY

LITERATURE REVIEW

Special-status plant and wildlife species present or potentially present on the project site were identified through a records search of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2022a), the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online planning tool (USFWS 2022a), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2022). Searches of the above-referenced databases were completed for the Oakland East and eight surrounding U.S. Geological Survey 7.5-minute quadrangles: Oakland West, Richmond, Briones Valley, Walnut Creek, Las Trampas Ridge, Hayward, San Leandro, and Hunters Point. Biologists also reviewed current and historical aerial photography to identify any potentially jurisdictional aquatic resources based on aerial and topographic signatures.

The literature review also included the Biological Review for the UC Berkeley Levine-Fricke Stadium Memorandum (Dudek 2018), Specimen Tree Assessment for Levine Fricke Softball Field[1] (PGADesign 2019), the Technical Memorandum - Information and Analysis in Response to Public Comments Received on the Levine-Fricke Softball Field Improvements Addendum – Biological Resources (Dudek 2020), the Long Range Development Plan (LRDP) and Housing Projects #1 and #2 Environmental Impact Report (EIR) (LRDP EIR) (UC Berkeley 2021b, 2021c), and the UC Berkeley Hill Campus Wildland Vegetative Fuel Management Plan EIR (WVFMP) (UC Berkeley 2020a, 2021e).

[1] Now called Cal Softball Field.

FIELD RECONNAISSANCE

Dudek biologist Emily Scricca performed a reconnaissance-level field survey of the project site on September 15, 2022, from 9:00 a.m. to 10:30 a.m. Weather during the field survey was mostly cloudy, with an ambient temperature of approximately 58°F–60°F. The field survey included mapping and documenting vegetation communities and land cover types present on the project site, a preliminary evaluation of potentially jurisdictional aquatic resources, and assessing the potential for special-status plant and wildlife species to occur within the project site and adjacent areas.

The survey was conducted on foot to visually cover the entire project site, including a 500-foot buffer of areas adjacent to the site where access allowed. Field notes and an aerial photograph with an overlay of the project boundary were used to map vegetation communities, potential aquatic resources, and record any special-status species or sensitive biological resources while in the field.

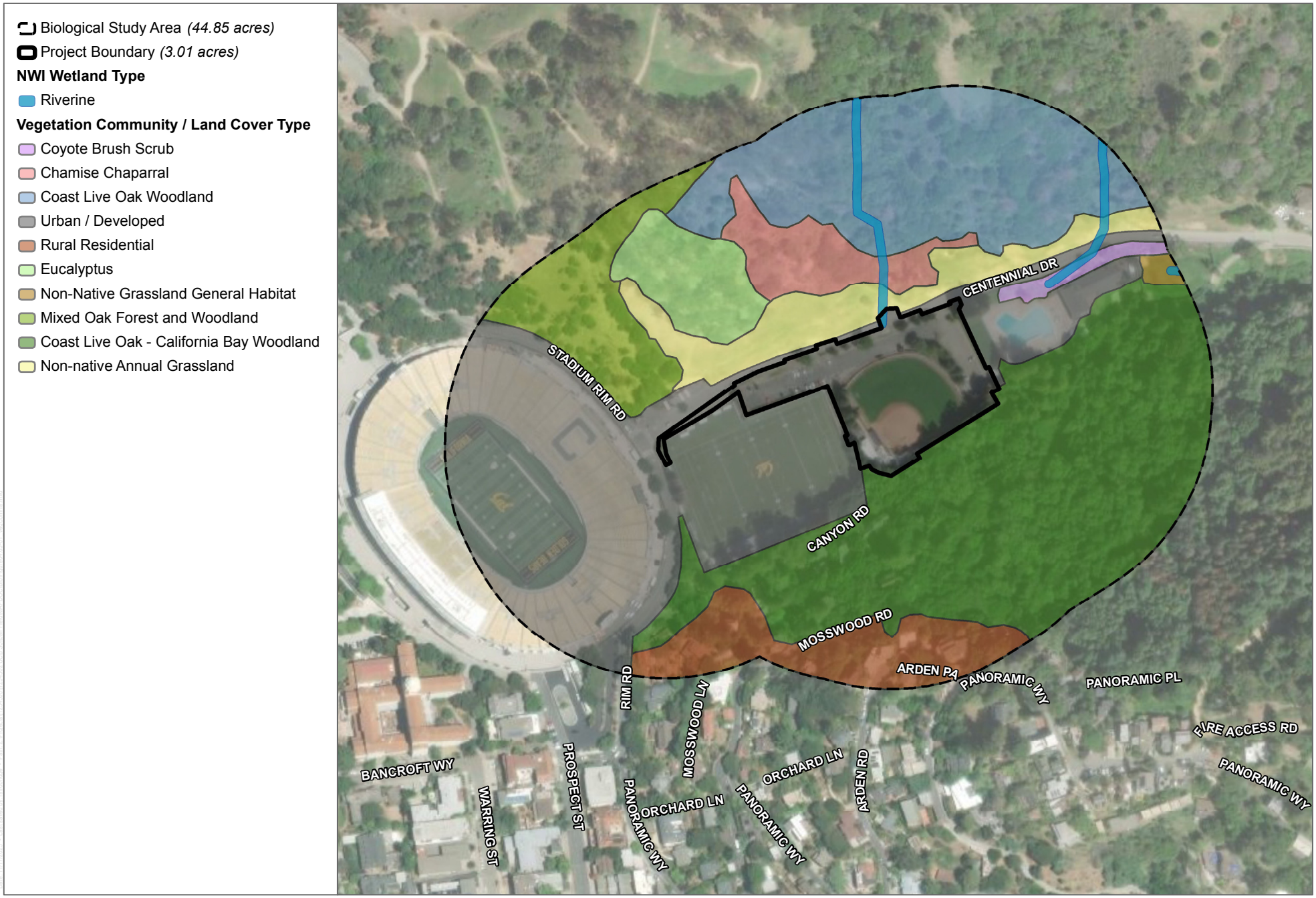
All plant species encountered during the field survey were identified to the lowest taxonomic group possible to determine rarity, and any wildlife species detected during the field survey by sight, calls, tracks, scat, or other signs were recorded directly into a field notebook. Burrows identified within the project site were investigated for sign of special-status wildlife species use or occupation. Nomenclature for all plant species observed on the project site follows the Jepson eFlora (Jepson Flora Project 2022). Plant species observed during the September 2022 field survey are listed in Appendix E-1, Plant Species Observed in the Biological Study Area.

4.3.1.2 SITE DESCRIPTION

The area surrounding the project site consists of dense mixed oak woodland adjacent to the project site to the south, intersected with recreational trails, and to the west and east developed areas such as parking lots, other recreational fields and a perimeter of landscape vegetation. The project site is bounded to the north by a sidewalk, beyond which lies Centennial Drive. The project site is bounded to the west by trees and shrubs, beyond which lies the Witter Rugby Field. The project site is bounded to the east by the Strawberry Canyon Recreation and Pool, beyond which lies the UC Berkeley Haas Clubhouse facility. To the south, the project site is bounded by Canyon Road, which turns into a dirt path/fire trail adjacent to the project site. Privately owned residential parcels abut the southern edge of Canyon Road between the project site and Stadium Rim Way; the closest of these parcels is approximately 50 feet south of the southern corner of the existing softball field.

TOPOGRAPHY AND SOILS

Topography of the project site is relatively flat, with little to no topographic variation. Elevations on the project site range from roughly 488 at the southeast corner to 496 feet above mean sea level in the northeast corner. Surrounding the project site, the ground surface slopes up steeply immediately north of Centennial Drive, and grades slope up steeply beyond the south border of the site and the slope to the east and west are relatively flat. Alameda County experiences a Mediterranean climate with warm, dry summers and cool, wet, winters. The average annual maximum temperature in the general vicinity of the site is 71.8°F, and the average minimum temperature is approximately 42.7°F. Average annual precipitation in the general vicinity of the site is 23.41 inches, nearly all of which falls from November to March (WRCC 2022).



SOURCE: ESRI World Imagery 2018

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FIGURE 4.3-1

Vegetation Communities and Land Cover Types

UC Berkeley Cal Softball Field Renovation Project

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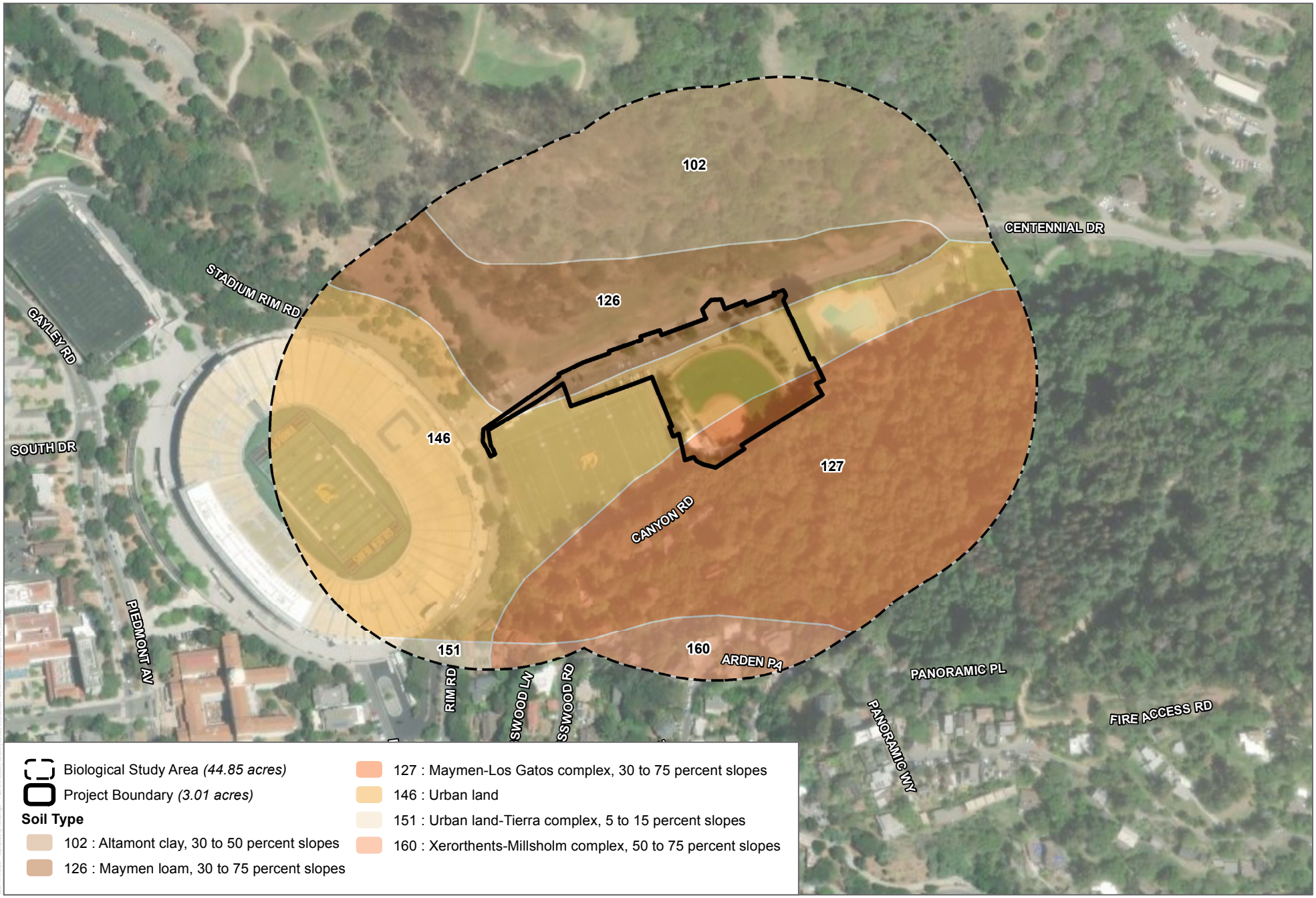

SOURCE: ESRI World Imagery 2018, USDA SSURGO

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0 150 300 Feet

FIGURE 4.3-2

Soils Map

UC Berkeley Cal Softball Field Renovation Project

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According to the U.S. Department of Agriculture Natural Resources Conservation Service (USDA 2022), the majority of the site is designated as urban land. There are two soil types occurring within the project site: Maymen loam, 30 to 75 percent slopes; Maymen-Los Gatos complex, 30 to 75 percent slopes (4.3-2). The U.S. Department of Agriculture Natural Resources Conservation Service does not consider these soil types to be hydric (USDA 2022), defined as saturated, flooded, or ponded for long enough periods during the growing season to develop anaerobic conditions such that under sufficiently wet conditions they support hydrophytic (water-long) vegetation.

HYDROLOGY

The project site is in the Cerrito Creek-Frontal San Francisco Bay Estuaries Hydrologic Unit (HUC 180500020904) within the San Pablo Bay Watershed (Figure 4.3-3). The National Wetlands Inventory (NWI) (USFWS 2022b) does not map any wetlands within the project site but does map two riverine features (i.e., wetlands contained within a channel) in two south-facing drainages north of Centennial Drive (Figure 4.3-1). No flowing water was observed in these features during the September 2022 field survey. No aquatic features were found within the project site during the September 2022 site survey.

4.3.1.3 VEGETATION AND LAND COVER

The entire project site is composed of urban/developed land cover. This land cover type refers to areas that support residential, commercial, and/or industrial development and that have been physically altered to the point where native vegetation is no longer present. Most of these areas are paved with impermeable surfaces that cannot support vegetation and have limited habitat value for wildlife, although trees and shrubs planted for ornamental landscaping provide habitat for urban-adapted wildlife. This includes several coast redwoods planted along Centennial Drive northwest of the Strawberry Canyon Recreation and Pool and around the perimeter of the Cal Softball Field; this species is native to coastal California and parts of the Oakland Hills but is not indigenous to the Strawberry Creek watershed. The urban/developed land cover type also includes areas that lack vegetation such as paved roads or unimproved areas that still retain a pervious surface.

Other areas in the BSA support natural or semi-natural vegetation communities. Semi-natural vegetation occurs where past or present human activities significantly influence composition or structure but do not eliminate or dominate ecological processes (CNPS 2023). The north-facing hillside south of the site supports a natural woodland co-dominated by coast live oak (*Quercus agrifolia*) and California bay (*Umbellularia californica*); California buckeye (*Aesculus californica*) also occurs in low numbers. The understory is dominated by non-native English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus discolor*) on the lower slopes and native species such as western swordfern (*Polystichum munitum*), California blackberry (*Rubus ursinus*), and redflower currant (*Ribes sanguineum*) on the upper slopes. Non-native invasive species such as blackwood acacia (*Acacia melanoxylon*) and French broom (*Genista monspessulana*) become more prevalent at the eastern end of the woodland adjacent to the pool and Canyon Road.

Rural residential is a semi-natural community composed of trees and shrubs planted as ornamental landscaping next to residential streets and houses. This community occurs at the southern edge of the BSA and is associated with homes along Mosswood Lane and Mosswood Road.

The south- and west-facing slopes north of Centennial Drive are much drier than those to the south and support a mosaic of semi-natural vegetation communities. Much of the area north of Centennial Drive was created by fill excavated during construction of Memorial Stadium or Centennial Drive and non-native species are almost as prevalent as native species. Coast live oak woodland, chamise chaparral (aka. scrub), non-native annual grassland, and eucalyptus grove occur to the north; the grassland is highly disturbed due to ongoing management as a

firebreak and is dominated by wild oat (*Avena fatua*). The west-facing slope above Stadium Rim Road at the northwest corner of the BSA (aka. "Tightwad Hill") supports mixed oak woodland co-dominated by coast live oak and pines (*Pinus* sp.) planted as ornamental landscaping with an annual grassland understory.

4.3.1.4 WILDLIFE RESOURCES

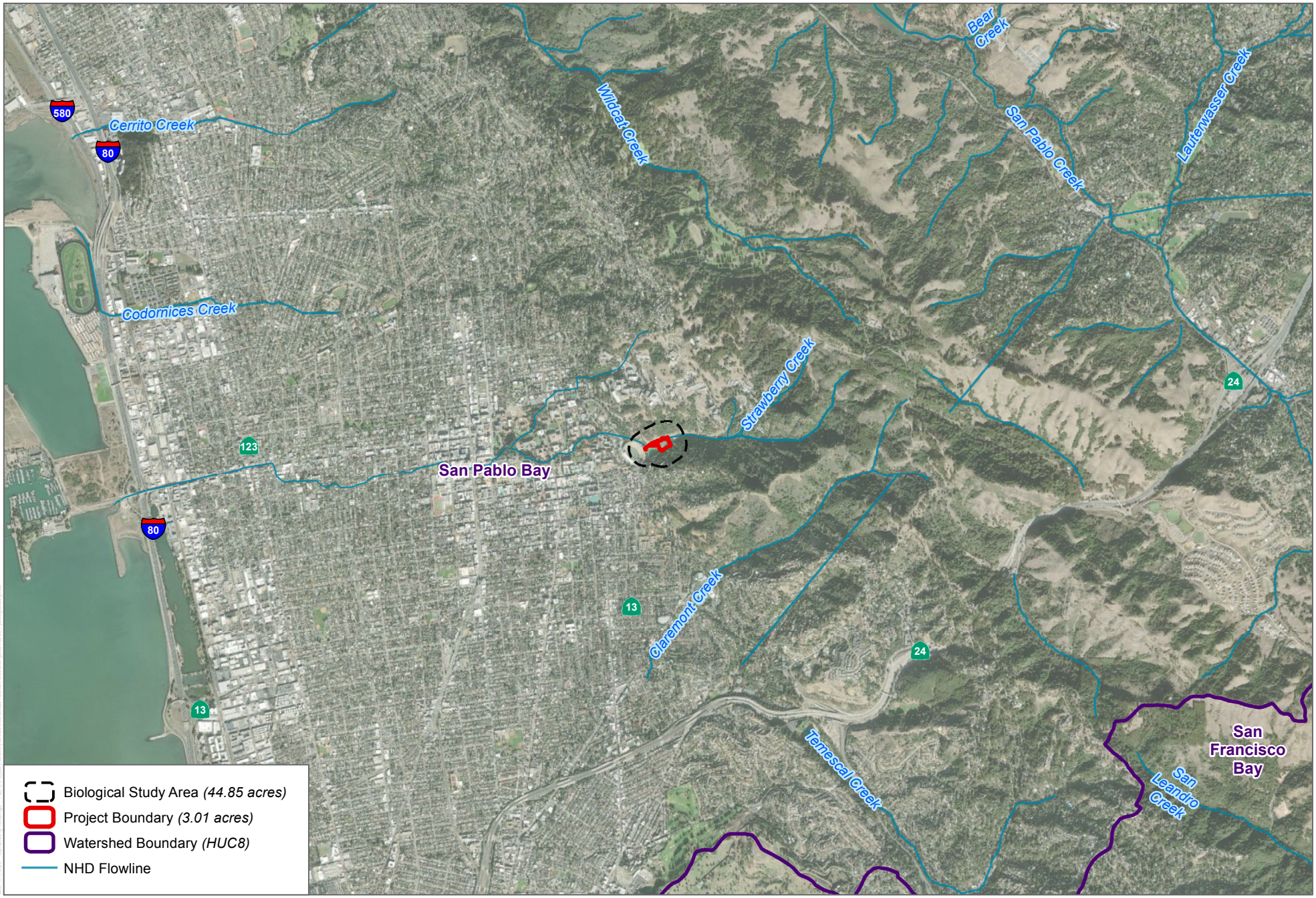
Dudek observed 15 wildlife species in the BSA during the September 2022 reconnaissance survey (Appendix E-2) and additional species adapted to urban, woodland, and scrub habitat are expected to occur. Most wildlife habitat value in the BSA is provided by the undeveloped woodland and scrub areas south and north of the project site. Bird species expected to occur in addition to those listed in Appendix E-2 include Pacific-slope flycatcher (*Empidonax difficilis*), Hutton's vireo (*Vireo huttoni*), oak titmouse (*Baeolophus inornatus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), Bewick's wren (*Thryomanes bewickii*), and American robin (*Turdus migratorius*), among others. No amphibians or reptiles were observed but common species likely to occur include arboreal salamander (*Aneides lugubris*), California slender salamander (*Batrachoseps attenuatus*), Sierran treefrog (*Pseudacris sierra*), southern alligator lizard (*Elgaria multicarinata*), California striped racer (*Coluber lateralis lateralis*), California kingsnake (*Lampropeltis californiae*), gopher snake (*Pituophis catenifer*), and common garter snake (*Thamnophis sirtalis*). Botta's pocket gopher (*Thomomys bottae*) soil mounds were observed in the drainage slopes north of Centennial Drive; other small mammals likely to occur include deer mouse (*Peromyscus species*), California vole (*Microtus californicus*), California ground squirrel (*Otospermophilus beecheyi*), and introduced species such as house mouse (*Mus musculus*) and brown rat (*Rattus norvegicus*). Medium- to large-bodied mammals expected to occur include bobcat (*Lynx rufus*), coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), northern raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), black-tailed jack rabbit (*Lepus californicus*), and black-tailed deer (*Odocoileus hemionus*).

4.3.1.5 SENSITIVE BIOLOGICAL RESOURCES

SPECIAL-STATUS SPECIES

For the purposes of this analysis, special-status species are defined as follows:

- Plants or wildlife listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA)
- Plants or wildlife listed as threatened or endangered, or proposed for listing, under the California Endangered Species Act (CESA)
- Plants designated as rare under the California Native Plant Protection Act (NPPA) of 1977
- Plants with a California Rare Plant Rank (CRPR) of 1 or 2
- Wildlife designated by CDFW as California Species of Special Concern (SSC)
- Wildlife designated as Fully Protected species under Sections 3511, 4700, 5050, and or 5515 of the California Fish and Game Code
- Wildlife on CDFW's Special Animals List (CDFW 2023) that do not meet the above criteria, including CDFW Watch List species (taxa that were previously SSC but do not currently meet SSC criteria, and for which there is concern and a need for additional information to clarify status)
- Meet the definition for endangered, rare, or threatened under Section 15380 the CEQA Guidelines



SOURCE: ESRI World Imagery 2018, CalWater, SFEI CARI

DUDEK

0 2,000 4,000 Feet

FIGURE 4.3-3

Hydrologic Setting

UC Berkeley Cal Softball Field Renovation Project

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Based on the results of the record searches and field reconnaissance described in Section 4.3.3.1, Dudek evaluated 126 special-status species for their potential to occur in the project site and biological study area. The determination of a species' potential to occur was based on available habitat preference (e.g., soil types, elevation, vegetation communities) and life history literature; proximity of known occurrences; and habitat information gathered during field surveys. Details on special-status plants and special-status wildlife species evaluated are provided below.

Plants

Results of the CNDDB and California Native Plant Society searches revealed 63 special-status plant species as occurring or potentially occurring in the BSA (Appendix E-3). None of these species are expected to occur on the project site due to its developed condition and consequent lack of natural vegetation, and only one (western leatherwood [*Dirca occidentalis*]) has been recorded in the BSA (see below). The remaining species have low potential to occur or are not expected to occur and are not addressed further in this EIR. No special-status plants were identified on the project site or in the BSA during the September 2022 field survey.

Western leatherwood is CRPR 1B.2 species (i.e., rare, threatened, or endangered in California and elsewhere, moderately threatened in California) that occurs on brushy slopes and mesic locations, typically in mixed evergreen and foothill woodlands. The CNDDB contains two occurrences within 1 mile of the site, including Occurrence No. 19 "across from [the] Haas Clubhouse and pool" (Figure 4.3-4). Because the CNDDB maps species occurrences as circular polygons, this occurrence overlaps with the Cal Softball Field; however, the CNDDB description indicates that it is located on the north-facing hillside to the southeast. There are multiple reports attributed to this occurrence starting in 1906 and ranging to an unspecified date in the 1980s, when it was "reported by Raiche…as possibly planted" (CDFW 2022a). The status of this occurrence is unknown, but it is reasonable to assume that this species could still occur in the oak-bay woodland in the southern portion of the BSA. However, it was not observed on the project site or BSA during any of the surveys (list all the survey dates here), and is not expected to occur on the project site, which is entirely developed.

Wildlife

A total of 63 special-status wildlife species were identified as occurring or potentially occurring in the BSA vicinity (Appendix E-4). Forty-six (46) of these species were eliminated from further consideration because the BSA lacks suitable habitat (e.g., tidal salt marsh) or is outside their known geographic range. Eight (8) species have low potential to occur (see Appendix E-4). Signs of the remaining nine (9) species were observed during the September 2022 field survey or have moderate to high potential to occur and are briefly discussed below.

Special-Status Birds

Three special-status bird species—Cooper's hawk (*Accipiter cooperi*), white-tailed kite (*Elanus leucurus*), and olive-sided flycatcher (*Contopus cooperi*)—have moderate potential to nest in the BSA. Cooper's hawk is a CDFW Watch List species that nests in riparian and oak woodland as well as ornamental trees in some central California cities, including Berkeley (Pericoli et al. 2004). White-tailed kite is a California Fully Protected Species that nests in a variety of trees and forages in open habitats. Olive-sided flycatcher is a California SSC that nests in forests. All three species are more likely to nest in the woodlands south and north of the project site than on the project site itself due to the amount of existing human activity at the Cal Softball Field in the nesting season (February to August).

Special-Status Bats

Three special-status bat species—pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and hoary bat (*Lasiurus cinereus*)—have moderate potential to roost in the BSA. Pallid bat is a California SSC that could use mature trees with cavities and exfoliating bark in woodland areas south and north of the site as maternity roosts; there is also low potential for this species to roost in the overhead spaces of the existing bathrooms and storage sheds on the site. Both hoary and western red bat are solitary foliage-roosting species that could roost in trees during winter (December–January) or migration (February–May, September–November). The existing intensity of human activity on the project site limits the likelihood that roosts of any special-status bat species are present, and none have been reported in the vicinity. No signs of bat roosts (i.e., guano or staining) were observed during the September 2022 field survey.

Alameda Whipsnake

Alameda whipsnake (*Masticophis lateralis euryxanthus*) is a slender, fast-moving diurnal snake that is a subspecies of the more common and widely distributed California whipsnake. It is found exclusively in the Inner Coast Range of western and central Alameda and Contra Costa Counties and primarily occurs in coastal scrub and chaparral communities but also forages in grasslands and open woodlands. Typical habitat characteristics include open to partially open scrub/chaparral cover on east, southeast, and southwest-facing slopes with abundant rock outcrops, rodent burrows, and western fence lizard prey.

The USFWS formally designated critical habitat for Alameda whipsnake on October 2, 2006 (71 FR 58175). Primary constituent elements (PCEs) of designated Alameda whipsnake critical habitat essential to the conservation of the subspecies include (1) scrub/shrub communities with a mosaic of open and closed canopy; (2) woodland or annual grassland communities contiguous to lands containing PCE 1; and (3) lands containing rock outcrops, talus, and small mammal burrows within or adjacent to PCE 1 and/or PCE 2.

Alameda whipsnake has high potential to occur in the BSA north of Centennial Drive but is unlikely to occur on the project site. The grassland, scrub, and woodland north of Centennial Drive is contiguous with scrub habitat approximately 0.2 mile to the east (see Figure 4.3-4) where one young-of-the-year female was captured in October 2008 (CDFW 2022a; Occ. No. 100). Absent a focused trapping study to determine species presence or absence, this area of the BSA is assumed to be occupied by Alameda whipsnakes for the purpose of this analysis. Despite its proximity to occupied habitat, the project site itself is entirely developed and subject to a high degree of human activity and therefore has no habitat value for Alameda whipsnake. Any whipsnakes that use the hillside north of Centennial Drive would not be expected to move onto the project site due to the lack of habitat.

The southeastern edge of the BSA also overlaps with Unit 6 (Caldecott Tunnel) of USFWS-designated critical habitat, which also extends over a large part of the LRDP Hill Campus East planning area. There is low potential for Alameda whipsnake to occur in the woodland south of the project site. It is contiguous with scrub habitat on south-facing slopes in Strawberry Canyon 0.3 and 0.5 mile to the east and therefore supports PCE 2 of critical habitat, but otherwise provides little habitat value for the species. There is also no habitat to the west or east as those areas are also used for recreational facilities.

SOURCE: ESRI World Imagery 2018, CDFW 2022

DUDEK

0 300 600 Feet

FIGURE 4.3-4

CNDDB and Special-status Species Occurrences

UC Berkeley Cal Softball Field Renovation Project

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San Francisco Dusky-footed Woodrat

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is a subspecies of the more widely distributed dusky footed woodrat and is designated by CDFW as a California SSC. It is a year-round resident in the San Francisco Bay area, preferring forests and woodlands with a moderate canopy and dense understory, and feeds primarily on nuts, fruits, fungi, foliage, and flowers. It builds large terrestrial stick houses that range from 2 to 5 feet in height and can be up to 8 feet in basal diameter. The houses are typically placed on the ground or against a log or tree, but sometimes in the low- to mid-level canopy of a tree.

San Francisco dusky-footed woodrat is known to occur on the project site. Two stick houses were identified on the project site along but just outside of the southeastern border of the existing softball field during the September 2022 field survey (Figure 4.3-4 and Figure 4.3-5). Both are on the project site within the limits of construction as depicted on the site plans. The oak woodland to the north and south of the project site provides high-quality habitat for this species.

Puma (aka. Mountain Lion)

With the passage of Proposition 117 in 1990, puma (aka. mountain lion) (*Puma concolor*) became a "specially protected mammal" under the California Fish and Game Code, making mountain lion hunting illegal in California. Southern California and Central Coast populations, including the Central Coast North population in the Santa Cruz Mountains and East Bay Hills, were also designated as a state candidate for listing under CESA on April 12, 2020, based on a petition filed by the Center for Biological Diversity June 25, 2019. Mountain lions are widespread but uncommon throughout most of California except for the Central Valley and regions of the Mojave and Colorado Deserts that do not support mule deer, their preferred food source. It uses the brushy stages of a variety of habitat types with good cover. Mountain lions have been observed in Strawberry Canyon (McBride 2007) and may occasionally move through or forage within the BSA but would not use the project site for an extended period as it is highly disturbed and lacks cover.

SENSITIVE NATURAL COMMUNITIES

CDFW's Vegetation Classification and Mapping Program (VegCAMP) works to classify and map the vegetation of California and determine the rarity of vegetation types. Since the mid-1990s, CDFW and its partners (including CNPS) have been working on classifying California vegetation using updated standards that comply with the hierarchical National Vegetation Classification Standard (NVCS) and now use the terms "Natural Communities" and "vegetation types" interchangeably. Current classification of vegetation in California is codified in the Manual of California Vegetation (MCV) online edition (CNPS 2023) and focuses on mapping vegetation at the two lowest levels of the NVCS hierarchy: associations and alliances. Associations are the most granular level and are grouped into alliances. Vegetation alliances and/or associations with a state rarity ranking of S1 through S3 are considered highly imperiled and designated as sensitive natural communities by CDFW (2022b), and project impacts on high-quality occurrences of these communities are typically considered significant under CEQA. Some communities may not be considered sensitive at the alliance level but may contain associations that are.

The woodland community south of the project site is co-dominated by coast live oak and California bay and was therefore mapped as the *Quercus agrifolia – Umbellularia californica* association (MCV Code 71.060.48) of the coast live oak woodland and forest alliance (MCV Code 71.060.00). CDFW (2022b) ranks this association as S3 and therefore considers it a sensitive natural community. While the stand within the BSA supports native species, it is not a high-quality occurrence of this community due to regular human recreational use and the presence of

several invasive plant species from past and ongoing disturbance. No other sensitive communities (including riparian communities) were observed in the BSA.

JURISDICTIONAL AQUATIC RESOURCES

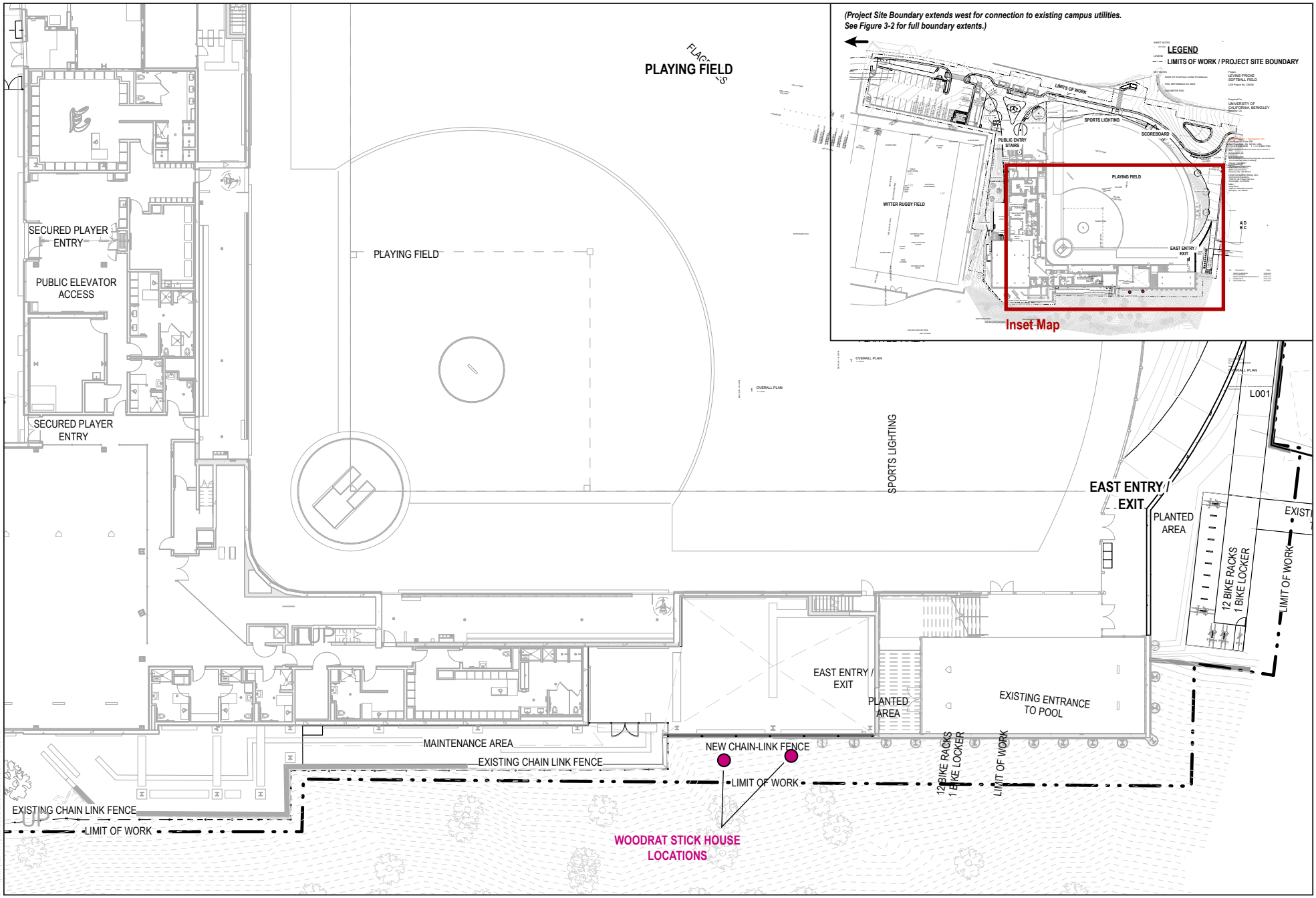
No wetlands or waters supporting jurisdictional aquatic resources were observed on the project site during the September 2022 field survey. Aerial imagery further indicates that no aquatic features are present within the project site. Strawberry Creek, a non-wetland water of the United States, is culverted under the project site. It is likely that the two riverine features mapped by the USFWS NWI north of Centennial Drive would be considered ephemeral or intermittent watercourses potentially subject to Regional Water Quality Control Board (RWQCB) and CDFW jurisdiction under the Porter-Cologne Water Quality Control Act and California Fish and Game Code but their status under the federal CWA is less certain. The project would not involve any activity in the area of the two riverine features.

WILDLIFE MOVEMENT CORRIDORS AND NATIVE WILDLIFE NURSERY SITES

The term corridor is used by ecologists and conservation biologists in a variety of ways. For the purposes of this EIR, a wildlife corridor is defined as "any space, usually linear in shape, that improves the ability of organisms to move among patches of their habitat" (Hilty et al. 2006). Corridors can be viewed over broad spatial scales, from those connecting continents (e.g., Isthmus of Panama) to structures crossing canals or roads. Most wildlife corridors analyzed within the context of land use planning, including those in this document, are moderate in scale and facilitate regional wildlife movement among habitat patches and through human-dominated landscapes. "Established wildlife movement corridors" analyzed under CEQA for this EIR are large landscape blocks or critical linkages identified in the Bay Area Open Space Council's *Critical Linkages: Bay Area and Beyond* report (Penrod et al. 2013).

The project site and BSA are not located in any established wildlife movement corridors. The "East Bay Hills-Diablo Range" critical linkage mapped by Penrod et al. (2013) is approximately 6.2 miles east in upper Strawberry Canyon. It is one of 14 landscape-level habitat linkages identified by Critical Linkages that, together with the Bay Area Open Space Council's Conservation Lands Network, provide a comprehensive plan for the preservation and maintenance of wildlife habitat connectivity throughout the nine-county Bay Area. The preliminary mapping of this linkage was based on the needs of ringtail (*Bassariscus astutus*), bobcat, and black-tailed deer, but it is also intended to serve several other species, such as American badger (*Taxidea taxus*), brush rabbit (*Sylvilagus bachmani*), California quail (*Callipepla californica*), loggerhead shrike (*Lanius ludovicianus*), California red-legged frog (*Rana draytonii*), white-tailed kite, wrentit, and Alameda whipsnake.

Nursery sites are locations where fish and wildlife congregate for hatching and/or raising young, such as bird nests, colonial waterbird (e.g., herons and egrets) rookeries, spawning areas for fish, fawning areas for deer, and bat maternity roosts. For the purposes of this EIR, nursery sites are considered for native wildlife that are not designated as special-status species, which are addressed separately. There are no documented nursery sites in the BSA or project site. Undeveloped natural or semi-natural vegetation communities in the BSA provide habitat for the native bird species identified above in Section 4.3.1.4 as well as others. Ornamental trees on the project site provide nesting habitat for urban-adapted birds and raptors such as mourning dove (*Zenaida macroura*), house finch, and red-shouldered hawk, and existing buildings and structures could support nesting black phoebes (*Sayornis nigricans*) or swallows. Trees with large cavities or exfoliating bark and existing structures on the site could support roosts of common bat species such as mouse-eared bats (*Myotis* sp.), big brown bat (*Eptesicus fuscus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*).



SOURCE: HOK Architects

FIGURE 4.3-5
San Francisco Dusky-Footed Woodrat Stick House Locations
UC Berkeley Cal Softball Field Renovation Project

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4.3.2 REGULATORY FRAMEWORK

4.3.2.1 FEDERAL

FEDERAL ENDANGERED SPECIES ACT

The federal ESA of 1973, as amended, (16 USC 1531 et seq.) serves as the enacting legislation to list, conserve, and protect threatened and endangered species, and the ecosystems on which they depend, from extinction. The ESA is administered by the USFWS for terrestrial and freshwater fish species and by the National Marine Fisheries Service (NMFS) for marine and anadromous species. Section 9(a)(1)(B) of the ESA prohibits the taking, possession, sale, or transport of any endangered fish or wildlife species. "Take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532 (19)). Harm is defined as "any act that kills or injures the species, including significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 CFR 17.3).

The ESA also enables the USFWS and NMFS to designate critical habitat, which is defined as specific geographic areas, whether occupied by listed species or not, that contain "physical or biological features essential to the conservation of the species" and that "may require special management considerations or protection" (50 CFR 424.12). Designated critical habitat units, published in the Federal Register by USFWS or NMFS, are often large and may contain areas that do not provide habitat for the species: only areas within the critical habitat units that support the species' PCEs are subject to ESA consultation and analysis of critical habitat effects.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act prohibits the intentional take of any migratory bird or any part, nest, or eggs of any such bird. Under the Migratory Bird Treaty Act, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). The Migratory Bird Treaty Act prohibits both intentional and unintentional take. Additionally, Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). Executive Order 13186 requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect migratory bird species.

4.3.2.2 STATE

CALIFORNIA ENDANGERED SPECIES ACT

The CESA (CFGC Section 2050 et seq.) prohibits the "take" of any plant, fish, or wildlife species listed as endangered or threatened, or designated as candidates for listing, under CESA. Take under CESA is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." It does not include "the taking of habitat alone or the impacts of the taking" (Environmental Council of Sacramento v. City of Sacramento, 142 Cal. App. 4th 2018 (2006).

Like the federal ESA, CESA allows exceptions to the prohibition for take that occurs during lawful activities. Sections 2081(b) and (c) of the California Fish and Game Code authorize take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and the applicants submits an approved plan that "fully mitigates" the impact of the take.

CALIFORNIA FISH AND GAME CODE

Section 1600

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1600 et seq. of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement authorizing such activity. CDFW's jurisdiction in altered or artificial waterways is based on the value of those waterways to fish and wildlife.

Fully Protected Species and Section 3503

The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species are listed in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code for birds, mammals, reptiles and amphibians, and fish, respectively. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research, relocation of bird species for the protection of livestock, or if they are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan.

Section 3503 of the Fish and Game Code prohibits the needless destruction of nests or eggs of native bird species. Section 3503.5 specifically addresses the nests and eggs of species in the orders of Falconiformes or Strigiformes (aka. "raptors" or "birds of prey"). CDFW considers an active nest as one that is under construction or in use and includes existing nests that are being modified. For example, if a hawk is adding to or maintaining an existing stick nest, it would be considered active and therefore protected under these provisions.

NATIVE PLANT PROTECTION ACT

The NPPA (California Fish and Game Code Section 1900 et seq.) allows the California Fish and Game Commission to designate plants as rare or endangered. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The intent of the Porter–Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the RWQCBs develop basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. All waters of the state are regulated under the Porter–Cologne Water Quality Control Act, including isolated waters that are no longer regulated by USACE. Recent changes in state procedures require increased analysis and mitigation. Developments with impact to jurisdictional waters of the state must demonstrate compliance with the goals of the act by developing stormwater pollution prevention plans, standard urban stormwater mitigation plans, and other measures to obtain a Clean Water Act, Section 401 certification and/or Waste Discharge Requirement.

4.3.2.3 UNIVERSITY OF CALIFORNIA, BERKELEY

LONG RANGE DEVELOPMENT PLAN

The University of California, Berkeley (UC Berkeley) LRDP is a forward-thinking document that establishes an overarching planning framework for campus development, comprising principles, goals, and strategies that address land use, landscape and open space, mobility, and infrastructure (UC Berkeley 2021a). The LRDP contains five overarching principles, each supported by associated goals. The principle and goals relevant to biological resources include:

- **Principle 4,** Enhance the Sustainability and Resilience of the Campus:
- **Goal 4.1:** Adapt campus landscapes to improve environmental health, enhance ecology and biodiversity, and create educational and research opportunities.
- **Goal 4.3:** Implement strategies that enhance campus resilience, to protect human health and safety, maintain essential infrastructure services and operational continuity, preserve investment in the physical campus, and cultivate adaptable natural systems.

The LRDP's Landscape and Open Space Framework provides for Enhanced Campus Sustainability and Resilience, specifically, that natural areas will continue to be preserved for ecological, research, and recreation purposes, with very limited development. Further, collaborative planning objectives of the LRDP include working with local and regional partners to improve the health and resilience of the natural systems that connect with and extend through university properties (UC Berkeley 2021a).

STRAWBERRY CREEK MANAGEMENT PLAN

The Strawberry Creek Restoration Program began in 1987 in response to UC Berkeley and community concerns over the deteriorated environmental quality of Strawberry Creek. UC Berkeley's Office of Environment, Health & Safety sponsored a comprehensive study of the creek with the results of the study, completed by Robert Charbonneau, published in December 1987 as the Strawberry Creek Management Plan (SCMP). The SCMP was originally a water quality management plan but ultimately expanded into a comprehensive study of the watershed with a focus on overall urban creek and riparian habitat preservation and restoration. The SCMP provides recommendations for implementation of management strategies for point and non-point source pollution control, channel stabilization, aquatic and riparian habitat restoration, and watershed management. Implementation of the SCMP from 1987 through the present has successfully led to substantially improved overall water quality conditions, enhanced ecological integrity as measured by biological criteria (macroinvertebrates and fish), increased environmental education for students and the public, and stabilization of the most critical erosion sites within the UC Berkeley campus. All projects are to be informed by the SCMP integrated policy and management tools to protect resources and beneficial use.

CAMPUS SPECIMEN TREE PROGRAM

The UC Berkeley Specimen Tree Program guides the evaluation and designation of specimen trees. Other plants (shrubs, groundcover, or grasses) that meet the criteria may also be considered as specimen flora. The Office of Physical & Environmental Planning Campus Landscape Architect implements the program and makes the determination of status using five criteria during the project development process. To be considered a specimen tree, the tree or plant should be in good health and not pose a hazard to pedestrian and automotive traffic, existing buildings, or utilities, and should have one or more of the following qualities:

- **Aesthetics:** The tree is an integral part of an architectural theme or plays an important role in framing or screening a building or other feature.

- **Historical:** The tree was planted as part of a memorial planting or is a particularly outstanding example of the original botanical garden plantings.
- **Educational:** The tree represents a special taxonomic or morphological feature, is unique to the campus or the San Francisco Bay area, is a particularly outstanding example of California flora, is part of an experimental planting with a special landscape or agricultural value, or is regularly used by campus instructors as an example of the species.
- **Strawberry Creek:** The tree provides shade and other benefits to aquatic habitat health, and removal of the tree would significantly increase erosion potential or affect the stability of a portion of the creek as a riparian corridor.
- **Natural Area:** The tree is located within either the Wickson, Grinnell, or Goodspeed Natural Areas.

Under this program, the retention of existing specimen trees, shrubs, and grass areas is a priority in the final design of proposed projects. Site preparation is conducted to minimize removal and/or damage of specimen trees or plant species to the full extent feasible. Sensitive construction practices are used to avoid possible damage to trees to be retained, including construction setbacks, installation of temporary construction fencing around individual trees to be preserved, and monitoring by a certified arborist if any required limb removal or disturbance would occur within the dripline of trees to be retained. Grading, vegetation removal, and replacement plans, where necessary, are coordinated with Capital Projects and/or Office of Physical & Environmental Planning. Specimen trees impacted must be either transplanted or replaced by new planting in kind or from species previously recorded on campus at a ratio of 3:1 in the closest available sizes. This may not always be feasible, in which case, trees measuring up to 4 inches DBH are to be replaced with 24-inch-box trees, trees measuring 4 to 10 inches DBH are to be replaced with 36-inch-box trees, and trees greater than 10 inches DBH are to be replaced with 48-inch-box trees. The Campus Landscape Architect may elect to replace 36- or 48-inch-box trees with 24-inch-box size in greater quantity to equal the cost of the larger trees. New plantings are selected as horticulturally appropriate at the largest possible nursery sizes. Landscaped areas are restored to the full feasible extent.

The Campus Landscape Architect was consulted to implement the Campus Specimen Tree Program as it relates to the project and identified one Specimen Tree within the construction zone of the project just outside of the outfield in direct line with home plate. This coast live oak would meet the Campus Specimen Tree Program criteria for educational and natural values due to its location and size.

UC BERKELEY CAMPUS DESIGN STANDARDS

UC Berkeley created the Campus Design Standards to guide design and construction professionals to complete lasting, high-quality additions to the UC Berkeley built environment. The Campus Design Standards, along with applicable codes, ensure that new construction and renovation projects at UC Berkeley integrate industry best practices and experience with existing UC Berkeley buildings, infrastructure, grounds, and maintenance issues. Relevant sections of the Design Standards are as follows:

- Standards for temporary erosion and sediment control practices list applicable codes, including the federal Clean Water Act Section 208, Resource Conservation Act, Water Code, and San Francisco Bay Basin (Region 2) Water Quality Control Plan policies. Standards for construction near creeks and wetlands and other sensitive areas list additional applicable codes.
- Development shall not be detrimental to known endangered plant or animal species or their critical habitats or migration routes. In general, wildlife habitat shall be preserved and enhanced to the extent possible.

Design standards related to creeks, streams, and wetlands are not included above as the project site does not contain these resources.

UC BERKELEY CONTINUING BEST PRACTICES

UC Berkeley applies continuing best practices (CBPs) relevant to biological resources as part of the project approval process. CBPs that are implemented as part of the proposed project are identified in Chapter 3, Project Description and provided in Appendix B, UC Berkeley Continuing Best Practices, of this Draft EIR. Applicable CBPs, which include both those implemented as part of the proposed project and those implemented as part of ongoing operations, are identified and assessed for their potential to reduce adverse physical impacts later in this section under Section 4.3.3, Impacts and Mitigation Measures. Due to the proposed project's location in the Hill Campus West, numerous biological resources CBPs are not applicable to the project (i.e., CBP BIO-3 through CBP BIO-8, CBP BIO-10, and CBP BIO-11).

4.3.2.4 LOCAL

As discussed in Chapter 3, Project Description, 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. As such, UC Berkeley will not consider local plans, policies and regulations in its evaluation of the environmental effects of the proposed 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. Local plans, policies, and regulations are not considered in the assessment of biological resource impacts in this EIR, as they are not used by UC Berkeley as thresholds or standards of significance and are not warranted to provide context for the assessment of biological resource impacts. Therefore, local plans, policies and regulations are not provided herein.

4.3.3 IMPACTS AND MITIGATION MEASURES

4.3.3.1 STANDARDS OF SIGNIFICANCE

The standards of significance used to evaluate the impacts of the proposed project related to biological resources are based on Appendix G of the CEQA Guidelines, as listed below. The proposed project would result in a significant impact on biological resources if it would:

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 plans, policies, or regulations, or by the California Department of Fish and Game 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 Game 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.

G. Result in cumulatively considerable impacts to biological resources.

4.3.3.2 ANALYTICAL METHODS

The biological resources analysis is based the existing conditions on the project site and the BSA established through records searches and reconnaissance-level field surveys, as described in detail in Section 4.3.1.1, Methodology. Potential biological resource impacts of proposed project construction and operation are the direct and indirect impacts that could result with project implementation.

DIRECT IMPACTS DEFINED

Direct impacts are caused by a project and occur at the same time and place. Direct impacts may be permanent or temporary. Direct permanent impacts typically refer to the permanent physical loss of a biological resource due to ground disturbance activities associated with implementation of a proposed project. Direct permanent impacts can include the following (1) permanent loss of vegetation communities and land covers that provide habitat for special-status plant and wildlife species; (2) injury or mortality to individuals of special-status plant and wildlife species; (3) permanent loss of sensitive vegetation communities or jurisdictional aquatic resources; and (4) permanent loss of areas that facilitate wildlife movement and habitat connectivity. Direct temporary impacts typically consist of ground disturbance associated with construction activities that would not result in a permanent structure and be restored to similar conditions after construction is complete. Temporary impacts may result from equipment staging, equipment turnaround areas, and construction access. Additionally, temporary direct impacts can occur from removal or trampling of vegetation outside designated work zones in the absence of avoidance and minimization measures.

INDIRECT IMPACTS DEFINED

Indirect impacts are reasonably foreseeable effects on biological resources caused by the project but that occur at a different time and place (e.g., resources adjacent to but outside of the site during construction, remaining resources either during construction or operation). Indirect impacts may be short-term construction-related impacts, such as those due to noise and dust, or long-term impacts, such as degradation of habitat or impacts from activities during operations and maintenance including operational noise and lighting.

Noise

Existing habitat to the south and north of the project site is currently exposed to noise from sporting events at the project site, adjacent Witter Rugby Field, Strawberry Canyon Recreation and Pool, and California Memorial Stadium, as well as traffic noise. Increased project noise would be associated with both short-term construction noise and long-term operational noise during active softball games. Construction noise would vary over the approximately 13-month construction period and would cease upon completion of project construction. Operational noise levels would not increase with the proposed project during typical weekday use but would increase somewhat during typical and maximum game events that would occur up to 25 times during the competitive season, as described in Section 4.5, Noise (see Tables 4.5-16 and 4.5-17). The increase in noise associated with the up to 25 games per year, an increase over the 15 to 20 games under existing conditions, would periodically increase ambient noise levels during the day and after dusk until 10:00 p.m. from game spectators and human presence, but such noise increases would not be substantial.

Noise has the potential to affect a wide range of species. For example, noise can cause some amphibians to emerge prematurely from burrows because vibration can mimic rainfall, which is a trigger for breeding activity (Dimmitt and Ruibal 1980). Construction noise and vibration may disturb bird and bat breeding activities, potentially resulting in

nest or roost abandonment or reduced productivity. Noise can raise the level of stress hormones, interfering with sleep and other activities. Chronic noise can also affect birds by masking calls, affecting behaviors such as mate attraction and territory defense. Mammals may generally avoid noisy areas due to increased stress and associated human activities.

Lighting

Existing habitat to the south and north of the project site is currently exposed to lighting from sporting events at the project site, adjacent Witter Rugby Field and California Memorial Stadium, cars on Centennial Drive, street lighting, and lights from the residential uses in the Panoramic Hills Neighborhood. The proposed project would install new exterior safety lighting and replace existing field lighting with competition-grade lights to allow for NCAA compliant competitive games after dark until 10:00 p.m., as further discussed below and in Section 4.2, Aesthetics. Artificial lighting at night has been documented to affect the behavior or physiology of many wildlife species (Longcore and Rich 2004, Gaston et al. 2013), which can translate to reduced survival and reproduction (Dominoni et al. 2020). Artificial lighting can impact wildlife by interfering with circadian rhythms, disrupting foraging activity and movement patterns, interfering with bird navigation, or singing, and altering the development of eggs, larvae, or juveniles. Current research suggests the effects of LEDs (light-emitting diode) on terrestrial wildlife arise from the intensity and spectrum of the light, not the LED itself (Longcore 2023). Wildlife vision (photopic and scotopic) and sensitivity to light spectrum varies by taxa among vertebrates so no one threshold can be set when calculating lighting impacts for a whole biological community (Longcore 2023). In addition, multiple units of measurement for light are encountered across the sciences, and many have little biological relevance (Hölker et al 2021). There are no known peer reviewed studies that provide specific qualitative thresholds for light impacts to species that may be present in the BSA. Therefore, this impact analysis provides a qualitative analysis of the indirect effects of night lighting on wildlife.

In general, most groups of wildlife are sensitive to shorter wavelengths than longer wavelengths and warmer color temperatures of 3,000 kelvins (K)[2] are recommended when possible (Longcore 2023, Alaasam et al. 2018). The proposed project is currently proposing LEDs of 5,700 K (Appendix D), which is similar to bright daylight/direct sun conditions than warm light temperatures. However, the proposed lights will be on for only a few hours beyond sunset on the occasional days per year when the proposed project is in use until 10:00 p.m.

In general, research supports the following steps in project design and planning to alleviate any potential adverse effects of lighting: 1) reduce intensity (or glare), 2) control spill, 3) reduce duration, and 4) control light spectrum to avoid shorter wavelengths. Additionally, the most important approach to reducing the effects of night lighting on wildlife is to reduce the amount of light reaching sensitive receptors, not to change its spectrum; as if light levels are low enough, no adverse impacts are found (Longcore 2023). This can be achieved by first reducing intensity, controlling direction and duration, and only then looking to spectrum to reduce remaining impacts (Longcore 2023).

As described in Appendix D, the proposed project would update the existing field lighting system that consists of unshielded high-pressure sodium floodlights with a modern LED (light-emitting diode) system featuring improved light quality, increased mounting heights with reduced light trespass into adjacent areas, and additional shielding designed to concentrate lighting on the playing surfaces not in the existing habitat to the south and north of the project site. Proposed project vertical light spill is estimated in Section 4.2, Aesthetics (Table 4.2-4) and Appendix D to be either the same as or reduced compared to existing conditions at receptor sites on the hillside south and the road north of the project site; the three receptor sites on the hillside south of the site are already blocked or partially blocked by existing vegetation and such conditions would not change with the proposed project. Lighting

[2] Kelvin is used in lighting to measure the color temperature of a light bulb. The higher the Kelvin rating (expressed in K), the whiter the light will be. The lower the K rating, the warmer in color the light will be.

glare (i.e., maximum intensity) may increase from baseline (Section 4.2, Aesthetics [Table 4.2-5] and Appendix D) at two of the four receptor sites but would not be expected at levels that would significantly affect wildlife behavior or adversely affect wildlife populations over time because wildlife that have remained within the urban-wildlife interface in the project site vicinity are habituated to the nighttime lighting baseline conditions from the existing field lighting on the project site and adjacent Witter Rugby Field and California Memorial Stadium. Further, the analysis of glare in Appendix D conservatively assumes no reduction in glare based on obstructions from mature trees and vegetation between the lights and receptors. While the light spectrum of proposed lights would be higher (5,700 K [Appendix D]) than recommended for most wildlife (3,000 K), the duration would be limited because lights would be turned off soon after the additional occasional game after dark when the proposed project is lit until 10:00 p.m. (conservatively assumed to be 25 games per year as compared to the existing 15 to 20 games per year), and intensity (glare) and vertical spill would not significantly affect wildlife behavior or adversely affect wildlife populations, as previously described. Additionally, the existing lighting at Memorial Stadium and Whitter Field are metal halide systems that have light spectrums of approximately 4,500K so any species in the area are already accustomed to light spectrums above 3,000 K. Therefore, there would be no significant adverse impacts to wildlife species in the vicinity of the project site as a result of the change in light spectrum with the proposed project and the qualitative analysis of potential impacts from night lighting (dusk to 10 p.m.) does not further discuss the light spectrum of the proposed project lights.

4.3.3.3 IMPACT ANALYSIS

AREAS OF NO IMPACT

Habitat Conservation Plans (Standard of Significance F)

The project site is not located within any area designated for an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan (UC Berkeley 2021b) (Significance Standard F). The proposed project would not conflict with such a plan and therefore would have *no impact*. This standard is not discussed further in this Draft EIR.

Local Policies or Ordinances Protecting Biological Resources (Standard of Significance E)

There are no local ordinances or policies of the City of Berkeley that would apply to projects on the UC Berkeley campus, as the City does not have jurisdiction over UC lands based on its constitutional autonomy. The proposed project would be constructed entirely on UC property. Therefore, the proposed project would not conflict with local policies protecting biological resources.

The proposed project would comply with the UC Berkeley Campus Specimen Tree Program and the Campus Design Standards, as relevant, which protect biological resources, including trees, as discussed in Section 4.3.2, Regulatory Framework. The Campus Specimen Tree Program guides the evaluation and designation of Specimen Trees and Specimen Flora, consistent with CBP BIO-9 listed here, which would be implemented as part of the proposed project, as described in Chapter 3, Project Description (see also Appendix B):

- **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.

The Campus Landscape Architect or the Consulting landscape architect makes the determination of status, using the following criteria: to be considered a specimen, the tree or plant should be in good health; should not pose a hazard to pedestrian and automotive traffic, existing buildings, or utilities; and should have one or more of the following qualities: aesthetic, historical, or educational value, or location in Strawberry Creek or a natural area. Determination of specimen status may extend to a group of trees where individually a tree may not merit such status, but as a group or association the collective import is greater than that of the individual plants alone.

Sensitive construction practices are used to avoid possible damage to trees to be retained, including construction setbacks, installation of temporary construction fencing around individual trees to be preserved, and monitoring by a certified arborist of any required limb removal or disturbance within the dripline of trees to be retained. Grading, vegetation removal, and replacement plants, where necessary, are coordinated with the Campus Landscape Architect. Specimen species that are impacted must either be transplanted or replaced by new plantings in kind or from species previously recorded on campus at a ratio of 3 to 1. New plantings are selected as horticulturally appropriate at the largest possible nursery sizes. Landscaped areas are restored to the full feasible extent.

One specimen tree, a coast live oak, would be removed from the perimeter of the existing field, as described in Chapter 3, Project Description. This specimen tree would be replaced by transplanting or would be replaced by new planting in kind on campus at a ratio of 3 to 1 in the closest available sizes, as required by the UC Berkeley Specimen Tree Program. The project would also establish protection for two large multi-trunk California bay trees immediately southwest of the project site during construction (although they are anticipated to be outside of the affected construction zone). These trees have combined trunk measurements of 62 inches and 59 inches in diameter at breast height (DBH). The forested slope that abuts the southern edge of the field includes an oak–bay woodland community that qualifies as a 'natural area' under the Campus Specimen Tree Program. The project footprint does not encroach into this woodland community, as described in Impact BIO-2. Therefore, the proposed project would not conflict with UC Berkeley's Specimen Tree Program and there would be *no impact*. This standard of significance is not discussed further in this Draft EIR.

PROJECT AND CUMULATIVE IMPACTS

Impact BIO-1 Candidate, Sensitive, or Special-Status Species (Significance Standard A). The proposed project would have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. *(Potentially Significant)*

As described in Section 4.3.1, Environmental Setting, the existing Cal Softball Field and associated facilities on the project site located in the Strawberry Creek Recreation Area are entirely developed with little or no remaining natural vegetation and limited wildlife habitat values. The undeveloped hillsides south and north of the site support natural and semi-natural vegetation that provides habitat for wildlife (including several special-status species), as discussed herein.

Special-Status Plants

Most identified special-status plant species have no or low potential to occur on or adjacent to the project site in remaining vegetated areas, as described in Section 4.3.1. However, there are two known occurrences of western leatherwood to the south of the project site in the oak-bay woodland. As indicated in Impact BIO-2, the proposed project would not result in disturbance or tree removal in the oak-bay woodland south of the project site and

therefore does not have the potential to impact western leatherwood. Therefore, the proposed project would not have a substantial adverse effect on special-status plants and would have *no impact*.

Special-Status Birds and Bats

Trees on and adjacent to the project site and existing structures on the site provide nesting habitat for native birds and roosting habitat for bats, including special-status species (Cooper's hawk, white-tailed kite, olive-sided flycatcher, pallid bat, western red bat, and hoary bat). There is moderate potential for white-tailed kite and Cooper's hawk to nest in trees that would be removed by the project, and for olive-sided flycatcher to nest in trees in the adjacent woodland. If not properly implemented, proposed tree removals could result in the destruction of active nests of the first two species, and noise from demolition and construction activities near active nests of all three species in adjacent woodland could cause adults to abandon eggs or recently hatched young if they perceive such disturbances as a threat, which can occur with construction activities in proximity to the nest, depending on the sensitivity of the species. Such activities could also impact pallid bat maternity roosts potentially occurring on or adjacent to the site, although the occurrence of such roosts is unlikely given the existing intensity of human activity on the site. However, as part of the proposed project, UC Berkeley would implement the biological resource CBPs listed here, in Chapter 3, Project Description and in Appendix B:

- **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 nonbreeding 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 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 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.

Implementation of these CBPs would serve to address the potential presence of nesting birds and roosting bats in advance of or during construction by removing trees outside of the nesting season, conducting pre-construction surveys, identifying appropriate setbacks if active nests and/or roosts are identified, and protecting the active nests and/or roosts until the young are independent of these sites. With the implementation of these CBPs during construction, the proposed project would not have a substantial adverse effect on special-status birds and bats. Additionally, CBP NOI-2 and MM NOI-1 (see Section 4.5, Noise) would limit construction hours and construction noise during the 13-month construction period and construction noise would cease upon completion of project construction. Therefore, proposed project construction would not have a substantial adverse effect, either directly or through habitat modifications, on special-status birds and bats and the construction impact would be *less than significant*.

Any special-status bird and bat species in the BSA are currently exposed to lighting from existing evening sporting events at the project site, adjacent Witter Rugby Field and California Memorial Stadium, cars on Centennial Drive, street lighting, and lights from the residential uses in the Panoramic Hills Neighborhood. For special-status bird and bat species, artificial night lighting before 10:00 p.m. on a given game night during project operations could occasionally increase daylight effects on wildlife from proposed project lights. Birds and bats are highly mobile and may temporarily benefit from prey aggregation or temporarily change their behaviors and avoid the proposed project (Rowse et al. 2016). The few hours on the additional occasional days per year when the proposed project is lit until 10:00 p.m. (conservatively assumed to be 25 games per year as compared to the existing 15 to 20 games per year) may have some effect on bird and bat behavior but would not be expected to reach a level of negative impact on their populations. As reported in Appendix D, Lighting Analysis, the proposed project would update the existing field lighting system that consists of unshielded high-pressure sodium floodlights with a modern LED system featuring improved light quality, increased mounting heights with reduced light trespass into adjacent areas, and additional shielding. Incorporation of CBP AES-6, as specified in Section 4.2, Aesthetics, would also ensure that lighting includes shields and cut-offs to minimize light spillage onto unintended surfaces. Proposed project vertical light spill is estimated in Section 4.2, Aesthetics (Table 4.2-4) and Appendix D to be either the same as or reduced compared to existing conditions at receptor sites on the hillside south and the road north of the project site; the three receptor sites on the hillside south of the site are already blocked or partially blocked by existing vegetation

and such conditions would not change with the proposed project. Lighting glare may increase from baseline (Section 4.2, Aesthetics [Table 4.2-5] and Appendix D) at two of the four receptor sites but would not be expected at levels that would significantly affect wildlife behavior and adversely affect wildlife populations over time because wildlife within the vicinity of the project site that have remained within the urban-wildlife interface are habituated to the existing setting and acclimated to the nighttime lighting baseline conditions from the existing field lighting on the project site and adjacent Witter Rugby Field and California Memorial Stadium. In addition, the open space north, south and east of the proposed project provides ample dark foraging and cover opportunities for those individuals that would prefer the darker environments. Therefore, long-term adverse effects of nighttime lighting on bird and bat productivity, sleep, stress, immune response, predatory/prey relationships, and similar compromising effects on populations are not anticipated from the proposed project.

Operational noise would not increase with the proposed project during typical weekday use but would increase somewhat during typical and maximum game events that would occur up to 25 times during the competitive season, as described in Section 4.5, Noise (see Tables 4.5-16 and 4.5-17). The increase in noise associated with the up to 25 games per year, an increase over the 15 to 20 games under existing conditions, would occasionally somewhat increase ambient noise levels during the day and after dusk until 10:00 p.m. from game spectators and human presence. Competitive softball games at the proposed project would occasionally increase noise levels from baseline conditions; however, wildlife inhabiting the area are habituated to the existing baseline noise levels associated with use of the existing softball field and other adjacent fields and proposed project operational noise would not be expected to substantially exceed existing noise levels, as documented in Section 4.5, Noise. Therefore, the impact of project operations to special-status birds and bats would be *less than significant*.

Alameda Whipsnake

Alameda whipsnake has been observed on the north side of Strawberry Canyon approximately 0.2-mile northeast of the project site (Figure 4.3-4) and could therefore occur on the hillside north of Centennial Drive, but it is not expected to occur on the project site due to the lack of habitat (i.e., no ground cover or food resources) and high level of human activity. The proposed project would not remove any vegetation that provides cover for Alameda whipsnakes potentially using the hillside north of the project site nor would it increase artificial night lighting to the hillside north of Centennial Drive per the lighting analysis prepared for the proposed project (see Appendix D). As described for special-status birds and bats, any Alameda whipsnakes currently inhabiting the surrounding undeveloped landscapes are habituated to the existing baseline light levels associated with the use of the existing softball field and other adjacent fields. As indicated in Section 4.2, Aesthetics (Tables 4.2-4 and 4.2-5) and Appendix D, vertical light spill and glare would be reduced at receptor site D located on the north side of the project site, as compared to existing conditions. As described for special-status birds and bats, any Alameda whipsnakes currently inhabiting the surrounding undeveloped landscapes are habituated to the existing baseline noise levels associated with the use of the existing softball field and other adjacent fields; and the proposed project operational noise would not be expected to substantially exceed existing noise levels. Therefore, the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on this species and the impact would be *less than significant*.

San Francisco Dusky-Footed Woodrat

Two San Francisco dusky-footed woodrat stick houses were observed within the limit of work in the southeastern portion of the project site (Figure 4.3-5). If occupied by adults and young at the time of construction, demolition and grading activities could result in direct mortality of individuals if activities are unable to avoid the houses. Construction and demolition activities could also result in the abandonment of dependent young in these stick houses if breeding adults perceive them as a threat, which can occur with construction activities in immediate proximity of stick houses. These construction impacts could reduce the reproductive potential of the local woodrat

population in the immediate vicinity of the project site. Therefore, proposed project construction could have a substantial adverse effect on San Francisco dusky-footed woodrats and the impact would be *potentially significant*.

As described for special-status birds and bats, proposed project operations would not substantially increase artificial night lighting before 10 p.m. or operational noise levels in the woodland habitat south of the project site and is therefore not expected to result in the long-term abandonment of this area by San Francisco dusky-footed woodrats. As described for special-status birds and bats, any San Francisco dusky-footed woodrats currently inhabiting project site and surrounding undeveloped landscapes are habituated to the existing baseline light levels associated with the use of the existing softball field and other adjacent fields. Existing foliage on the hillside to the south provides significant obstruction of existing field lighting and this condition would not change after the proposed project is completed; see Impact BIO-4 for additional discussion. In addition, proposed project lighting, human presence, and noise past dusk is limited to a few hours on a given day, and would occur occasionally during the year. As reported in Appendix D, Lighting Analysis, the proposed project would update the existing field lighting system that consists of unshielded high-pressure sodium floodlights with a modern LED system featuring improved light quality, increased mounting heights with reduced light trespass into adjacent areas, and additional shielding. The open space north, south and east of the proposed project provides ample dark foraging and cover opportunities for those individuals that would prefer the darker environments. Occasional avoidance of the project site or additional time spent in middens to avoid predator detection is not expected to significantly affect the species behavior or their populations over time. Incorporation of CBP AES-6 would also ensure that project lighting would include shields and cut-offs that would minimize light spillage onto unintended surfaces. As described for special-status birds and bats, any San Francisco dusky-footed woodrats currently inhabiting the surrounding undeveloped landscapes are habituated to the existing baseline noise levels associated with the use of the existing softball field and other adjacent fields; and the proposed project operational noise would not be expected to substantially exceed existing noise levels. Therefore, proposed project operations would not have a substantial adverse effect on San Francisco dusky-footed woodrats and the impact would be *less than significant*.

Puma (aka. Mountain Lion)

Puma has been observed in Strawberry Canyon and may occasionally forage for prey (e.g., mule deer) in the woodland south of the site and along the hillside ridge north of Centennial Drive. The project would not remove any vegetation that provides cover for mountain lions potentially using these areas nor would it substantially increase artificial night lighting before 10 p.m. on the hillsides per the lighting analysis prepared for the proposed project (see Appendix D). As described for special-status birds and bats, any Puma currently inhabiting the project site and surrounding undeveloped landscapes are habituated to the existing baseline light levels associated with the use of the existing softball field and other adjacent fields. Existing foliage on the hillside to the south provides significant obstruction of existing field lighting and this condition would not change after the project is completed. Like other terrestrial wildlife (see Impact BIO-4), mountain lions, if present, may temporarily alter their movement patterns to avoid increased noise generated by the proposed project but this impact would be temporary, and they would be expected to resume normal movement patterns soon after construction is completed. Additionally, the proposed project would not substantially increase operational noise levels in the woodland habitat south of the project site, and as described for special-status birds and bats above, any Puma currently inhabiting the project site and surrounding undeveloped landscapes are habituated to the existing baseline noise levels associated with the use of the existing softball field and other adjacent fields. Therefore, the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on puma and the impact would be *less than significant*.

Significance without Mitigation: Potentially significant (San Francisco dusky-footed woodrat only).

Mitigation Measures

MM BIO-1: Within 14 days prior to the onset of any vegetation removal at the southeastern corner of the project site, a qualified biologist shall determine if the San Francisco dusky-footed woodrat stick houses shown in Figure 4.3-5 are active using peer-accepted methods (e.g., mimicking woodrat "tail rattle" and listening for a response). If the biologist determines that the houses are unoccupied, no further action would be required. If the biologist determines that the houses are occupied or potentially occupied and that project activities could result in woodrat mortality, the following measures would be implemented:

- The biologist shall consult with the contractor to determine if the houses can be avoided. If so, the contractor, under direction of the biologist, shall install a 10-foot-radius exclusion zone around each house using pin flags, orange safety cones, wood lathe, or similar in which no activity would occur until the project is complete.
- If the house(s) cannot be avoided, the contractor, under direction of the biologist, shall dismantle the houses by hand or using small machinery and move the woody materials to similar habitat outside the project footprint. These dismantling activities shall only occur in the early morning during the non-breeding (October to February), however, so that any adults or non-dependent young would be able to escape into adjacent habitat during the dismantling activity.

Significance with Mitigation: Less than significant. Implementation of MM BIO-1 would avoid a substantial adverse impact on San Francisco dusky-footed woodrats by having a qualified biologist determine whether the stick houses are occupied, avoiding the stick houses by establishing a marked exclusion zone around each house, or dismantling the stick house under the direction of the biologist and moving the woody materials to similar habitat outside the project footprint during the non-breeding season. Therefore, with the implementation of MM BIO-1, potentially significant impacts on San Francisco dusky-footed woodrat would be reduced to *less than significant*.

Impact BIO-2 Riparian Habitat or Other Sensitive Natural Communities (Significance Standard B). The proposed project would not 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 Game or U.S. Fish and Wildlife Service. *(Less than Significant)*

No riparian habitat or other natural communities considered sensitive by CDFW (2022b) are present on the project site. The coast live oak-California bay woodland community (i.e., *Quercus agrifolia – Umbellularia californica* association) that occurs immediately south of the site (see Figure 4.3-1), is considered sensitive by CDFW and is a 'natural area' under the Campus Specimen Tree Program but this community is common on north-facing slopes in the Berkeley Hills and the portion that is adjacent to the southern edge of the site (i.e., between Canyon Road and perimeter fence) is degraded by the abundance of invasive non-native plants (e.g., English ivy) and regular human disturbance. The proposed project may require minor tree trimming along the woodland edge but would not result in direct permanent impacts to the woodland or remove any trees in this woodland. Ground disturbance from construction could facilitate increased growth of non-native invasive plants that could spread into the adjacent woodland and create dust that settles on the leaves of native plants, adversely affecting photosynthesis, respiration, and transpiration. Given the existing abundance of non-native plants and disturbance adjacent to the site, however, these indirect impacts would not further degrade the community to an extent that it would be dominated by such species. Therefore, the proposed project would not have a substantial

adverse effect on coast live oak-California bay woodland or any other sensitive natural communities and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

Mitigation Measures

As described above, the proposed project would not result in significant impacts related to riparian habitat or other sensitive natural communities, and therefore, no mitigation measures are required.

Impact BIO-3 State or Federally Protected Wetlands (Significance Standard C). The proposed project would not have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. *(Less than Significant)*

No aquatic resources potentially subject to state or federal jurisdiction are present on the project site, as described in Section 4.3.1.5, Sensitive Biological Resources. The two potentially jurisdictional drainages north of Centennial Drive terminate at storm drains that convey winter stormwater flows into the underground culverted section of Strawberry Creek under the site. Project construction would not involve any ground disturbance near these features that could result in direct impacts to Strawberry Creek or indirect impacts related to increased sedimentation or erosion. Specifically, the proposed project would not modify or otherwise affect subsurface culverts under or adjacent to the project site, including the 48-inch Strawberry Creek storm drain located in Centennial Drive approximately 15 feet below existing grade and the 60-inch storm drain that runs beneath the existing Strawberry Canyon Recreation Center, Cal Softball Field, Witter Rugby Field, and California Memorial Stadium and is approximately 35 feet below existing grade. The proposed project would implement all geotechnical and structural engineering recommendations related to avoidance of such subsurface culverts. Additionally, as part of the proposed project, UC Berkeley would implement the hydrological CBPs listed here and in Chapter 3, Project Description (see Appendix B for a complete list of all UC Berkeley CBPs):

- **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 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.
- **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.
- **CBP HYD-6:** UC Berkeley will continue to develop and implement the recommendations of the Strawberry Creek Management Plan and its updates, and construct improvements as appropriate. These

recommendations include, but are not limited to, minimization of the amount of land exposed at any one time during construction as feasible; use of temporary vegetation or mulch to stabilize critical areas where construction staging activities must be carried out prior to permanent cover of exposed lands; installation of permanent vegetation and erosion control structures as soon as practical; protection and retention of natural vegetation; and implementation of post-construction structural and non-structural water quality control techniques.

- **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.
- **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.

Based on the design of the proposed project to achieve net zero runoff (see Chapter 3, Project Description), and the implementation of these CBPs, the proposed project would not have a substantial adverse effect on protected wetlands and other aquatic resources related to increased sedimentation or erosion. Therefore, the project would have *a less than significant impact* on state or federally protected wetlands or other aquatic resources.

Significance without Mitigation: Less than significant.

Mitigation Measures

As described above, the proposed project would not result in significant impacts related to protected wetlands or other aquatic resources, and therefore, no mitigation measures are required.

Impact BIO-4 Resident or Migratory Fish and Wildlife Movement and Native Wildlife Nursery Sites (Significance Standard D). The proposed project would not 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. *(Less than Significant)*

As described in Impact BIO-1, while the Cal Softball Field and associated facilities in the Strawberry Creek Recreation Area are entirely developed with little or no remaining natural vegetation and limited wildlife habitat values, the undeveloped hillsides south and north of the project site support natural and semi-natural vegetation that allows for movement of common, local wildlife species. The proposed project would not occur in a critical habitat linkage identified as regionally important for wildlife movement and habitat connectivity (Penrod et al. 2013) or create any new barriers (e.g., roads, structures) that would permanently alter existing wildlife movement patterns through adjacent lands to the north and south. The analysis herein describes the potential for project impacts to wildlife movement and use of native wildlife nursery sites during project construction or operations.

Construction

The potential for the proposed project to substantially interfere with wildlife movement or impede use of wildlife nursery sites is unlikely considering the existing baseline conditions and limited increase to noise levels during the temporary, construction-related activities. Resident wildlife that regularly move through the area while foraging and dispersing (e.g., black-tailed deer) may temporarily alter their movement patterns to avoid increased noise generated by the project during the approximately 13-month construction period and potentially several weeks after, and contiguous open space is available for wildlife to do so. Similarly, migratory wildlife (e.g., birds and bats) may avoid using areas exposed to increased disturbance activity as stopover habitat during fall and spring migration periods. Such impacts would be temporary, however, and both native and migratory wildlife are expected to resume normal movement patterns soon after project construction is completed, as further described below for project operations.

Project construction would not impede the use of native wildlife nursery sites with the implementation of CBPs BIO-1 and BIO-2. As discussed under Impact BIO-1, trees on and adjacent to the project site provide potential nesting habitat for native birds and roosting habitat for tree-roosting bats. However, the proposed project would implement CBPs BIO-1 and BIO-2 to avoid construction impacts on nesting birds and roosting bats. Additionally, as described in Section 4.5, Noise, CBP NOI-2 would also be implemented with the proposed project, which would limit construction hours and construction noise. Therefore, proposed project construction would not interfere substantially with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites and the impact would be *less than significant*.

Operations

Once construction is complete, project operations would be the same as under existing conditions. Any wildlife that currently move through the undeveloped hillsides south and north of the site and native birds and bats nesting or roosting in these areas have adapted to existing levels of human activity, noise, lighting and movement that already occur on the project site and at other adjacent fields. Artificial lighting at night has been documented to affect the behavior or physiology of many wildlife species (Longcore and Rich 2004, Gaston et al. 2013), which can translate to reduced survival and reproduction (Dominoni et al. 2020). Artificial lighting can impact wildlife by interfering with circadian rhythms, disrupting foraging activity and movement patterns, interfering with bird navigation, or singing, and altering the development of eggs, larvae, or juveniles. As reported in Appendix D, Lighting Analysis, the proposed project would update the existing field lighting system that consists of unshielded high-pressure sodium floodlights with a modern LED system featuring improved light quality, increased mounting heights with reduced light trespass into adjacent areas, and additional shielding. Proposed project vertical light spill is estimated in Section 4.2, Aesthetics (Table 4.2-4) and Appendix D to be either the same as or reduced compared to existing conditions at receptor sites on the hillside south and the road north of the project site; the three receptor sites on the hillside south of the site are already blocked or partially blocked by existing vegetation and such conditions would not change with the proposed project. Lighting glare may increase from baseline (Section 4.2, Aesthetics [Table 4.2-5] and Appendix D) at two of the four receptor sites but would not be expected at levels that would significantly affect wildlife behavior and adversely affect wildlife populations over time. Occasional increased glare associated with events past dusk until 10:00 p.m. may have some effect on wildlife movement behavior, such as temporary avoidance of movements near the proposed project, but these effects are not expected to change substantially based on the proposed project and are not expected to reduce the viability of local wildlife populations below self-sustaining levels. Open space north, south and east of the proposed project provides ample dark cover opportunities for those individuals moving across the landscape at night that would prefer the darker environments. In addition, any wildlife currently using these hillsides at night have adapted to existing artificial light levels and the proposed project would not substantially increase these levels, nor would it add new lighting that would penetrate adjacent habitat.

Operational noise would not increase with the proposed project during typical weekday use but would increase somewhat during typical and maximum game events that would occur up to 25 times during the competitive season, as described in Section 4.5, Noise (see Tables 4.5-16 and 4.5-17). The increase in noise associated with the up to 25 games per year, an increase over the 15 to 20 games under existing conditions, would occasionally somewhat increase ambient noise levels during the day and after dusk until 10:00 p.m. from game spectators, vehicles parking, and human presence. Competitive softball games at the proposed project would occasionally somewhat increase noise levels from baseline conditions; however, wildlife inhabiting the area are habituated to the existing baseline noise levels associated with use of the existing softball field and other adjacent fields, and proposed project operational noise would not be expected to substantially exceed existing levels, as demonstrated in Section 4.5, Noise. Therefore, proposed project operations would not interfere substantially with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

Mitigation Measures

As described above, the proposed project would not result in significant impacts related to wildlife corridors or wildlife nursery sites, and therefore, no mitigation measures are required.

Impact BIO-5 Cumulative Impacts on Biological Resources. The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts with respect to biological resources. *(Less than Significant)*

This section evaluates whether the proposed project, in combination with other UC Berkeley and non-UC Berkeley projects that are reasonably foreseeable, would result in significant cumulative impacts to biological resources.

The geographic context for the analysis of cumulative impacts includes the list of pending City of Berkeley, UC Berkeley, and Lawrence Berkeley National Laboratory projects in Table 4.1-1, in Section 4.1, Introduction to Analysis. Most of these projects would occur in areas that have been extensively developed for residential, commercial, and institutional uses. Sensitive vegetation and wildlife resources are generally absent from such areas except for projects in Hill Campus East and Hill Campus West outside of developed areas and on the margins of the LBNL campus.

Adverse effects to special-status species and other sensitive resources can combine to create a significant impact even when the effects of individual projects are not significant in themselves. The impacts of the proposed project are reduced to less than significant levels with implementation of CBPs and mitigation measures described in Impacts BIO-1 through BIO-4. The overall cumulative effect of the proposed project and cumulative development would depend on the degree to which significant resources are protected or mitigated as part of site-specific developments and land management activities. This includes preservation of areas of sensitive natural communities, such as riparian and oak-bay woodland, riparian scrub, and native grasslands; protection of essential habitat for special-status plant or animal species (e.g., scrub habitat for Alameda whipsnake in and adjacent to the LBNL campus); and avoidance and enhancement of wetlands.

There is a potential for both rugby and softball games to be scheduled on the same evening. Should this occur it is expected that artificial night lighting and noise would be limited to occasional evenings a few hours past dusk up to 10:00 p.m. As indicated in Section 4.2, Aesthetics (Table 4.2-6) and Appendix D, vertical light spill associated with existing rugby and proposed project lighting (dusk to 10:00 p.m.) would be reduced or would be the same,

compared to existing conditions. Additionally, noise levels associated with existing rugby and proposed project softball games would not be expected to substantially exceed existing noise levels, as documented in Section 4.5, Noise. All species in the BSA are currently exposed to lighting from existing evening sporting events at the project site, adjacent Witter Rugby Field and California Memorial Stadium, cars on Centennial Drive, street lighting, and lights from the residential uses in the Panoramic Hills Neighborhood. In addition, all species are currently exposed to existing noise from sporting events at the project site, adjacent Witter Rugby Field and Cal Memorial Stadium. Therefore, long-term effects of nighttime lighting and noise on wildlife productivity, sleep, stress, immune response, predatory/prey relationships, and similar compromising effects would not be anticipated from rugby and proposed project softball games scheduled on the same evening.

The UC Berkeley Hill Campus Wildland Vegetation Fuel Management Plan (WVFMP) directs the treatment of vegetation that could become fire fuel within the UC Berkeley Hill Campus. Vegetation treatments described in the WVFMP are aimed at reducing the volume and arrangement of fuel available for a wildfire. The WVFMP includes four vegetation treatment types within the Hill Campus using various treatment methods, including: 1) evacuation support treatments, 2) temporary refuge areas, 3) fuel breaks, and 4) fire hazard reduction. On average, UC Berkeley would implement vegetation treatment activities on 200 acres per year within the WVFMP Plan Area. Chapter 3, Project Description, and the wildfire protection plan for the proposed project (Appendix C), acknowledge certain vegetation treatments that have or would be implemented under the WVFMP to the south or north of the project site. The WVFMP EIR identifies potentially significant impacts on special-status species, riparian and other sensitive natural communities, and state or federally protected wetlands; however, all impacts would be reduced to less than significant with the implementation of identified mitigation measures (UC Berkeley 2020 and 20201e). Given that the proposed project would not conduct vegetation removal outside of the project site in the WVFMP Plan Area, it would not contribute to these impacts.

Most other projects in the cumulative setting are infill projects in an urbanized setting that would redevelop either developed sites containing ornamental landscaping or vacant, previously developed sites vegetated with plants characteristic of disturbed sites in urban areas. Although UC Berkeley is not subject to local regulations, other reasonably foreseeable non-UC Berkeley projects in the cities of Berkeley and Oakland would be required to follow those jurisdictions' General Plan policies and regulations intended to protect sensitive resources. All cumulative projects would be required to adhere to applicable federal and State regulations and agency procedures to avoid and mitigate potential resources. Therefore, the project would not contribute to significant cumulative impacts and impacts would be *less than significant*.

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4.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section describes the existing cultural (archaeological and built environment historical resources) and tribal cultural resources conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project and cumulative impacts, and identifies mitigation measures for any significant or potentially significant impacts related to implementation of the of the UC Berkeley Cal Softball Field Renovation Project (project or proposed project). The analysis is based on a review of the following documents: the 2021 Long Range Development Plan (University of California [UC] Berkeley 2021a), the Cal Softball Field Renovation Project Lighting Analysis (Appendix D) and the National Register of Historic Places Registration Form: Panoramic Hill (Thomas and Drotos 2005).

4.4.1 ENVIRONMENTAL SETTING

Information in this section was obtained through California Historical Resources Information System (CHRIS) records searches, archival research and review of previous documentation pertaining to cultural (archaeological and built environment historical resources) and tribal cultural resources, pedestrian surveys of the project site, and correspondence with Native American tribes and other interested parties. Information summarized below related to the Panoramic Hill NRHP Historic District (No. 05000424) is described in detail in the National Register of Historic Places Registration Form: Panoramic Hill (Thomas and Drotos 2005) included in Appendix F.

4.4.1.1 AREA OF POTENTIAL IMPACTS

The area of potential impact (API) is the study area delineated to assess potential impacts from the construction and operation of a project on cultural (archaeological and built environment historical resources) and tribal cultural resources. The API encompasses the geographic area or areas within which a project may directly or indirectly cause a substantial adverse change in the significance of a known or unknown historical resource. A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource is materially impaired (14 CCR 15064.5[b][1]). Under the California Environmental Quality Act (CEQA), material impairment of a historical resource is considered a significant impact (or effect), which can be direct, indirect, or cumulative.[1]

A direct or primary effect on a historical resource is one that is caused by a project and occurs at the same time and place (14 CCR 15358[a][1]). Examples of direct effects that could be caused by, and immediately related to, a project include demolition, destruction, relocation, and alteration of a historical resource as a result of ground disturbance, high levels of ground-borne vibration, and other construction activities. In some cases, however, direct effects can be visual, auditory, or atmospheric. While these types of effects are not always physical in nature, they can cause physical changes that materially and adversely alter those characteristics of a historical resource or its immediate surroundings that contribute to its significance. Visual intrusions within the setting of a historical resource, for example, could result in material impairment if the setting is a characteristic that contributes to the significance of the resource. Similarly, operational noise that exceeds the ambient level of a sensitive noise receptor can cause material impairment to a historical resource such as a church, school, library, or cemetery that derives

[1] As used in the CEQA Guidelines and Title 14 California Code of Regulations Section 15358, the terms “effects” and “impacts” are synonymous and, therefore, are also used interchangeably in this section.

its significance, in part, from an inherently quiet auditory setting.[2] Finally, atmospheric intrusions caused by the introduction of high levels of fugitive dust emissions or chemical pollutants, for example, can result in adverse impacts that directly and physically affect biological landscape features such as trees and other plantings that have been identified as historical resources for the purposes of CEQA. Overall, while direct effects include physical effects, they may also include effects that are visual, auditory, or atmospheric in nature if the effect is caused by, and occurs at the same time and place, as a project and there are no other intervening causes between the activities or components of the project and the historical resource.

By contrast, an indirect or secondary effect is a reasonably foreseeable effect caused by a project that occurs later in time or is farther removed in distance. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems (14 CCR 15358[a][2]). Because these types of effects are not immediately related to the project, they are considered secondary effects. A secondary effect of the placement of trails in an open space, for example, could result at some later point in the surface collection of artifacts by hikers. Another example could involve the construction of a new freeway that reroutes traffic away from the commercial center of a town and eventually results in the decline of business activity or the deterioration of historical resources due to neglect.

AREA OF POTENTIAL IMPACTS FOR ARCHAEOLOGICAL RESOURCES

The API for archaeological resources includes the entire area within the project site boundary as depicted in Figure 4.4-1. This area represents the maximum area of direct project disturbance.

AREA OF POTENTIAL IMPACTS FOR BUILT ENVIRONMENT HISTORICAL RESOURCES

The API for built environment historical resources is depicted in Figure 4.4-2. When delineating the API, proposed project activities were considered in conjunction with historic era-built resources that are 45 years of age or older (those built in or prior to 1978) that may sustain impacts due to the construction or operation of the proposed project.[3] Locations for the properties described below can be found on Figure 4.4-2.

[2] Construction noise that exceeds the ambient level of a sensitive noise receptor is not analyzed because it is considered a temporary impact that would not have an adverse on historical resources since it would not cause physical damage and would not permanently alter or diminish the integrity of such resources. Temporary construction noise would not result in a substantial adverse change in the significance of a historical resource and, therefore, would not cause a significant impact under CEQA.

[3] While the 50-year threshold is generally used for listing resources in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), the Office of Historic Preservation (OHP) Instructions for Recording Historical Resources recommends recording "any physical evidence of human activities over 45 years . . . for the purposes of inclusion in the OHP's filing system." It also allows for the "documentation of resources less than 45 years . . . if those resources have been formally evaluated, regardless of the outcome of the evaluation." Further, the guidance notes that the 45-year threshold recognizes that there is commonly a five-year lag between resource identification and the date that planning decisions are made, and thus it explicitly encourages the collection of data about resources that may become eligible for the NRHP or CRHR within that planning period. More restrictive criteria must be met before the resources included in OHP's filing system are listed, found eligible for listing, or otherwise determined to be important in connection with federal, state, and local legal statuses and registration programs (OHP 1995).

SOURCE: ESRI World Imagery 2018

DUDEK

0 150 300 Feet

FIGURE 4.4-1

Archaeological Area of Potential Impacts

UC Berkeley Cal Softball Field Renovation Project

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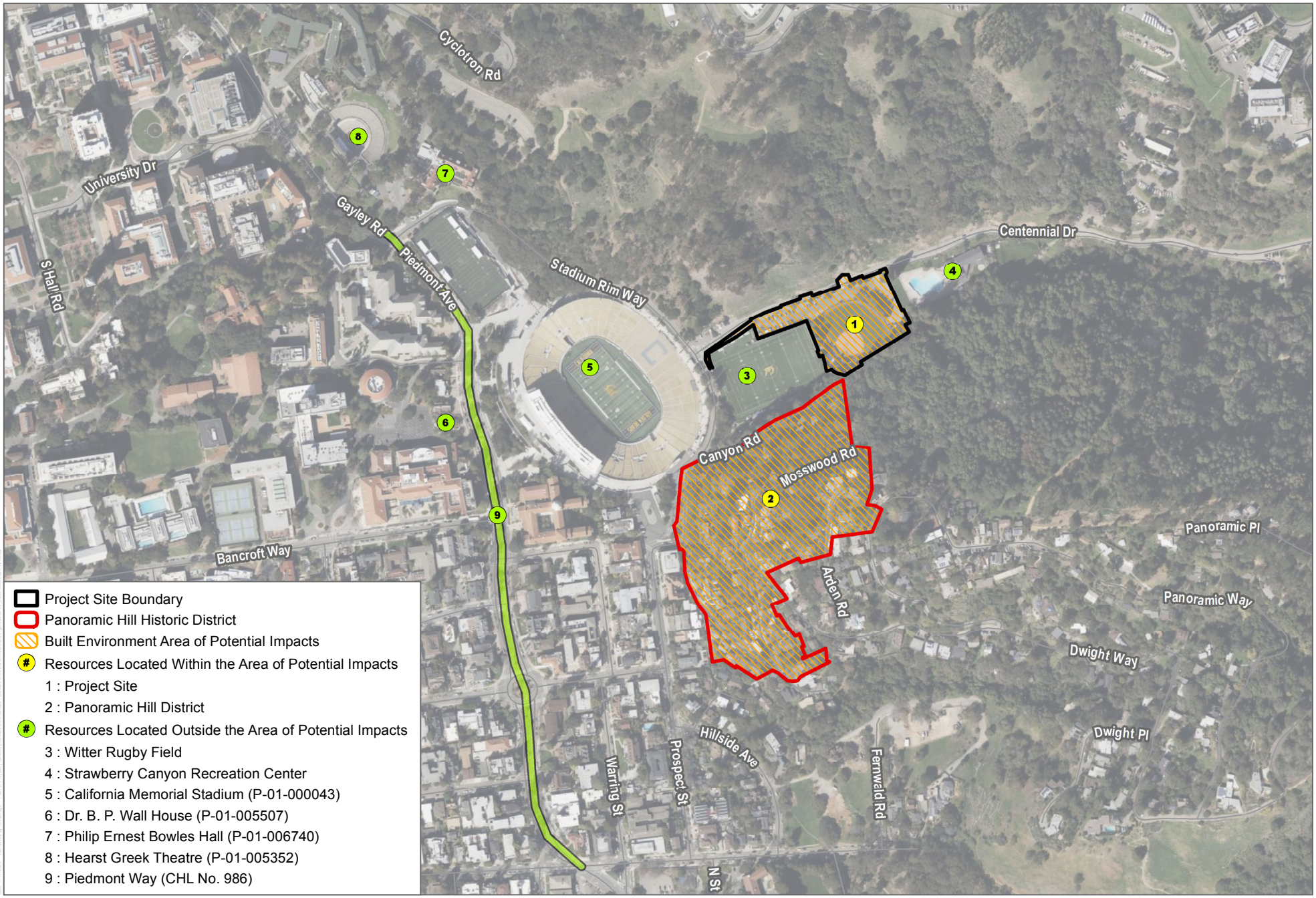
The API for built environment historical resources is limited to the project site (Figure 4.4-2, Map ID 1) and the extent of National Register of Historic Places (NRHP) District No. 05000425 *Panoramic Hill Historic District* (Historic District) (Figure 4.4-2, Map ID 2). The project site is a small portion of the large parcel that includes the UC Berkeley campus. The parcel is identified as Assessor Parcel Number (APN) 057-2042-004-10 and addressed as 2594 Hearst Avenue. Although portions of the UC Berkeley campus were initially developed as early as 1873, the project site encompasses the existing Cal Softball Field located in the southeast corner of the campus and was not developed until 1995. The Cal Softball Field is located on Centennial Drive, off Stadium Rim Way within APN 057-2042-004-10 and does not have a legal situs. The Cal Softball Field has not yet reached the age threshold for evaluation—i.e., 45 years of age or older at the time of the anticipated evaluation. As such, the Cal Softball Field, located in the API does not require formal evaluation for historic significance at this time, and it is not considered a CEQA historical resource.

Additional considerations used to justify the delineation of the API for built environment historical resources are summarized below:

- The National Register of Historic Places (NRHP) District No. 05000425 *Panoramic Hill Historic District* (Historic District) is located directly adjacent to the project site (Figure 4.4-2, Map ID 2); approximately 40-feet from the northeast corner of the Historic District's historic property boundary and approximately 90-feet from the nearest contributing residential property. The Historic District appears in the California Office of Historic Preservation's Built Environment Resources Directory (BERD) with a California Historical Resources (CHR) status code of 1S (*Individually listed in the National Register by the Keeper. Listed in the California Register*). The Historic District is considered a historical resource for the purposes of CEQA. Due to proximity of the Historic District to proposed project construction and operation, potential impacts to individual contributing resources as well as to the Historic District overall is considered. As such, the API for built environment historical resources encompasses the Historic District.
- The API for built environment historical resources excludes the adjacent Witter Rugby Field (Figure 4.4-2, Map ID 3) located to the west of the Cal Softball Field. The field was initially developed in 1995 and was not formally evaluated for the current project because it has not yet reached the age threshold for evaluation and therefore does not require formal evaluation for historic significance at this time. As there is no potential to impact the field, it has been excluded from the API for built environment historical resources.
- The API for built environment historical resources excludes the adjacent Strawberry Canyon Recreation and Pool (Figure 4.4-2, Map ID 4) located to the east of the Cal Softball Field, which was initially developed in 1959. The Strawberry Canyon Recreation and Pool includes the Haas Clubhouse and the Stern Pool, neither of which are listed in the BERD nor do they appear in any local registers or surveys. The Haas Clubhouse is identified in the UC Berkeley 2021 Long Range Development Plan Environmental Impact Report (LRDP EIR) as "likely eligible" for the California Register/National Register based on the preliminary assessment conducted for the EIR. The Stern Pool is sited approximately 175 feet from the nearest proposed new construction and the Haas Clubhouse is sited approximately 300 feet from the nearest proposed new construction. The Strawberry Canyon Recreation and Pool would not be materially impaired by the proposed project because it is too distant to be affected by any potential vibratory, auditory, or atmospheric effects that the project may cause. Additionally, it would still be located adjacent to a sports complex so there is no potential impact to the setting of the property due to construction or operation/implementation of the proposed project. As such, the project would have no potential to impact this property. Consequently, the Strawberry Canyon Recreation and Pool has been excluded from the API for built environment historical resources.
- The API for built environment historical resources also excludes the California Memorial Stadium (P-01-000043; Stadium) built in 1923 (Figure 4.4-2, Map ID 5). The California Memorial Stadium was previously determined eligible by the National Park Service in 2006 (NPS-06001086-0000) and appears in the BERD

with a CHR status code of 1S (*Individually listed in the National Register by the Keeper. Listed in the California Register*). As such, the California Memorial Stadium is considered a historical resource for the purposes of CEQA. While the California Memorial Stadium is located to the west of the project site, no construction is proposed within the property boundary of the Stadium. The closest construction activities are limited to underground utility connections and pedestrian improvements that would be implemented as part of a mitigation measure (see Section 4.6, Transportation; Mitigation Measure TRA-1) east of the California Memorial Stadium. The California Memorial Stadium is too far away from the proposed project construction to be affected by any potential vibratory, auditory, or atmospheric effects that the proposed project may cause. Additionally, it would still be located adjacent to a sports complex so there is no potential impact to the setting of the property due to construction or operation/implementation of the proposed project. As such, the proposed project would have no potential to impact this property. Consequently, the California Memorial Stadium has been excluded from the API for built environment historical resources.

- The API for built environment historical resources excludes the Hearst Greek Theatre (P-01-005352 Greek Theatre) (Figure 4.4-2, Map ID 8) built in 1902, Philip Ernest Bowles Hall (P-01-006740; Bowles Hall) (Figure 4.4-2, Map ID 7), and the Dr. B. P. Wall House (P-01-005507) (Figure 4.4-2, Map ID 6). The Greek Theatre was previously determined eligible for the National Register in 1982 (4701-0693-0000) and Bowles Hall was previously determined eligible for the National Register in 1989. Both properties appear in the BERD with a CHR status code of 1S (*Individually listed in the National Register by the Keeper. Listed in the California Register*). The Dr. B. P. Wall House appears in the BERD with a CHR status code of 3S (*Appears eligible for NRHP individually through survey evaluation*). While all three properties are considered historical resources for the purposes of CEQA, each property is located over 1,400 feet from the nearest proposed new construction and the views of the proposed project are completely occluded by existing topography, buildings, and mature vegetation. Additionally, all three properties are too distant to be affected by any potential vibratory, auditory, or atmospheric effects that the proposed project may cause. As such, the proposed project would have no potential to impact these properties. Moreover, the use of the Cal Softball Field (sports field) would not change as a result of the proposed project. Consequently, they have been excluded from the API for built environment historical resources.
- Finally, the API for built environment historical resources also excludes Piedmont Way (California Historical Landmark [CHL] No. 986), a residential street designed by landscape architect, Frederick Law Olmsted in 1865 located roughly between 2200–2499 Piedmont Avenue (Figure 4.4-2, Map ID 9). Piedmont Way was registered as a CHL in 1989 and as City of Berkeley Landmark No.130 in 1990; however, it is not presently listed in the BERD. For these reasons, Piedmont Way is considered a historical resource for the purposes of CEQA. Piedmont Way is located over 900 feet from the nearest proposed new construction and the views of the proposed project are completely occluded by existing topography, buildings, and mature vegetation. While it is located to the west of the project site, no construction is proposed within the property boundary of Piedmont Way. As such, Piedmont Way would not be materially impaired by the proposed project because it is too distant to be affected by any potential vibratory, auditory, or atmospheric effects that the project may cause. Additionally, Piedmont Way would still be located adjacent to a sports complex (California Memorial Stadium) so there is no potential impact to the setting of the property due to construction or operation/implementation of the proposed project. As such, the project would have no potential to impact this property. Consequently, Piedmont Way has been excluded from the API for built environment historical resources.



SOURCE: Bing Maps 2022

DUDEK

0 250 500 Feet

FIGURE 4.4-2

Built Environment Area of Potential Impacts

UC Berkeley Cal Softball Field Renovation Project

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4.4.1.2 PREHISTORIC CONTEXT

The San Francisco Bay region has been occupied by humans for at least 12,000 years. Sites dating to the Early Holocene/Lower Archaic between 8000 and 3500 BC are extremely rare, though at least one has been recorded. During that time period, people were largely mobile foragers using large leaf-shaped projectile points and handheld milling stones. The Early Period/Middle Archaic, between 3500 and 500 BC, saw increased stone technologies, trade, and sedentism. Many sites in the San Francisco Bay region dating this period are shellmounds, midden sites containing large quantities of mollusk shells. Over 400 shellmounds around the San Francisco Bay were recovered in the early 20th century. One such site near the study area is the West Berkeley shellmound, which was situated at the mouth of Strawberry Creek at the San Francisco Bay approximately two and a half miles west of the project site and was occupied by humans as early as 4,000 years ago.

4.4.1.3 ETHNOGRAPHIC BACKGROUND

Prior to European arrival in the 18th century, the API 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 BC (Moratto 1984; Hattori 1982). Linguistic affiliation with the Ohlone included up to seven distinct language branches (Kroeber 1925).

4.4.1.4 HISTORIC CONTEXT

The following summary historic context chronicles the development of Alameda County, the City of Berkeley, and the University of California at Berkeley, and concludes with a brief discussion of the development of the API for built environment historical resources.

HISTORICAL OVERVIEW OF ALAMEDA COUNTY

The first Spanish expedition to enter the greater San Francisco Bay Area occurred under Gaspar de Portola in 1769. Subsequent over-land expeditions into the territory on the eastern coast of the San Francisco Bay, termed *Contra Costa* ("coast opposite"; Hoover 2002) by Spanish explorers, were led by Pedro Fages in 1770 and in 1772, by Captain Juan Bautista de Anza in 1776, and Sergeant Pedro Amador in 1795. A major emphasis during the Spanish Period in California was the construction of missions and associated presidios to forcibly convert the Native American population to Christianity. Overall, a total of 21 missions were constructed by the Dominican and Franciscan orders between 1769 and 1823, including Mission San José de Guadalupe, which was established in the Fremont area of Alameda County in 1797 (Hoover 2002).

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. Among the ranchos deeded within the future Alameda County, Rancho San Antonio (encompassing the cities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont and a portion of San Leandro) was granted to Luís María Peralta by the last Spanish Governor, Pablo Vicente de Solá, in 1820 (Hoover 2002).

The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period. Following the establishment of the 27 original counties of California on February 18, 1850, Alameda County formed in 1853 from a combination of territory drawn from Contra Costa and Santa Clara counties. The new State of California recognized the ownership of lands that were granted under the Mexican land grants of the previous several decades (Hoover 2002).

CITY OF BERKELEY AND UNIVERSITY OF CALIFORNIA AT BERKELEY HISTORICAL DEVELOPMENT

When the Gold Rush began in 1848, an influx of people flooded into the coastal communities throughout Northern California. The small community of Ocean View initially developed to the north of the burgeoning City of Oakland in 1853. In 1866, the community was selected by the California State Legislature as the site for the California Institution of the Deaf, Dumb, and Blind (today the University of California, Berkeley Clark Kerr Campus). The site for the campus was selected for its moderate weather and semi-rural setting, as well as for its proximate location to the urban centers of Oakland and San Francisco. The establishment of the institution attracted subsequent development in the area, and in 1873, the University of California (originally founded as the College of California in Oakland in 1855) relocated its campus to a site located to the north of the California Institution of the Deaf, Dumb, and Blind. The community surrounding the new University of California was named Berkeley after English philosopher, Bishop George Berkeley, who is known for his belief in the significance of education in the spread of western civilization and ideals. The community of Ocean View was annexed to Berkeley in 1878. By 1890, the City of Berkeley had just over 5,100 inhabitants. The population of Berkeley expanded rapidly during the beginning of the twentieth century from 13,214 in 1900 to over 85,000 by 1940. The period following the close of World War II accelerated the pace of population growth in Berkeley that began in the 1890s from 113,805 citizens in 1950 to 116,716 by 1970. This pace of growth slowed by the close of the century, resulting in a population drop to 102,743 in the year 2000. In 2020, the City of Berkeley recorded a population of 123,065 citizens who are predominately employed in the education, instruction, library, and management occupation sectors (Hoover 2002; Encyclopaedia Britannica 2023.; Bay Area Census 2023; Data USA 2023).

BUILT ENVIRONMENT HISTORICAL RESOURCES IN THE AREA OF POTENTIAL IMPACTS

The API is limited to: the project site, which the location of the Cal Softball Field, and the Panoramic Hill Historic District (Historic District), which is located south of the project site. The Cal Softball Field was established by UC Berkeley in 1995 as part of campus sports facility expansion in the 1990s. The Historic District is comprised of a residential area of the City of Berkeley that developed near the UC Berkeley campus during the first half of the 20th century. The neighborhood was listed as a NRHP historic district in 2005 and encompasses 61 contributing and 18 noncontributing buildings; 14 structures (roads/paths/walls); and 1 fountain. The Historic District "is a woodsy, hillside residential neighborhood consisting primarily of single-family detached houses built primarily between 1901 and 1950. Architecturally, the contributing houses represent various stages and manifestations of the Bay Area Tradition architectural style (Thomas and Drotos 2005)."

4.4.1.5 CULTURAL RESOURCES

This section presents information about known cultural (archaeological and built environment historical resources) and tribal cultural resources on or in proximity to the project site (see Appendix F for additional details). Section 4.4.2, Regulatory Framework, provides background information on the federal, state, and local regulations and requirements related to these resources.

ARCHAEOLOGICAL RESOURCES

Background research and analyses completed by Archeo-Tec (2021) for the UC Berkeley 2021 LRDP EIR (UC Berkeley 2021b), including a records search, and subsequent archaeological efforts conducted during the preparation of this EIR, including archaeological survey, did not result in the identification of archaeological resources within areas that would be affected by the proposed project. Although no resources were identified, the area appears to have a moderate potential for supporting the presence of buried and/or unanticipated archaeological resources.

TRIBAL CULTURAL RESOURCES

The proposed project is subject to compliance with AB 52 (PRC, Section 21074), which requires consideration of impacts to "tribal cultural resources" as part of the CEQA process and requires the CEQA lead agency to notify any groups (who have requested notification) of the proposed project who are traditionally or culturally affiliated with the geographic area of the project.

On November 9, 2022, UC Berkeley notified all applicable tribes informing them of the proposed project, providing a project description and background, and requesting consultation pursuant to AB 52. Contacts included Corrina Gould, Chairperson of the Confederated Villages of Lisjan; Ann Marie Sayers, Chairperson of the Indian Canyon Mutsun Band of Costanoan; Irenne Zwierlein, Chairperson of the Amah Mutsun Tribal Band of Mission San Juan Bautista; Merlene Sanchez, Chairperson of the Guidiville Indian Rancheria; Monica Arellano, Chairperson of the Muwekma Ohlone Indian Tribe of the SF Bay Area; Katherine Erolinda Perez, Chairperson of the Northern Valley Yokuts Tribe; and Andrew Galvan of the Ohlone Indian Tribe. On October 24, 2023, Corrina Gould of the Confederated Villages of Lisjan responded stating "at this time the Tribe has no further information to supply about the proposed site for this plan. As always we encourage developers in our traditional territories to remain cognizant of the facts that our tribal people lived all over the Bay Area and because of colonization and genocidal practices that reached into the late 19th century and early 20th Century, it is not always possible to know for certain if you may find cultural resources or burials at sites where you anticipate ground disturbance. The Tribe wishes to be contacted if there are any findings." No other tribes responded to UC Berkeley with a request to consult on the project. There are no known tribal cultural resources on the project site.

BUILT ENVIRONMENT HISTORICAL RESOURCES

As the existing Cal Softball Field was initially developed 1995, it does not meet the age threshold or any other historic significance criteria considerations to warrant consideration as a CEQA historical resource. It is not a historical resource under CEQA and it does not require further discussion in this EIR.

The API for built environment historical resources encompasses the NRHP Historic District No. 05000424 Panoramic Hill that is considered a CEQA historical resource. The neighborhood was listed on the NRHP in 2005. The following statement of significance summary is from the NRHP nomination form and succinctly captures the district's historical significance (Thomas and Drotos 2005):

> The Panoramic Hill Historic District is eligible for the National Register of Historic Places under criterion C at the local level of significance. Under criterion C, Panoramic Hill is significant in the area of Architecture as a neighborhood that represents the Bay Area Tradition in architecture, primarily the first phase associated with the Arts and Crafts Movement. The district includes notable houses by architects Ernest Coxhead, Bernard Maybeck, Julia Morgan, Walter Steilberg, and others; a distinctive street plan; and paths and steps that provide pedestrian circulation. Since the north side fire of 1923, Panoramic Hill is among the most extensive surviving Arts and Crafts

> neighborhoods in Berkeley, which was the Northern California center of this important early twentieth century architectural movement. The district is significant for the period from 1901, when the first home was constructed, through 1950. Construction of significant new buildings dwindled during the 1940s and had virtually ended by that later date. A few significant architect-designed alterations took place to existing homes in the early 1950s. One home, the Feldman House at 13 Mosswood Road, was constructed in 1975 from a 1939 Frank Lloyd Wright design.

The boundary for the Historic District is limited to the lower, western elevations of Panoramic Hill, which is "…geographically distinguished by Strawberry Canyon to the north and Hamilton Gulch to the south. The hill's borders are naturally articulated. Situated in the East Bay Hills, the hillside's predominant orientation is west (Thomas and Drotos 2005)." The lower western elevations encompass 61 contributing and 18 noncontributing buildings including single and multi-family homes and ancillary buildings, 14 structures and landscape features including roads, paths, stairs and walls, and 1 fountain, as previously described.

4.4.2 REGULATORY FRAMEWORK

4.4.2.1 FEDERAL

NATIONAL HISTORIC PRESERVATION ACT

The NHPA established the NRHP and the President's Advisory Council on Historic Preservation (ACHP), and provided that states may establish State Historic Preservation Officers to carry out some of the functions of the NHPA. Most significantly for federal agencies responsible for managing cultural resources, Section 106 of the NHPA directs that:

> [t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP.

Section 106 also affords the ACHP a reasonable opportunity to comment on the undertaking (16 U.S.C. 470f).

36 CFR Part 800 implements Section 106 of the NHPA. It defines the steps necessary to identify historic properties (those cultural resources listed in or eligible for listing in the NRHP), including consultation with federally recognized Native American tribes to identify resources with important cultural values; to determine whether or not they may be adversely affected by a proposed undertaking; and the process for eliminating, reducing, or mitigating the adverse effects.

The content of 36 CFR 60.4 defines criteria for determining eligibility for listing in the NRHP. The significance of cultural resources identified during an inventory must be formally evaluated for historic significance in consultation with the ACHP and the California State Historic Preservation Officer to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Regarding criteria A through D of Section 106, the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, cultural resources, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that (36 CFR 60.4):

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or
B. Are associated with the lives of persons significant in our past; or
C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
D. Have yielded, or may be likely to yield, information important in prehistory or history.

The 1992 amendments to the NHPA enhance the recognition of tribal governments' roles in the national historic preservation program, including adding a member of an Indian tribe or Native Hawaiian organization to the ACHP.

The NHPA amendments:

- Clarify that properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion in the National Register
- Reinforce the provisions of the Council's regulations that require the federal agency to consult on properties of religious and cultural importance.

The 1992 amendments also specify that the ACHP can enter into agreement with tribes that permit undertakings on tribal land and that are reviewed under tribal regulations governing Section 106. Regulations implementing the NHPA state that a federal agency must consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) protects Native American remains, including Native American graves on federal and tribal lands, and recognizes tribal authority over the treatment of unmarked graves. NAGPRA prohibits the selling of Native American remains and provides guidelines for the return of Native American human remains and cultural objects from any collection receiving federal funding, such as museums, universities, or governments. Noncompliance with NAGPRA can result in civil and criminal penalties.

4.4.2.2 STATE

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Public Resources Code [PRC] Section 5020.1[j]). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below.

According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 California Code of Regulations Section 4852[d][2]).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

PUBLIC RESOURCES CODE SECTIONS 5024 AND 5024.5

PRC Sections 5024 and 5024.5 provide the following guidance:

- 5024 (a–h): Describes the process of inventorying and evaluating state-owned historical resources in consultation with the State Historic Preservation Officer (SHPO).
- 5024.5 (a–g): Describes the process of identifying adverse effects and development of alternatives and mitigation for state-owned historical resources in consultation with, and as determined by, the SHPO.

Under PRC Sections 5024(f) and 5024.5, state agencies must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List (buildings, structures, landscapes, archaeological sites, and other nonstructural resources). Under PRC Section 5024(f), state agencies request the SHPO's comments on the project.

Under PRC Section 5024.5, it is the SHPO's responsibility to comment on the project and to determine if it may cause an adverse effect (PRC Section 5024.5), defined as a substantial adverse change in the significance of a historical resource (PRC Section 5020.1(q)). In this case, historical resources are defined as resources eligible for or listed in the NRHP and/or resources registered for or eligible for registering as a CHL.

CALIFORNIA HISTORICAL LANDMARKS

CHLs are buildings, structures, sites, or places that have been determined to have statewide historical significance by meeting at least one of the criteria listed below (OHP 2023).

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

The resource also must have written consent of the property owner, be recommended by the State Historical Resources Commission, and be officially designated by the Director of California State Parks. CHLs #770 and above are automatically listed in the CRHR (OHP 2023).

CALIFORNIA ENVIRONMENTAL QUALITY ACT

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5[b]). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5[a]). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5[a]).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1[q]).

In turn, CEQA Guidelines section 15064.5(b)(2) states the significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC,

unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a], [b], and [c]).

PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2[a]; CEQA Guidelines Section 15064.5[c][4]). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Section 21074[c], 21083.2[h]), further consideration of significant impacts is required. CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

CALIFORNIA STATE ASSEMBLY BILL 52

Assembly Bill (AB) 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that Tribal Cultural Resources (TCR) must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe. A TCR is either:

- On the California Register of Historical Resources or a local historic register; Eligible for the California Register of Historical Resources or a local historic register; or
- 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 Section 5024.1.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that

may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2(a)). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3(a)).

CALIFORNIA HEALTH AND SAFETY CODE

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Health and Safety Code Section 7050.5b). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5c). The NAHC would notify the most likely descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

4.4.2.3 UNIVERSITY OF CALIFORNIA, BERKELEY

UC BERKELEY CAMPUS DESIGN STANDARDS

UC Berkeley created the Campus Design Standards, which are updated every three years, to guide design and construction professionals to complete lasting, high-quality additions to the UC Berkeley built environment. The Campus Design Standards, along with applicable codes, ensure that new construction and renovation projects at UC Berkeley integrate industry best practices and experience with existing campus buildings, infrastructure, grounds, and maintenance issues.

Relevant sections of the 2020 Campus Design Standards are summarized below:

- In the event that artifacts, human remains, or other cultural resources are discovered during construction, the Contractor shall protect the discovered items, cease work for a distance of 35 feet radius in the area, 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. Artifact recovery, if deemed appropriate, will be conducted during the period when construction activities are on hold.
- Development shall accommodate sites or areas of historical or archaeological significance. Approval shall be obtained before altering any archaeological, historical, or cultural resource eligible for, or listed on the National Register of Historic Places.

- If a utilities earthwork project is likely to affect a known cultural resource, mitigation shall be required by avoiding or reducing ground disturbance.

LONG RANGE DEVELOPMENT PLAN

Each campus in the UC system periodically prepares an LRDP, which provides a high-level planning framework to guide land use and capital investment in line with its mission, priorities, strategic goals, and enrollment projections. The purpose of an LRDP is to provide adequate planning capacity for potential population growth and physical infrastructure that may be needed to support future population levels on each UC campus. The LRDP does not mandate growth or the provision of new facilities. The current LRDP for UC Berkeley is the recently prepared and adopted 2021 LRDP (adopted in July 2021) that includes projected development needs through the academic year 2036-37. In terms of historic resources, LRDP Goal 1.4 calls UC Berkeley to "maintain and enhance the image and experience of the physical campus and support the continuing evolution of the UC Berkeley campus's notable and historic landscapes and architecture."

The land use element of the 2021 LRDP (UC Berkeley 2021a) identifies five land use zones that each contain potential areas of new development and redevelopment: Campus Park, Hill Campus West, Hill Campus East, Clark Kerr Campus, and City Environs. The project site is located within the Hill Campus West land use zone. The 2021 LRDP indicates that the Hill Campus West contains a combination of student housing, athletics, and recreation facilities and presents limited potential for development due to the steep terrain. New uses in the Hill Campus West would therefore be adapted predominately through the renovation, rehabilitation, expansion, or replacement of facilities already existing within the zone. The Hill Campus West contains three properties that are presently listed on the National Register of Historic Places: the Hearst Greek Theatre (constructed 1903, listed 1982), California Memorial Stadium (constructed 1923, listed 2006), and Philip Ernest Bowles Hall (constructed 1929, listed 1989). Land use objectives for the Hill Campus West include the following (UC Berkeley 2021a):

- Support and maintain the existing housing and campus life facilities in the Hill Campus West with selective renovation, expansion, or redevelopment on previously developed sites. Land uses in this zone should leverage its proximity to the Campus Park.
- Prioritize projects that improve the landscape and circulation in the area, and that address life-safety concerns, particularly those related to seismic safety and wildfire prevention.

UC BERKELEY CONTINUING BEST PRACTICES

UC Berkeley applies continuing best practices (CBPs) relevant to cultural resources as part of the project approval process. CBPs that are implemented as part of the proposed project are identified in Chapter 3, Project Description and provided in Appendix B, UC Berkeley Continuing Best Practices, of this Draft EIR. Applicable CBPs, which include both those implemented as part of the proposed project and those implemented as part of ongoing operations, are identified and assessed for their potential to reduce adverse physical impacts later in this section under Section 4.4.3, Impacts and Mitigation Measures.

4.4.2.4 LOCAL

As discussed in Chapter 3, Project Description, 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. As such, UC Berkeley will not consider local plans, policies and regulations in its evaluation of the environmental effects of the proposed 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. Local plans, policies, and regulations are not considered in the assessment of cultural resource impacts in this EIR, as they are not used by UC Berkeley as thresholds or standards of significance and are not warranted to provide context for the assessment of cultural resource impacts. Therefore, local plans, policies and regulations are not provided herein.

4.4.3 IMPACTS AND MITIGATION MEASURES

4.4.3.1 STANDARDS OF SIGNIFICANCE

The standards of significance used to evaluate the impacts of the proposed project related to cultural and tribal cultural resources are based on Appendix G of the CEQA Guidelines, as listed below. The proposed project would result in a significant impact if it would:

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 formal cemeteries.

D. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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:

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

    b. 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

E. In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to cultural and tribal cultural resources.

4.4.3.2 ANALYTICAL METHODS

RECORDS SEARCH, CONSULTATION, RESEARCH, AND SURVEYS

CHRIS Records Search

As part of archaeological resources evaluation completed for the 2021 LRDP EIR in June 2020, Archeo-Tec conducted the records search at the Northwest Information Center (NWIC) of the CHRIS, located at Sonoma State University (NWIC File No. 19-2167) (Archeo-Tec 2021). The search covered the project site, and a surrounding 0.50-mile buffer. The NWIC provided locational data for previously recorded archaeological resources, cultural resources site records, a summary of previous technical study coverage and related pertinent reports for review. In addition, the CHRIS search included a review of the NRHP, CRHR, California Inventory of Historic Resources, historical maps, and local inventories.

In July 2022, Dudek requested an additional CHRIS records search at the NWIC (NWIC File No. 22-0136) covering the project site, and a surrounding 0.25-mile buffer. The NWIC provided locational data for previously recorded cultural sites (archaeological and built environment historical resources), cultural resources site records, a summary of previous technical study coverage and related pertinent reports for review. In addition, the CHRIS search included a review of the NRHP, CRHR, California Inventory of Historic Resources, historical maps, and local inventories.

Native American Consultation

As indicated in Section 4.4.1.5, Cultural Resources, UC Berkeley notified all applicable tribes informing them of the proposed project, providing a project description and background, and requesting consultation pursuant to AB 52. No tribes responded to UC Berkeley with a request to consult on the project.

Built Environment Historical Resources – Summary of Background Research

The results of the CHRIS search specific to built environment resources indicate that nothing was located in the project site. Two previously recorded resources are present in the 0.25-mile buffer: the California Memorial Stadium (P-01-000043; Map ID 5) and the Dr. B. P. Wall House (P-01-005507; Map ID 6).

In addition to reviewing the CHRIS records search, materials were reviewed during the preparation of this EIR included the NRHP Registration Form: Panoramic Hill (Thomas and Drotos 2005); the BERD files organized by Alameda County that are listed in the Office of Historic Preservation (OHP) inventory throughout the State; and research conducted to write the historic context. Historical aerial photographs were also reviewed.

Field Surveys

Dudek archaeologist William Burns, MSc, RPA, conducted an intensive-level pedestrian archaeological survey of the API for archaeological resources on October 25, 2021. The archaeological survey exceeded the applicable Secretary of Interior Professional Qualifications and Standards for archaeological survey and evaluation. Transects were spaced no more than 15 meters apart. Evidence for archaeological deposits was opportunistically sought in any areas that were not already paved or developed. The area has been substantially disturbed from development, though there is some potential for existing development to have capped and preserved native soils at depth. No archaeological resources were observed.

Dudek architectural historian, Fallin Steffen, MPS, closely reviewed photos taken during the April 7, 2023 reconnaissance survey of the API for built environment historical resources. The survey focused on the built environment resources within the API, documenting viewsheds to and from the buildings and structures potentially impacted by the proposed project. Contextual view photos of the NRHP District were taken in order to properly assess potential project impacts to the Historic District as a whole. Fieldwork was documented using field notes, digital photography, and close-scale field maps.

4.4.3.3 IMPACT ANALYSIS

Impact CUL-1 Built Environment Historical Resources (Significance Standard A). The proposed project would not cause a substantial adverse change in the significance of a (built environment) historical resource. *(Less Than Significant)*

The following analysis addresses potential impacts to CEQA historical resources located in the API for built environment historical resources, which is limited to the Panoramic Hill Historic District (see Figure 4.4-2). The

proposed project is discussed below to determine if it may cause a substantial adverse change in the significance of a CEQA historical resource (14 CCR 15064.3) (see Section 4.4.2, Regulatory Framework, for additional information). Project construction and operation activities are considered significant if they cause physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource is materially impaired to the extent that the historical resource no longer exists or can no longer convey significance.

As described in Chapter 3, Project Description, UC Berkeley is proposing to renovate and improve the existing Cal Softball Field. The renovation plans would upgrade the existing softball facility to meet modern safety and competition standards in compliance with Title IX. There are no CEQA historical resources located within the project site. Therefore, no CEQA historical resources within the project site would be demolished or disturbed by the proposed project.

The NRHP listed Panoramic Hill Historic District, located adjacent to the project site, is an important example of an early twentieth century residential neighborhood representing the Arts and Crafts Movement, which is the first phase of the Bay Area Tradition in architecture. It constitutes the largest surviving concentration of Arts and Crafts-style residences in the City of Berkeley and is important for its ability to convey characteristics of the architectural style as designed by notable architects including Ernest Coxhead, Bernard Maybeck, Julia Morgan, Walter Steilberg, and others (historic significance is under Criterion C for architecture). The period of significance is 1901, when the first home was constructed, through 1950, which marks the date the neighborhood construction was largely completed. The boundary for the Historic District is limited to the lower, western elevations of Panoramic Hill, which is "…geographically distinguished by Strawberry Canyon to the north and Hamilton Gulch to the south. The hill's borders are naturally articulated. Situated in the East Bay Hills, the hillside's predominant orientation is west (Thomas and Drotos 2005)." The lower western elevations encompass 61 contributing and 18 noncontributing buildings including single and multi-family homes and ancillary buildings, 14 structures and landscape features including roads, paths, stairs and walls, and 1 fountain. The Historic District is considered a historical resource for the purposes of CEQA.

In order to retain its significance under architecture, the Panoramic Hill Neighborhood as a Historic District must retain the following physical attributes (character-defining features) as they relate to the integrity of workmanship, materials, design, location, setting, feeling, and association:

- Exhibits most construction methods, architectural details, and circulation patterns associated with the Historic District's period of significance, 1901 to 1950.
- Continues to function as a residential neighborhood.
- Setting on a hill with canyons to the north and south and a panoramic view to the west.
- Panoramic Way and other arterial roads: narrow, steep terrain, follows contour of hill.
- Maintains its original residential setting and location including the following features:
    - Public pathways and private walkways for pedestrian circulation.
    - Concrete retaining walls.
    - Fountain.
- Individual residences in the Panoramic Hill Neighborhood share the following general character-defining features associated with significance under architecture:
    - Single-family residences and associated structures designed in the Bay Area Tradition (Shingle, Bungalow/Craftsman, Mission/Spanish, Colonial Revival, and Beaux Arts styles) designed by master architects.
    - Naturally articulated boundaries.

- Relationship between natural and built environment.

There would be no physical impact to the Historic District as a result of construction or operation of the proposed project. The Historic District would therefore not sustain any physical damage as a whole or to individual contributing buildings or character-defining features as a result of the proposed project construction. Nor would project operation result in any physical impacts, as the project site boundary does not overlap with the Historic District. All project-related work and project operations are being proposed outside of the Historic District boundary. As such, none of the buildings, contributing elements, or character-defining features of the Historic District are proposed to be physically modified as a result of project construction or operation. As the proposed project is located outside the Historic District, it would not physically impair, damage, or modify any character-defining features within the Historic District. Furthermore, the proposed project is consistent with the present use of the existing softball field for Cal women's softball and Recreational Sports.

Potential changes to the Historic District are limited to the possible introduction of new light sources that may filter into the Historic District boundary once the proposed project is completed. The proposed project would result in up to 25 competitive games per year, an increase over the 15 to 20 games under existing conditions, and the installation of competition-grade lighting that meets NCAA standards, which would be used after dusk until 10:00 p.m. so that UC Berkeley can comply with Title IX. As such, this impact analysis focuses only on the potential for light and glare to potentially impact the historical significance of the architecture and the built environment in the adjacent Panoramic Hill Historic District and does not consider the impacts of light and glare on the occupants within the Historic District.

HLB Lighting Design prepared a lighting analysis to determine the current lighting levels of the existing Cal Softball Field lighting in comparison with the anticipated lighting levels of the proposed new softball field lighting (Appendix D). This study involved the identification of receptor sites at four locations around the project site from which vertical light spill and maximum intensity (glare) were measured. The location of receptor sites A and C are situated within the Historic District boundary and representative views from each site looking toward the project site suggests that the viewshed is largely occluded by existing trees and vegetation. The results of the field survey conducted by Dudek staff on April 7, 2023, confirmed that the view from the Historic District to the project site is largely, if not completely obscured by vegetation and foliage. The proposed project vertical light spill is estimated in Section 4.2, Aesthetics (Table 4.2-4) and Appendix D to be reduced compared to existing conditions at receptor site A and is estimated to be the same compared to existing conditions at receptor site C within the Historic District. Lighting glare may increase from baseline (Section 4.2, Aesthetics [Table 4.2-5] and Appendix D) at receptor sites A and C but would not be expected at levels that would materially impair the Historic District and would be below the thresholds of significance for glare identified in the report. Further, the analysis of glare conservatively assumes no reduction in glare based on obstructions from mature trees and vegetation between the lights and receptors. Therefore, the proposed project is not anticipated to create a new source of substantial light or glare (see Appendix D and Section 4.2, Aesthetics).

The Historic District's historical significance is not contingent upon retaining a setting that hides all evidence of adjacent uses or that allows no artificial light to penetrate the dense tree cover that separates the Historic District from the athletic fields. Rather, the District's essential elements of setting are the way in which the district's architecture connects to the landscape, topography, and nature. This larger and more significant setting would not change due to the proposed project. The Historic District would continue to maintain its relationship between the natural and the built environment regardless of the proposed project improvements.

Furthermore, both the proposed renovated softball field, and the Historic District would remain in their respective locations. While the proposed project would introduce new, larger-scale elements at the Cal Softball Field, including taller

light poles, a larger score board, and a two-story building, these new elements (all outside of the Historic District boundary) would not prevent the Historic District from conveying significance of any of its important features (listed above) that make it eligible for listing in the NRHP. Additionally, the proposed project would not have indirect or secondary effects on the Historic District, as it would not have growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate that would impact the Historic District.

In consideration of these factors, construction and implementation of the proposed project would not result in impacts to the Panoramic Hill Neighborhood as a Historic District and the District's ability to convey significance would remain intact, both as individual contributing resources, and as a cohesive Historic District overall. Therefore, following proposed project construction and during project operations, the Historic District would still retain significance under architecture as an exemplary example of a residential neighborhood representing the Arts and Crafts Movement, with the largest surviving concentration of Arts and Crafts-style residences in the City of Berkeley (historic significance is under architecture). All of the Historic District's physical attributes (character-defining features) would remain intact and the Historic District would continue to exhibit a high degree of historic integrity to its period of significance 1901 to 1950 including workmanship, materials, design, location, setting, feeling, and association. Consequently, the proposed project would not cause a substantial adverse change in the significance of a (built environment) historical resource and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to built environment historical resources, and therefore, no mitigation measures are required.

Impact CUL-2 Archaeological Resources (Significance Standard B). The proposed project may cause a substantial adverse change in the significance of unique archaeological resources or historical resources of an archaeological nature. *(Potentially Significant)*

No archaeological sites have been previously recorded within the API (see Figure 4.4-1). A previous NWIC records search (Archeo-Tec 2021) and archaeological survey did not result in the identification of known archaeological resources within areas that would be affected by the proposed project. The area appears to have a moderate potential for supporting the presence of buried and/or unanticipated archaeological resources. Archaeological resources that meet the definition of a historical resource under CEQA Section 21084.1 or CEQA Guidelines Section 15064.5 could be present within the API and could be damaged or destroyed by ground-disturbing construction activities, such as site preparation, grading, excavation, or trenching for utilities for the proposed project. 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.

Implementation of the UC Berkeley Campus Design Standards, described in Section 4.4.2, Regulatory Framework, require that in the event that artifacts 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. Artifact recovery, if deemed appropriate, would be conducted. However, given that the proposed project is located in an area with moderate potential for supporting the presence of buried and/or unanticipated archaeological resources and that the project would include substantial ground-disturbing activities, impacts would be considered *potentially significant*.

Significance without Mitigation: Potentially significant.

MITIGATION MEASURES

MM CUL-1: For project ground-disturbing activities (including, but not limited to, soil removal, parcel grading, new utility trenching, and foundation-related excavation), UC Berkeley shall implement the following measures to ensure impacts to archaeological resources will be less than significant:

- 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 of the project (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 within 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 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, the 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 lead agency for regulatory compliance, California Historic Resources Information System Northwest Information Center, and the State Historic Preservation Office, if required.

Significance with Mitigation: Less than significant. Implementation of MM CUL-1 would avoid a substantial adverse change in the significance of unique archaeological resources, or historical resources of an

archaeological nature by requiring: notification of contractors regarding the procedures to implement if previously undiscovered cultural resources are discovered during construction; cessation of soil disturbing work if a resource is discovered during construction; determination by a qualified archaeologist about whether the resource qualifies as an unique archaeological resource or a historical resource of an archaeological nature; consultation with the appropriate tribe if the resource is a tribal cultural resource; avoidance, if feasible, if resources are determined to be significant; and appropriate data recovery and permanent curation of recovered materials if avoidance is not feasible. Therefore, implementation of MM CUL-1 would reduce the potentially significant impact of the proposed project on unique archaeological resources or historical resources of an archaeological nature to *less than significant*.

Impact CUL-3 Human Remains (Significance Standard C). The proposed project may disturb human remains interred outside of dedicated cemeteries. *(Less Than Significant)*

Human remains associated with precontact archaeological deposits could exist in the study area and could be encountered during ground-disturbing activities, such as site grading and trenching for utilities. Such activities 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, Public Resources Code Section 5097.98, and the California Code of Regulations Section 15064.5(e) (CEQA), which state the mandated procedures of conduct following the discovery of human remains.

Additionally, as part of the proposed project, UC Berkeley would implement the cultural (CUL) CBP listed here (see also Appendix B):

- **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.

Because CBP CUL-1 would follow established procedures for minimizing impacts to human remains, the proposed project would not result in impacts to human remains. In addition, the UC Berkeley Campus Design Standards indicate 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 impacts to human remains would be *less than significant*.

Significance without Mitigation: Less than significant.

MITGATION MEASURES

As described above, the proposed project would not result in significant impacts related to human remains, and therefore, no mitigation measures are required.

Impact CUL-4 Tribal Cultural Resources (Significance Standard D). The proposed project may result in a substantial adverse change to a tribal cultural resource. *(Potentially Significant)*

As previously described in Section 4.4.2, Regulatory Setting, a TCR is defined under AB 52 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 (PRC Section 21074(a)(1) and (2)).

As indicated in Section 4.4.3.2, Analytical Methods, UC Berkeley notified all applicable tribes on November 9, 2022, informing them of the proposed project, providing a project description and background, and requesting consultation pursuant to AB 52. On October 24, 2023, Corrina Gould of the Confederated Villages of Lisjan responded stating the tribe has no information to supply about the proposed site and requested to be contacted if there are any findings. No other tribes responded to UC Berkeley with a request to consult on the project or with information about a known tribal cultural resource. However, it is possible that undisturbed and unknown tribal cultural resources, including Native American human remains and artifacts, could exist below the ground surface on the project site and therefore such resources could be disturbed during ground disturbing activities associated with project construction.

Compliance with existing federal and State laws and regulations pertaining to tribal cultural resources, such as those described under Section 4.4.2, Regulatory Setting, would protect unrecorded tribal cultural resources in the study area by providing for the early detection of potential resources during construction, and by preventing or minimizing the material impairment of the archaeological deposits to convey their significance. As part of the proposed project, UC Berkeley would implement the CBP CUL-1 (see Impact CUL-3). CBP CUL-1 would ensure that appropriate procedures are followed in order to minimize potential impacts to human remains during ground disturbing activities of the proposed project.

Pursuant to the UC Berkeley Campus Design Standards described in Section 4.4.2, Regulatory Setting, in the event that artifacts 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. Artifact recovery, if deemed appropriate, would be conducted.

While CBP CUL-1 and Campus Design Standards would ensure impacts to Native American human remains and discovery of unearthed artifacts would be reduced, unknown artifacts or other tribal cultural resources that are not Native American human remains could exist in the study area and could be disturbed by ground disturbing activities such as excavation. Such impacts would be *potentially significant*.

Significance without Mitigation: Potentially significant.

MITGATION MEASURES

MM CUL-1 See Impact CUL-2 above for a description of this measure.

Significance with Mitigation: Less than significant. Implementation of MM CUL-1 would avoid a substantial adverse change to a tribal cultural resource by requiring: notification of contractors regarding the procedures to implement if previously undiscovered cultural resources are discovered during construction; cessation of soil disturbing work if a resource is discovered during construction; determination by a qualified archaeologist in consultation with the appropriate tribe about whether the resource qualifies as a tribal cultural resource; avoidance, if feasible, if resources are determined to be significant; and appropriate data recovery and permanent curation of recovered materials if avoidance is not feasible. Therefore, implementation of MM CUL-1 would reduce the potentially significant impact of proposed project on tribal cultural resources to *less than significant*.

Impact CUL-5 Cumulative Cultural Resource and Tribal Cultural Resource Impacts (Significance Standards A through D). The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact related to cultural resources and tribal cultural resources. *(Less than Significant)*

This section provides an evaluation of cumulative cultural (archaeology and built environment) and tribal cultural resources impacts associated with the proposed project and past, present, and reasonably foreseeable future projects, as identified in Table 4.1-1 in Section 4.1, Introduction to Analysis, and as relevant to this topic.

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or multiple separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (14 CCR 15355[a]-[b]). For cumulative impacts, if any exist, they would be coincident with cultural resources identified in the API (Figures 4.4-1 and 4.4-2) for direct effects, indirect effects, or both because in order for a cumulative impact to exist, a significant archaeological or historical resource must first be directly or indirectly affected by the proposed project. For historical resources (built environment) as detailed in Impact CUL-1, the NRHP listed Panoramic Hill Historic District would not sustain project construction or operational impacts as such cumulative impacts to this CEQA historical resources would be less than significant.

Project impacts to unique archaeological resources, historical resources of an archaeological nature, human remains, and tribal cultural resources (Impact CUL-2, Impact CUL-3, and Impact CUL-4) potentially present on the project site would be mitigated to less than significant with the implementation of MM CUL-1 (archaeological and tribal cultural resources). This mitigation measure would reduce impacts to individual resources on the project site if discovered during construction. In addition, since the proposed project is located on existing developed sites, this reduces the likelihood of encountering potential archaeological and tribal cultural resources or human remains on-site unless ground disturbance activities excavate to a greater extent than occurred during prior construction on the project site. However, the potential exists for previously unknown cultural resources to be encountered during ground disturbing activities on the project site.

Table 4.1-1 in Section 4.1, Introduction to Analysis, identifies cumulative development within the City of Berkeley, UC Berkeley, and Lawrence Berkeley National Laboratory that may be implemented. Development from these projects could result in impacts to known or unknown cultural and/or tribal cultural resources, or human remains. The construction from cumulative development could involve ground disturbance below the level of previous ground

disturbance that could result in the discovery of archaeological resources or human remains. While the regulations and practices described above for the protection of cultural resources and mitigation measures similar to those for the proposed project would be implemented with cumulative development, such development has the potential to result in significant cumulative impacts related to cultural and tribal cultural resources.

With the implementation of MM CUL-1, the proposed project would not have a considerable contribution to significant cumulative impacts related to unique archaeological resources, historical resources of an archaeological nature, and tribal cultural resources. As such, the cumulative impact of the proposed project related to historical (built environment), archaeological resources and tribal cultural resources would be *less than significant*.

4.5 NOISE

This section describes the existing noise conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project and cumulative noise and vibration impacts, and identifies mitigation measures for any significant or potentially significant noise and vibration impacts related to implementation of the UC Berkeley Cal Softball Field Renovation Project (project or proposed project). The analysis is based on sound pressure level measurements to characterize the existing environment and sporting fields, along with noise modeling, as further described in Section 4.5.1, Environmental Setting. The results of the noise measurements and modeling are summarized in this section and included in Appendix G.

4.5.1 ENVIRONMENTAL SETTING

4.5.1.1 NOISE DESCRIPTORS

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 the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A 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.
- **Equivalent Continuous Noise Level (L_{eq}).** The mean of the noise level, energy averaged over the measurement period.
- **L_{max}.** The maximum noise level during a measurement period.
- **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). This is also 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 called 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."
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the sound levels occurring over a 24-hour period, with a 10 dB offset (penalty) added to the hourly average noise levels from 10:00 p.m. to 7:00 a.m. The nighttime offset is intended to aid in accounting for typical ambient/background environmental sound levels being lower during the nighttime when an introduced sound may be more noticeable.
- **Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels during a 24-hour period, with 5 dB added to the hourly average noise levels from 7:00 p.m. to 10:00 p.m. and 10 dB added to the hourly average noise levels from 10:00 p.m. to 7:00 a.m. Note: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered equivalent/interchangeable.
- **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.
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is one microinch per second ($1x10^{-6}$ in/sec).

4.5.1.2 ACOUSTIC FUNDAMENTALS

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels which de-emphasizes the low frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of dBA. Table 4.5-1 provides references for the a-weighted sound level of typical sources in the home and environment.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dB increase in the noise level. Changes in a community noise level of less than 3 dB are not typically noticed by the human ear under normal, quiet outdoor conditions, and changes of 1 to 3 dB are detectable only under quiet, controlled conditions (e.g., indoors with a limited number of sound sources). A 5 dB increase is readily noticeable (Caltrans 2013). The human ear perceives a 10 dB increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment. The background, or ambient, noise level gradually changes throughout a typical day, corresponding to distant noise sources, such as traffic volume, as well as changes in atmospheric conditions.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. In order to evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, wherein noise measurements are weighted, added, and averaged over a 24-hour period to reflect magnitude, duration, frequency, and time of occurrence. A complete definition of CNEL and other terminology used to describe noise is provided in Section 4.5.1.1, Noise Descriptors.

TABLE 4.5-1. TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA) Leq	Common Indoor Activities
Onset of physical discomfort	120+	
	115	
	110	Rock Band (near amplification system)

TABLE 4.5-1. TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA) Leq	Common Indoor Activities
Jet Flyover at 1,000 feet	105	
	100	
Gas Lawn Mower at 3 feet	95	
	90	
Diesel Truck at 50 feet, 50 mph	85	Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime	75	
	70	Vacuum Cleaner at 10 feet
Commercial Area	65	Normal Speech at 3 feet
Heavy Traffic at 300 feet	60	
	55	Large Business Office
Quiet Urban Area, Daytime	50	Dishwasher Next Room
	45	
Quiet Urban Area, Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Area, Nighttime	35	
	30	Library
Quiet Rural Nighttime	25	Bedroom at Night, Concert Hall (Background)
	20	
	15	Broadcast/Recording Studio
	10	
	5	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans) 2013.

OUTDOOR NOISE BEHAVIOR (SOUND REDUCTION OVER DISTANCE)

Noise sources are classified in two forms: (1) point sources (such as stationary equipment; or a group of construction vehicles and equipment working within a spatially limited area at a given time; or an athletic event with associated spectators that remain at a fixed location such as an athletic field or stadium), and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dB for each doubling of distance from the source to the receptor at acoustically "hard" sites and at a rate of 7.5 dB for each doubling of distance from source to receptor at acoustically "soft" sites. Sound generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dB and 4.5 dB per doubling of distance, for hard and soft sites, respectively. Sound levels can also be attenuated by man-made or natural barriers. For the purpose of a sound attenuation analysis, a "hard" or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt or concrete ground surfaces, as well as very hard-packed soils. An acoustically "soft" or absorptive site is characteristic of unpaved loose soil or vegetated ground.

NOISE REDUCTION FROM BARRIERS AND BUILDINGS

Sound levels can also be attenuated by human-made or natural barriers. Solid walls, berms, or elevation differences typically reduce noise levels in the range of approximately 5 to 15 dBA (Caltrans 2020). Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The outside-to-inside noise attenuation provided by typical structures in California ranges between 17 to 30 dBA with open and closed windows, respectively, as shown in Table 4.5-2.

TABLE 4.5-2. OUTSIDE-TO-INSIDE NOISE ATTENUATION (DBA)

Building Type	Open Windows	Closed Windows
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/offices/hotels	17	25
Theaters	17	25

Source: Transportation Research Board, National Research Council 1974.
Notes: dBA = A-weighted decibel. As shown, structures with closed windows attenuate exterior noise by a minimum of 25 to 30 dBA.

4.5.1.3 NEGATIVE EFFECTS OF NOISE ON HUMANS

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases, and the acceptability of the environment for people decreases. This decrease in acceptability and the threat to public well-being is the basis for land use planning policies directed towards the prevention of exposure to excessive community noise levels. Hearing loss can occur at the highest noise intensity levels. Hearing loss, one of the more severe consequences of exposure to elevated noise, and annoyance which can result from exposure to various noise sources and levels, ae described in greater detail below.

Hearing Loss. While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter, or ear protection is prescribed.

Annoyance. Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be some disagreement about the relative annoyance of these different sources. A noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance (FICON 1992).

Sleep Disturbance. Uninterrupted sleep is a prerequisite for good physiological and mental functioning, and the primary effects of sleep disturbance are: difficulty in falling asleep; awakenings and alterations of sleep stages or depth; increased blood pressure, heart rate and finger pulse amplitude; vasoconstriction; changes in respiration; cardiac arrhythmia; and increased body movements. The difference between the sound levels of a noise event and background sound levels, rather than the absolute noise level, may determine the reaction probability. The probability of being awakened increases with the number of noise events per night. The secondary, or after-effects, the following morning or day(s) are: reduced perceived sleep quality; increased fatigue; depressed mood or well-being; and decreased performance.

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding the health effects of noise impacts because European nations have continued to study noise and its health effects, while the United States Environmental Protection Agency (USEPA) all but eliminated its noise investigation and control program in the 1970s. According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability of people to initially fall asleep (Berglund et al. 1999).

The WHO recommends that for work which must be conducted during nighttime, it should be governed by an 8–hour L_{eq} of 45 dBA; an additional criterion of 60 dBA L_{max} throughout this 8–hour period is also recommended for discrete or single-noise events. The criteria are to be applied at the exterior façade of any occupied residence that could be impacted by the nighttime noise generation (Berglund et al. 1999).

Physiological Functions. In workers exposed to noise, and in people living near airports, industries and noisy streets, noise exposure may have a large temporary, as well as permanent, impact on physiological functions. After prolonged exposure, susceptible individuals in the general population may develop permanent effects, such as hypertension and ischemic heart disease associated with exposure to high sound levels. The magnitude and duration of the effects are determined in part by individual characteristics, lifestyle behaviors and environmental conditions. Sounds also evoke reflex responses, particularly when they are unfamiliar and have a sudden onset (Berglund et al. 1999).

Other Potential Health Impacts. Other potential health effects of high noise levels identified by WHO include decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often by workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, for example, exposure several times a year to concert noise at 100 dBA, can also damage hearing). Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA (Berglund et al. 1999).

4.5.1.4 VIBRATION FUNDAMENTALS

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. The response of humans to vibration is very complex. However, it is generally accepted that human response is best approximated by the vibration velocity level associated with the vibration occurrence.

Heavy equipment operation, including stationary equipment that produces substantial oscillation or construction equipment that causes percussive action against the ground surface, may be experienced by building occupants as perceptible vibration. It is also common for ground-borne vibration to cause windows, pictures on walls, or items on shelves to rattle; this generation of noise from transfer of groundborne vibration to structural elements (with audible components) is termed groundborne noise. Although the perceived vibration from such equipment operation can be intrusive to building occupants, the vibration is seldom of sufficient magnitude to cause even minor cosmetic damage to buildings.

When evaluating human response, ground-borne vibration is usually expressed in terms of root mean square (RMS) vibration velocity. RMS is defined as the average of the squared amplitude of the vibration signal. As for sound, it is common to express vibration amplitudes in terms of decibels defined as:

$$L_v = 20 \log \left(\frac{v_{rms}}{v_{ref}} \right)$$

Where v_{rms} is the RMS vibration velocity amplitude in inches/second (in/sec) and v_{ref} is the decibel reference of $1x10^{-6}$ in/sec.

To avoid confusion with sound decibels, the abbreviation VdB is used for vibration decibels. The vibration threshold of perception for most people is around 65 VdB (equivalent to 0.0018 in/sec RMS). Vibration levels in the 70 to 75 VdB range are often noticeable, but generally deemed acceptable, and levels in excess of 80 VdB are often considered unacceptable (FTA 2018).

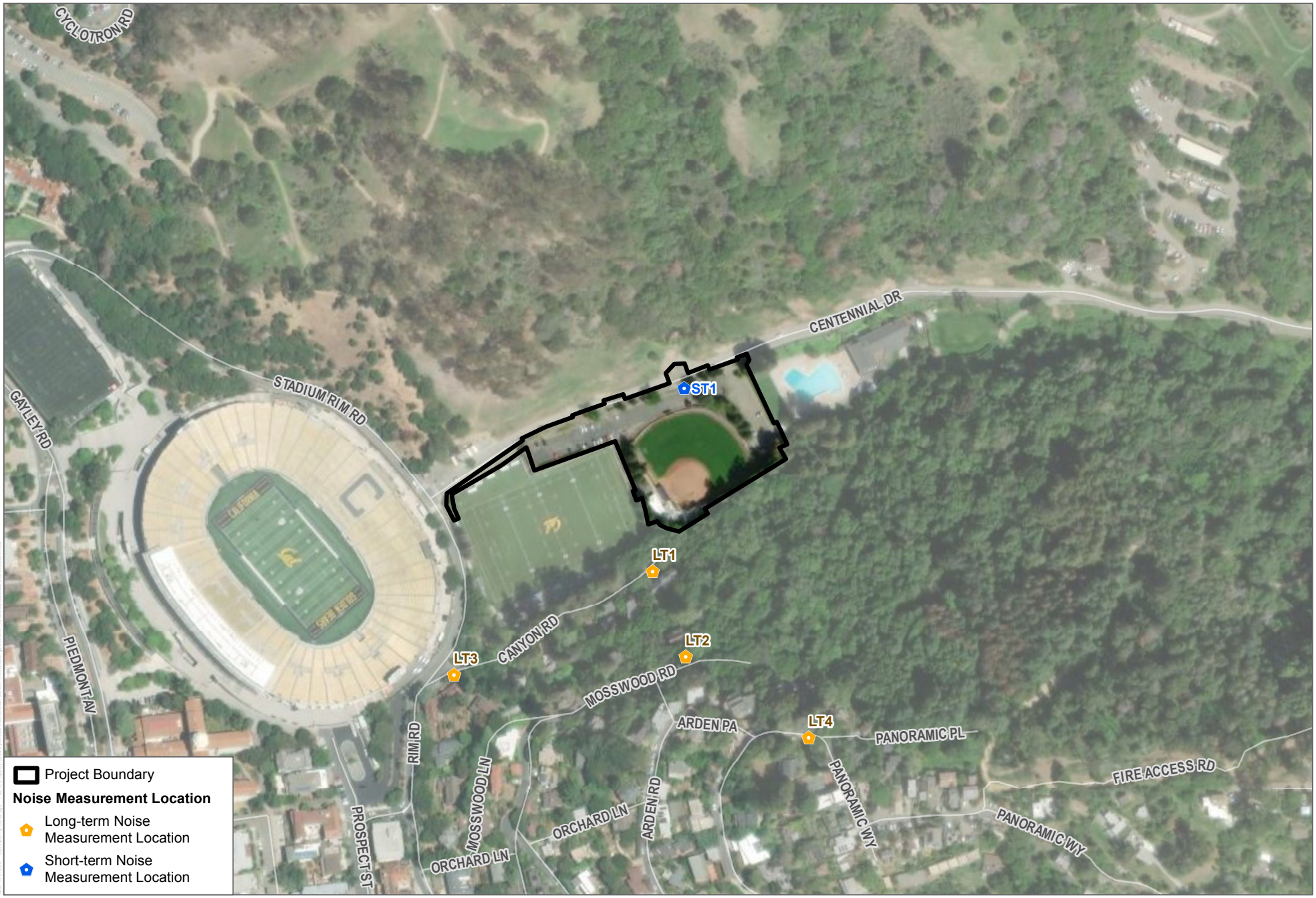
Vibration impacts to buildings are generally discussed in terms of peak particle velocity (PPV) that describes particle movement over time (in terms of physical displacement of mass, expressed as in/sec). Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving and soil compacting, grading activity has the greatest potential for vibration impacts if large bulldozers, large trucks, or other heavy equipment are used. A conservative maximum vibration level standard is 0.2 in/sec PPV for the prevention of structural damage to typical residential buildings, while 0.12 in/sec PPV is applied to historic structures that are considered more fragile (FTA 2018).

4.5.1.5 EXISTING NOISE ENVIRONMENT

In order to characterize the existing ambient noise environment in the vicinity of the project site, Dudek completed a series of long-term (i.e., 24-hour or more in duration) sound level measurements in the vicinity of existing noise-sensitive land uses that have the potential to be impacted by project-related noise. Dudek also completed one short-term sound level measurement (i.e., less than one hour in duration) adjacent to the primary roadway in the immediate project vicinity that could receive project-related trips, in order to calibrate the traffic noise model. The location of sound level measurements for the ambient noise survey are depicted in Figure 4.5-1. Noise sensitive uses are described below and shown in Figure 4.5-2, following a summary of the noise measurement survey.

AMBIENT NOISE SURVEY

Existing noise levels were measured at four representative locations in the project vicinity to establish baseline noise conditions to compare to project operational noise levels; the four (4) long-term noise measurement locations are designated LT1 – LT4 on Figure 4.5-1. Sound-level measurements were performed for a duration of 48-hours using SoftdB Piccolo II sound level meters (SLMs) that meet or exceed the American National Standards Institute (ANSI) Type 2 sound level meters (SLMs) with an accuracy of ±1 dB, over a frequency range of 20 Hz to 8 kHz. ANSI Type 2 SLMs are considered to have sufficient accuracy to be used for a wide variety of sound measurement types, including environmental noise evaluations such as for the proposed project. The SLMs received a laboratory calibration within the preceding 24-months, with calibration traceable through the National Institute of Standards and Technology. Field calibrations were performed before and after the measurement periods using a Reed Instruments Model 8090 acoustical calibrator.



SOURCE: ESRI World Imagery 2018

DUDEK

0 150 300 Feet

FIGURE 4.5-1

Ambient Noise Measurement Locations

UC Berkeley Cal Softball Field Renovation Project

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Table 4.5-3 summarizes the dates and beginning/end times for the 48-hour measurements, broken into 24-hour reporting periods, the average hourly noise levels for the daytime and nighttime periods, as well as the calculated 24-hour day/night noise level (L_{dn}) accounting for A-weighting and nighttime penalties. The average noise level (L_{eq}) is generally a good representation of sound as experienced by a human and is also the metric used in the municipal code sound limits; in addition, when discussing sound level increases, the average sound level is used. Therefore, documenting ambient sound levels in L_{eq} is appropriate and necessary. On the other hand, typically noise element policies in a General Plan for exterior noise exposure are based on the day-night average (L_{dn}), which is calculated by adding a 10 dBA penalty to the recorded hourly L_{eq} for each of the hours between 10 p.m. and 7 a.m., and then averaging these adjusted hourly L_{eq} values with the recorded hourly L_{eq} values for the other 15 hours of the 24-hour period. Elevated noise levels occurring in the nighttime period can lead to an L_{dn} value that is greater than the average noise levels during the daytime or nighttime periods, due to the addition of the 10 dBA penalties on top of the actual noise levels. See Appendix G for data logs for each of the 48-hour measurement periods and the calculation of L_{dn} from the recorded hourly average values.

TABLE 4.5-3. EXISTING AMBIENT NOISE MEASUREMENT RESULTS

Location	Dates	Start / Stop	Daytime (7 a.m.–10 p.m.) Leq, dBA	Nighttime (10 p.m.–7 a.m.) Leq, dBA	Ldn, dBA
LT1	4/15 – 4/16/22	11 AM – 11 AM	63.8	55.9	65
	4/16 – 4/17/22	11 AM – 11 AM	63.5	47.7	62
LT2	4/15 – 4/16/22	11 AM – 11 AM	58.8	54.3	62
	4/16 – 4/17/22	11 AM – 11 AM	57.5	47.6	57
LT3	4/15 – 4/16/22	11 AM – 11 AM	55.0	55.4	62
	4/16 – 4/17/22	11 AM – 11 AM	55.0	46.6	56
LT4	4/15 – 4/16/22	11 AM – 11 AM	54.5	54.3	61
	4/16 – 4/17/22	11 AM – 11 AM	54.7	48.7	57

Source: Measured by Dudek 2022.
Notes: dBA = A-weighted sound level in decibels; L_{eq} = Energy-equivalent average noise level, typically measured over a duration ranging from 10-minutes to 1-hour; L_{dn} = 24-hour Day/Night noise level, with 10 dBA weighting penalty added for sounds occurring during the nighttime hours of 10 PM to 7 AM.

Monitoring locations LT1–LT4 were located adjacent to existing noise-sensitive residential land uses in the vicinity of the project site. Locations LT1 and LT3 were adjacent to residential receptors off Canyon Road, LT2 was located off Mosswood Road, and LT4 was located near the noise-sensitive residential land uses off Panoramic Way. The existing L_{dn} values documented at the four (4) long-term noise measurement locations have exterior noise exposure levels that are within the limits of what has been deemed "acceptable" for residences under both Berkeley and Oakland General Plans.

During the long-term monitoring period, which began on Friday, April 15, 2022, and extended through Sunday, April 17, 2022, softball games were noted to occur (Cal vs. Stanford) beginning on Friday, April 15th at 2:05 p.m. through 5:25 p.m., and on April 16th at 2:05 p.m. through 4:11 p.m.; also on April 16, 2022, a rugby game (West Region National Quarterfinals vs. Central Washington) was played from noon until 1:45 p.m. at the adjacent Witter Rugby Field. Attendance at the April 15, 2022, game was 444 spectators, and at the April 16, 2022, game was 785 spectators. No softball game or rugby match occurred on the Sunday during this measurement period. It should be noted that the Cal vs. Stanford softball games are typically the best attended of the season, and therefore represent the highest sound levels associated with the existing softball facility. During the 48-hour ambient sound level monitoring, and to some extent due to typical elevated roadway traffic noise levels resulting from increased traffic volumes known to regularly occur on days leading up to weekends and holidays, elevated traffic noise levels can be seen in the sound level data documented at the ambient noise monitoring locations with more exposure to the

regional roadways (e.g., I-80/880/580, CA SR-24, CA SR-123, CA SR-13). Additionally, the hourly sound level data reflects elevated sound levels leading up to, during, and immediately following the timeframes within which athletic events are known to have occurred (softball and rugby games/tournaments); the sound levels documented during the short-term measurements are used to correlate and evaluate the sound levels at representative prediction receivers used in the project impact analysis. In other words, the sound levels measured at LT1 – LT4 during the April 15th softball game (444 spectators) and during the April 16th softball game (785 spectators) were used to calibrate or validate the three dimensional predictive sound model used to evaluate the existing and proposed project softball field operational noise. This process involves entering a noise source level for the given spectator quantity (from research literature) into the model, and comparing the model predicted noise level at LT1 – LT4 against the actual recorded noise levels at these locations. The noise levels at LT1 – LT4 during the April 16th rugby match, which did not overlap with the softball game occurrence, were used to determine typical rugby match noise contributions at these same locations.

TRAFFIC NOISE

To characterize existing noise levels along the principal roadway adjacent to the project site, Dudek conducted a short-term sound level measurement along Centennial Drive. The daytime, short-term (typically performed for 1 hour or less) attended sound level measurement was conducted with a SoftdB Piccolo II SLM. As was performed during the long-term monitoring, field calibration of the SLM was performed before and after the measurement period to aid in assuring proper setup of the measurement system and the integrity of the system across the measurement period. The short-term traffic noise measurement was conducted with the microphone positioned approximately five (5) feet above ground level and away from any nearby surfaces that would potentially result in sounds being reflected into the microphone/SLM, contaminating the sampled sound levels.

Dudek selected the short-term noise measurement location (ST1) adjacent to Centennial Drive, just north of the project site, to characterize noise levels from vehicular surface transportation sources. The results cataloged at short-term measurement location ST1 are presented in Table 4.5-4 in terms of the measured average noise levels and concurrent vehicle-classification traffic count data and also depicted as ST1 in Figure 4.5-1. Noise measurement data is also included in Appendix G.

TABLE 4.5-4. MEASURED AVERAGE TRAFFIC SOUND LEVEL AND MANUAL TRAFFIC COUNT RESULTS

Site	Traffic Noise Source	Date	Time	LEQ	Cars	MT1	HT2
ST1	Centennial Drive – approximately 18-feet from roadway centerline	4/16/2022	3:45 – 4:00 PM	**71 dBA**	46	1	–

Source: Measured by Dudek 2022.

Notes: dBA = A-weighted sound level in decibels; Leq = Energy-equivalent average noise level, typically measured over a duration ranging from
1 10-minutes to 1-hour. Temperature 57 degrees Fahrenheit, partly cloudy, and an average wind of 4 miles per hour (mph) out of the west.
2 Medium Trucks (trucks with a maximum of two (2) axles, six (6) tires, and a gross vehicle weight rating (GVWR) generally between 9,900 and 26,400 pounds).

Heavy Trucks (trucks/vehicles with two (2) or more axles, and a gross vehicle weight rating generally 26,400 pounds).As shown in Table 4.5-4, the measured sound level for the duration of the measurement period was approximately 71 dBA L_{eq}. The sound levels documented during the short-term monitoring would also be representative of daytime hourly sound levels at the measurement site, and at other locations with similar environments, vehicle classifications, and setback distances from Centennial Drive. Measurement site ST1 was located approximately 18-feet south of the Centennial Drive roadway centerline and 28-feet west of the midpoint of the nearby pedestrian crosswalk.

Based on the short-term measurement and concurrent vehicle-classification counts performed for calibration of the traffic noise model, existing annual average daily traffic (ADTs) volumes developed for the proposed project (Fehr & Peers 2019), and the trip generation rates developed by the Dudek transportation team (refer to Section 4.6, Transportation), Dudek modeled the existing 24-hour traffic noise levels at a reference distance of 50 feet from the centerline of Centennial Drive to be approximately 60 dBA Ldn/CNEL.

NOISE-SENSITIVE LAND USES

Land uses designated as the most noise-sensitive typically include residences, motels and hotels, hospitals, and nursing homes, as spaces where relaxation and sleep are essential, which can be interrupted or prevented via elevated noise exposure. Land uses considered noise-sensitive in the vicinity of the project site are described below. The residential neighborhoods closest to the softball field are within the City of Berkeley and designated for multi-family residential (R-2H, R-3H, R-5H, which have a daytime limit of 60 dBA L_{eq}), and ES-R zoning (environmental safety residential, with a daytime limit of 55 dBA L_{eq}), based on the City of Berkeley Municipal Code (see Table 4.5-6 in Section 4.5.2, Regulatory Framework for additional information). The ES-R zoning applies to the area generally bounded by Canyon Road on the south and west, to Smythe Road on the north, to the City limits on the east (residences closest to the Project site). The nearest noise-sensitive land uses within the City of Oakland are in a residential neighborhood zoned RH-2/S-9 (single family residential with fire safety protection overlay, which has a daytime limit of 60 dBA L_{eq}) that are further east and southeast of the residential neighborhoods in Berkeley, off Canyon Road, Mosswood Road, Arden Way, Panoramic Place and Panoramic Way.

Noise-sensitive land uses nearest the project site include residences to the southwest, south, and southeast of the softball field. The closest residence is at the eastern terminus of Canyon Road, approximately 90 feet from the boundary of the softball field; other residences along Canyon Road are at distances between approximately 180 and 525 feet from the softball field. Residences along Mosswood Road are located at distances between approximately 220 and 700 feet to the southwest. The closest residence on Arden Way is approximately 370 feet to the south, the closest residence on Panoramic Way is approximately 500 feet to the south. The closest residence to the softball field in the City of Oakland is located approximately 1,020 feet southeast. Figure 4.5-2 illustrates the noise-sensitive land uses in the vicinity of the project site.

VIBRATION

Vibration sources in most communities are limited to railroad operations, truck routes, and industrial facilities that incorporate massive machinery with rotating or percussive elements. These sources do not exist in the vicinity of the project site, and therefore background vibration levels are expected to be less than 65 VdB.

4.5.2 REGULATORY FRAMEWORK

Applicable federal, state, UC, and local regulations related to noise are provided in this section.

4.5.2.1 FEDERAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

The USEPA has determined that over a 24-hour period, exposure to an L_{eq} of 70 dBA will result in some hearing loss. Interference with activity and annoyance will not occur if exterior levels are maintained at a L_{eq} of 55 dBA and interior levels are maintained at or below 45 dBA L_{eq}. While these levels are relevant for planning and design and

useful for informational purposes, they are not land use planning criteria because they do not consider economic cost, technical feasibility, or the needs of the community; therefore, they are not mandated.

In consideration of the difficulty of achieving a goal of 55 dBA L_{dn} as an exterior noise level exposure standard, most federal and California agencies have settled on 65 dBA L_{dn} level as their standard. At 65 dBA L_{dn}, activity interference is kept to a minimum, and annoyance levels are still low. 65 dBA L_{dn} as an exterior exposure standard has also been widely demonstrated as a level that can realistically be achieved in residential areas; this exposure level also supports the ability to achieve in interior standard of 45 dBA L_{dn} with standard residential construction techniques and materials.

FEDERAL TRANSIT ADMINISTRATION

In its Transit Noise and Vibration Impact Assessment guidance manual, the Federal Transit Administration (FTA) recommends a daytime construction noise level threshold of 80 dBA L_{eq} over an eight-hour period when detailed construction noise assessments are performed to evaluate potential impacts to community residences surrounding a project (FTA 2018). The FTA also recommends using a construction noise threshold of 75 dBA L_{dn} averaged over 30 days for residences exposed to construction noise lasting 30 days or longer. Although this FTA guidance is not a regulation, it can serve as a quantified standard in the absence of such limits at the state and local jurisdictional levels.

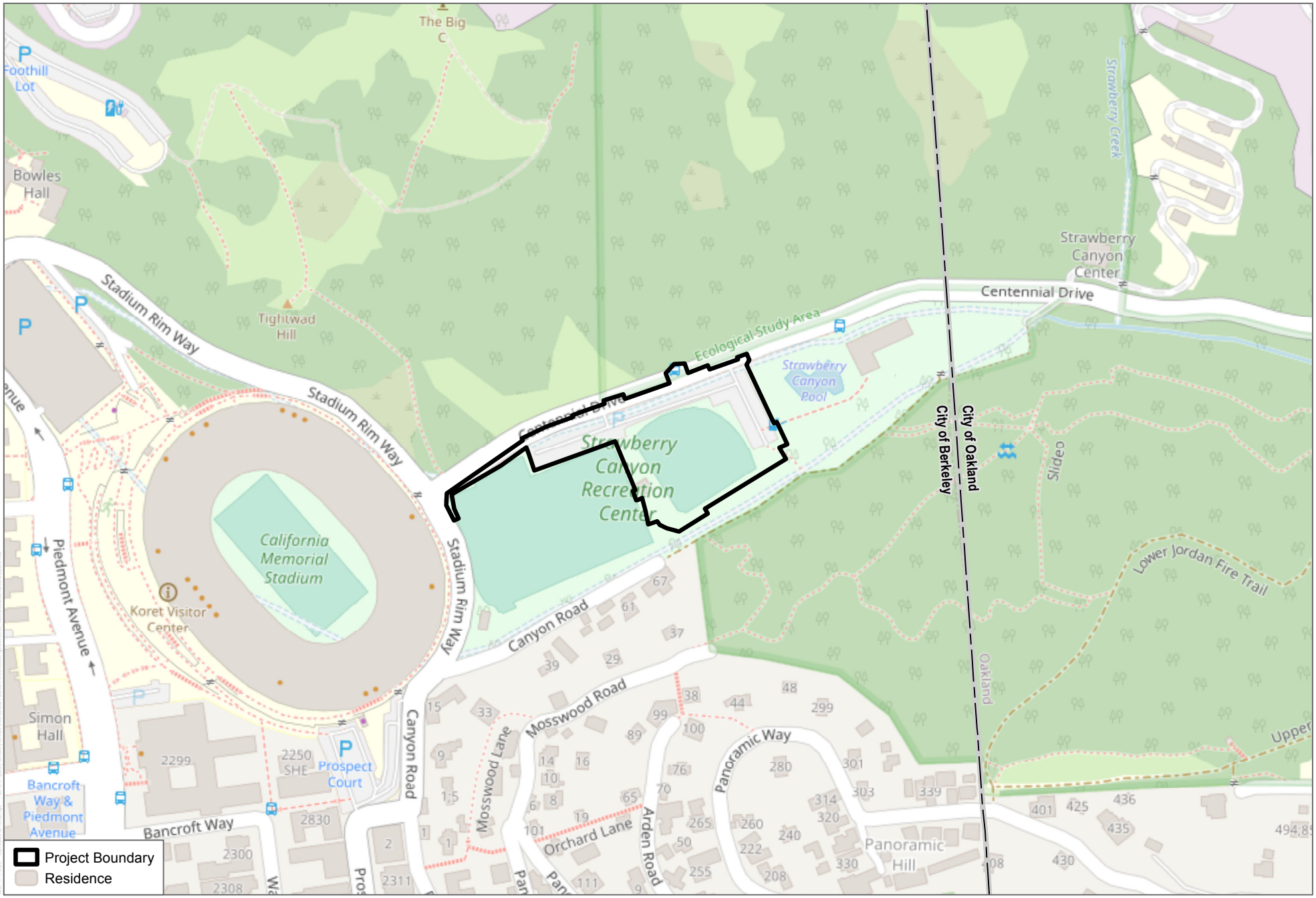
FEDERAL INTERAGENCY COMMITTEE ON NOISE

For the assessment of project noise impacts and degradation of the existing ambient noise environment, significance thresholds developed by the Federal Interagency Committee on Noise (FICON) are often employed. FICON specifies a maximum allowable increase in noise level (using CNEL), which is dependent upon the baseline ambient noise level. Under FICON recommended criteria (FICON 1992), as existing ambient noise increases, the threshold level for the allowable increase in noise exposure resulting from a project is reduced (i.e., the allowable increase in noise level has an inverse relationship with the ambient noise levels without a project). Table 4.5-5 illustrates the FICON criteria considered when evaluating noise generated by a project. If sensitive receptors (i.e., residences) would be exposed to long-term project noise increases exceeding these criteria, impacts may be considered significant.

TABLE 4.5-5. SIGNIFICANCE OF CHANGES IN COMMUNITY NOISE EXPOSURE LEVEL

Existing Noise Exposure (dBA CNEL)	Allowable Noise Exposure Increase / Significance Threshold (dBA CNEL)
Less than 60	5
60 - 65	3
Greater than 65	1.5

Source: FICON 1992.
Notes: dBA = A-weighted decibel. CNEL = Community Noise Equivalent Level.



SOURCE: OpenStreetMap

FIGURE 4.5-2

Vicinity Residential Neighborhoods / Noise Sensitive Receivers

UC Berkeley Cal Softball Field Renovation Project

DUDEK

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4.5.2.2 STATE

CALIFORNIA NOISE CONTROL ACT OF 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, declares that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also identifies a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

GENERAL PLAN GUIDELINES

The State of California, through its General Plan Guidelines, provides guidance on how ambient noise should influence land use and development decisions and includes a table of recommended maximum exterior noise levels by land use, expressed in CNEL. The General Plan Guidelines provide cities with recommended community noise and land use compatibility standards that can be adopted or modified at the local level based on conditions and types of land uses specific to that jurisdiction.

CALIFORNIA BUILDING CODE NOISE INSULATION STANDARDS

The California Building Code is Title 24 of the California Code of Regulations (CCR). In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for hotels, motels, dormitories, and multi-family residential buildings (CCR Title 24, Part 2). Title 24 establishes standards for interior room noise (attributable to outside noise sources or adjacent dwelling units). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure is proposed to be located in an area with a CNEL (or L_{dn}) of 60 dBA or greater without development of the project. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of at least 45 dBA (CCR Title 24 Noise Standards, Chap. 2-35).

CALGREEN

The State of California's noise insulation standards for nonresidential uses are codified in CCR Title 24, Part 11, California Green Building Standards Code (CALGreen). CALGreen noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate appropriate transmission loss ratings for the wall and roof/ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels would not exceed 50 dBA $L_{eq(1hr)}$.

4.5.2.3 UNIVERSITY OF CALIFORNIA

OFFICE OF ENVIRONMENT HEALTH AND SAFETY PROGRAMS

UC Berkeley's Office of Environment, Health & Safety works with UC Berkeley construction project teams to implement noise reduction measures, review noise monitoring reports prepared by third-party consultants, respond to noise complaints, and perform noise monitoring at specific sites upon request.

CAPITAL STRATEGIES COMMUNICATIONS

UC Berkeley has a construction project communication program to communicate with its affiliates, the public, and neighbors about forthcoming or ongoing construction projects. Under the program, Capital Strategies Communications (CSC) engages in a range of steps to ensure responsive communications.

CSC reviews site utilization and staging plans early on to reduce the impacts of construction equipment and circulation on UC Berkeley affiliates and neighbors. CSC then coordinates project goals, scope, and timeline for effective communications, followed by the distribution of flyers and emails to those affected to communicate construction project specifics (e.g., hours of work, dates of construction, expected impacts, and contact information). During demolition, site preparation, and construction, CSC sends construction communications on a regular basis; sends special notices in advance when unusual episodes of noise are expected; provides project information for inclusion in UC Berkeley publications; and responds to, and maintains records of, all complaints.

CSC coordinates with City staff to communicate and lessen impacts, coordinate complaint responses with the Office of Environment, Health & Safety, and participates in campus-wide efforts to reduce instances of construction impacts on the UC Berkeley community and its neighbors.

UC BERKELEY CAMPUS DESIGN STANDARDS

UC Berkeley created the Campus Design Standards to guide design and construction professionals to complete lasting, high-quality additions to the UC Berkeley built environment. The Campus Design Standards, along with applicable codes, ensure that new construction and renovation projects at UC Berkeley integrate industry best practices and experience with existing campus buildings, infrastructure, grounds, and maintenance issues. Relevant sections of the Campus Design Standards are listed below:

Section 01 14 00: Work Restrictions

a. The Work of this project shall be accomplished in accordance with the City of Berkeley's Construction Noise Standards (see Local regulations below).
b. No work shall be performed on Saturdays, Sundays or UC Berkeley holidays, unless otherwise approved by the Owner's Representative, in consultation with the Campus Building Department.
c. Work occurring during RRR[1] or Finals Week shall not start before 9:00 a.m. unless otherwise approved in advance.
d. All roto-hammering, chipping, doweling, pneumatic fastening, or any other activity that may cause excessive noise and or vibration in central campus environs or occurring near residences shall be performed in a manner that causes the least possible disturbance to campus activities or residents.

[1] Reading, Review, and Recitation (RRR) Week is the week following the end of formal class instruction and preceding the start of final exams.

f. All crane work shall be scheduled to cause the least possible disruption to the campus and surrounding environs.

g. Alterations to the above contract requirements may be made in advance, with the written permission of the Campus Building Official or Campus Architect.

Section 01 56 19: Temporary Noise Barriers

1. The following noise control procedures shall be employed (these requirements may be modified for projects as required by Environmental Impact Report Mitigation Measures where needed):
   a. Maximum Noise: The Contractor shall use equipment and methods during the course of this work that are least disruptive to adjacent buildings, office, or residents. Note: Modify the following, as necessary for EIR Mitigation Measures (if any). Noise levels for trenchers, graders, trucks and pile drivers shall not exceed 90 dBA at 50 feet as measured under the noisiest operating conditions. For all other equipment, noise levels shall not exceed 85 dBA at 50 feet.
   b. Equipment: Jack hammers shall be equipped with exhaust mufflers and steel muffling sleeves. All diesel equipment shall have exhaust muffled. Air compressors shall be of a quiet type such as a "whisperized" compressor.
   c. Operations: Machines shall not be left idling. Electric power shall be used in lieu of internal combustion engine power wherever possible. Equipment shall be maintained to reduce noise from vibration, faulty mufflers, or other sources.
   d. Scheduling: Noisy operations shall be scheduled so as to minimize their disturbance to occupied adjacent areas and duration at any given location.

Section 01 71 33: Protection of Adjacent Construction

1. Noise and Dust Control[2]
   a. The Contractor shall note that the building and adjacent facilities shall remain in operation during the entire construction period, and shall take all reasonable precautions to eliminate dust and minimize noise.
   b. The Contractor shall erect temporary partitions to confine noise and dust as required.

UC BERKELEY CONTINUING BEST PRACTICES

UC Berkeley applies continuing best practices (CBPs) relevant to noise and vibration as part of the project approval process. CBPs that would be implemented as part of the proposed project are included in Chapter 3, Project Description, and the complete list of CBPs is provided in Appendix B, UC Berkeley Continuing Best Practices, of this Draft EIR. Applicable CBPs are identified and assessed for their potential to reduce adverse physical impacts later in this section under Section 4.5.3, Impacts and Mitigation Measures.

4.5.2.4 LOCAL

As discussed in Chapter 3, Project Description, 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. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley considered using noise standards from the municipal code from the city where the noise-sensitive receptor is located.

[2] See Appendix A-1, Notice of Preparation/Initial Study, for impacts related to fugitive dust from construction activities.

The City of Berkeley and the City of Oakland noise standards are therefore described below and are used where appropriate in this analysis as thresholds of significance to determine impact significance.

CITY OF BERKELEY

Municipal Code

Permanent stationary noise sources in Berkeley are regulated by Municipal Code Section 13.40.050, Exterior Noise Standards. The City of Berkeley's exterior noise limits are based on zoning and time of day and are summarized in Table 4.5-6.

TABLE 4.5-6. CITY OF BERKELEY – EXTERIOR NOISE LIMITS (dBA)

Zoning District	Time Period	Noise Level, dBA L50
R-1, R-2, R-1A, R-2A, and ESR	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 p.m.	55 45
R-3 and above	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 p.m.	60 55
Commercial	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 p.m.	65 60
Industry	Anytime	70

Source: City of Berkeley 2023c.
Notes: If the measured ambient noise level is greater than the level permissible within any of the noise limit categories above, the sound level when measured on any other property shall not exceed:
[a] The ambient noise level for a cumulative period of more than 30 minutes in any hour (L_{50}); or
[b] The ambient noise level plus 5 dBA for a cumulative period of more than 15 minutes in any hour (L_{25}); or
[c] The ambient noise level plus 10 dBA for a cumulative period of more than 5 minutes in any hour (L_8); or
[d] The ambient noise level plus 15 dBA for a cumulative period of more than 1 minute in any hour (L_2); or
[e] The ambient noise level plus 20 dBA for any period of time (L_{max}).
If the measurement location is on a boundary between two different zones, the noise limit applicable to the quieter zone shall apply.

For this project, UC Berkeley is using two operational noise standards to measure significance. The first, the City of Berkeley's stationary noise limits, is used as the significance threshold for the evaluation of the project's operational noise from stationary sources, such as mechanical equipment. The City of Berkeley stationary noise source limit is considered appropriate for proposed project mechanical equipment because such equipment could be operated to manage temperatures in locker rooms, coaches' offices, and other areas during team practices, coaching events, and softball games; in other words, equipment use would be relatively frequent and should be evaluated for the potential to result in a permanent increase in ambient noise levels. The second, the FICON adopted standards, is used as the significance threshold for operational noise impacts from the increase in spectators associated with the proposed project. The rationale for the use of the FICON standards, is that noise from increasing attendance at softball games no more than 25 days per year does not align well with the definition of a permanent stationary noise source (i.e., a sustained source of noise that occurs on a regular basis, with at least a daily or weekly frequency). The facility would be used no more than 25 days in a calendar year (only 7% of the days on an annual basis) to host competitive events that would result in net increases in the noise levels at some residences in the City of Berkeley while the competitive event is occurring. In addition, based on ambient noise measurements, many of the homes in the adjacent residential neighborhoods are already exposed to levels that exceed the City of Berkeley daytime stationary noise standards while existing softball games are played. The FICON standard is applied to evaluate the change in potential softball game event noise levels from the proposed project, as this allows for direct comparison of noise levels from these infrequent, episodic events. The FICON standard is also more granular, in that it is a tiered system of thresholds based on ambient noise levels on a sliding scale, where smaller increases in project-generated noise levels would have a greater impact on areas with higher ambient noise levels. Section 4.5.3.1, Standards of Significance, provides more details on the sliding scale under "Operational Noise Thresholds."

Section 13.40.070 of the City of Berkeley Municipal Code regulates construction noise, by limiting construction noise levels by time of day, duration, and land use of the receptor. Construction is prohibited on weekdays from 7:00 p.m. to 7:00 a.m. and on weekends and legal holidays from 8:00 p.m. to 9:00 a.m., except for emergency work of public service utilities or where a variance is issued. Table 4.5-7 summarizes these construction noise regulations. UC Berkeley in their Campus Design Standards has elected to use the City of Berkeley construction noise standards as a significance threshold for temporary construction noise impacts upon City of Berkeley residents, and therefore those standards will be used to evaluate the impacts of the proposed project.

TABLE 4.5-7. CITY OF BERKELEY – MAXIMUM CONSTRUCTION NOISE LEVELS (DBA L_{MAX})

Duration	Land Use	Weekdays 7:00 a.m. to 7:00 p.m.	Weekends and Legal Holidays 9:00 a.m. to 8:00 p.m.
Short term (less than 10 days)	Residential, R-1, R-2	75	60
	Multi-family Residential, R-3 and above	80	65
	Commercial/Industrial	85	70
Long term (10 days or more)	Residential, R-1, R-2	60	50
	Multi-family Residential, R-3 and above	65	55
	Commercial/Industrial	70	60

Source: City of Berkeley 2023d

CITY OF OAKLAND

The City of Oakland Municipal Code Section 17.120.050(A) sets maximum allowable exterior noise limits per land use zone district, which are summarized in Table 4.5-8.

TABLE 4.5-8. CITY OF OAKLAND – MAXIMUM ALLOWABLE NOISE LEVEL STANDARDS (DBA)

Zoning District	Time Period	L_{33}	L_{17}	L_8	L_2	L_{max}
Residential and Civic	7:00 a.m. to 10:00 p.m.	60	65	70	75	80
	10:00 p.m. to 7:00 p.m.	45	50	55	60	65
Commercial	Anytime	65	70	75	80	85
Industrial	Anytime	70	75	80	85	90

Source: City of Oakland 2022.
Notes: In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the stated applicable noise level shall be adjusted so as to equal the ambient noise level. Each of the noise standards shall be reduced by 5 dBA for a simple tone noise such as whine, screech, hum, noise consisting primarily of speech or music, or for recurring impulse noise such as hammering or riveting.

For this project, UC Berkeley is using two operational noise standards to measure significance. The first, the City of Oakland's stationary noise limits, is used as the significance threshold for the evaluation of the project's operational noise from stationary sources, such as mechanical equipment. The Oakland stationary noise source limit is considered appropriate for proposed project mechanical equipment because such equipment could be operated to manage temperatures in locker rooms, coaches' offices, and other areas during team practices, coaching events, and softball games; in other words, equipment use would be relatively frequent and should be evaluated for the potential to result in a permanent increase in ambient noise levels. The second, the FICON adopted standards, is used as the significance threshold for operational noise impacts from the increase in spectators. The rationale for the use of the FICON standards, is that noise from increasing attendance at softball games no more than 25 days per year does not align well with the definition of a permanent stationary noise source (i.e., a sustained source of noise that occurs on a regular basis, with at least a daily or weekly frequency). The facility would be used no more than 25 days in a calendar year (only 7% of the days on an annual basis) to host competitive events that would result in net increases in the noise levels at some residences in Oakland while the competitive event is occurring.

The FICON standard is applied to evaluate the change in potential softball game event noise levels from the proposed project, as this allows for direct comparison of noise levels from these infrequent, episodic events. The FICON standard is also more granular, in that it is a tiered system of thresholds based on ambient noise levels on a sliding scale, where smaller increases in project-generated noise levels would have a greater impact on areas with higher ambient noise levels. Section 4.5.3.1, Standards of Significance, provides more details on the sliding scale under "Operational Noise Thresholds."

Oakland Municipal Code also regulates construction noise, by limiting construction noise levels by time of day, duration, and land use of the receptor. Construction noise is held to the normal exterior noise standards for each zone district when such construction occurs on weekdays from 7:00 p.m. to 7:00 a.m. and on weekends and legal holidays from 8:00 p.m. to 9:00 a.m. Table 4.5-9 summarizes the Oakland construction noise regulations.

TABLE 4.5-9. CITY OF OAKLAND – MAXIMUM CONSTRUCTION NOISE LEVELS (DBA L_{MAX})

Duration	Land Use	Weekdays 7:00 a.m. to 7:00 p.m.	Weekends and Federal Holidays 9:00 a.m. to 8:00 p.m.
Short term (less than 10 days)	Residential	80	65
	Commercial, Industrial	85	70
Long term (10 days or more)	Residential	65	55
	Commercial, Industrial	70	60

Source: City of Oakland 2022.
Notes: The nighttime noise levels received by any land use and produced by any construction or demolition activity between weekday hour of 7:00 p.m. and 7:00 a.m. or between 8:00 p.m. and 9:00 a.m. on weekends and federal holidays shall not exceed the applicable nighttime noise levels standards

UC Berkeley in their Campus Design Standards has not expressly elected to use the City of Oakland construction noise standards as a significance threshold for temporary construction noise impacts upon Oakland residents. For the proposed project, UC Berkeley has elected to use the Oakland construction noise standard to provide for a consistent approach with how construction noise impacts in City of Berkeley are evaluated.

4.5.3 IMPACTS AND MITIGATION MEASURES

4.5.3.1 STANDARDS OF SIGNIFICANCE

The standards of significance used to evaluate the impacts of the proposed project related to noise are based on Appendix G of the CEQA Guidelines, as listed below. The proposed project would result in a significant impact if it would:

A. Generate 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.
B. Generate excessive groundborne vibration or groundborne noise levels.
C. Expose people residing or working in the project area to excessive noise levels if the project is 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.
D. In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact related to noise.

The boundary between the City of Berkeley and the City of Oakland is located approximately 450 feet to the east of the project site, oriented generally north/south. Consequently, residences in the project vicinity that could be

impacted by noise or vibration associated with project construction may be located either within Berkeley or Oakland. Consequently, in analyzing noise and vibration impacts associated with the proposed project construction, pertinent noise standards included in the City of Berkeley and the City of Oakland noise ordinances have been considered and used where appropriate, as described under Section 4.5.2.4, to develop the following quantified significance criteria for Significance Standards A and B above.

CONSTRUCTION NOISE THRESHOLDS

Construction noise impacts upon residential neighborhoods in the project vicinity along Canyon Road, Mosswood Road, and Panoramic Way (generally west of Dwight Way) are evaluated based on the limits set forth by the City of Berkeley, as directed by the UC Berkeley's Campus Design Standard, because these neighborhoods are located within Berkeley. The City of Berkeley has established noise thresholds for construction noise (Section 13.40.070 of the City of Berkeley Municipal Code) that limits construction noise levels by time of day, duration, and land use or receptor. These thresholds, summarized in Table 4.5-7, are used to determine impact significance for construction noise sources. Construction is prohibited on weekdays from 7:00 p.m. to 7:00 a.m. and on weekends and legal holidays from 8:00 p.m. to 9:00 a.m., except for emergency work of public service utilities or where a variance is issued.

Construction noise impacts upon residential neighborhoods in the project vicinity along Dwight Way and Panoramic Way (generally east of Dwight Way) are evaluated based on the limits set forth by the City of Oakland, as these neighborhoods are located within Oakland. The City of Oakland (Section 17.120.050 of the City of Oakland Municipal Code) establishes maximum allowable construction noise levels by time of day, duration, and land use or receptor. Maximum allowable construction noise levels within Oakland are summarized in Table 4.5-9 and are used to determine impact significance for construction noise levels at nearby residences within Oakland.

In that both Oakland and Berkeley have adopted absolute limits for construction noise levels, such limits serve as the significance threshold for construction noise. Construction is acknowledged to be temporary, and therefore while the relative increase over ambient noise levels is disclosed for construction noise activities, a separate relative noise significance threshold is not applied.

OPERATIONAL NOISE THRESHOLDS

For noise levels attributable to the operation of the project (increase in spectators 25 days per year), the significance threshold is based upon guidance adopted by FICON (FICON 1992). This tiered system of thresholds is based on ambient noise levels on a sliding scale, where smaller increases in project-generated noise levels would have a greater impact on areas with higher ambient noise levels. For operational increases in ambient noise levels:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA L_{dn} and higher;
- Greater than 3 dBA increase for ambient noise environments of 60-64 L_{dn}; and
- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA L_{dn}.

Permanent stationary noise sources in the City of Berkeley are regulated by Municipal Code Section 13.40.050, Exterior Noise Standards; for single-family residences the daytime limit is generally 55 dBA L_{eq}. The City of Oakland Municipal Code Section 17.120.050(A) sets maximum allowable exterior noise limits for stationary noise sources; for single-family residences the daytime limit is generally 60 dBA L_{eq}. The City of Berkeley and City of Oakland stationary noise limits are used as the significance thresholds for the evaluation of the proposed project's operational noise from stationary sources, such as mechanical equipment, at residential receivers in the City Berkeley and the City of Oakland, respectively.

TRAFFIC NOISE THRESHOLDS

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels in the areas around the project. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. As with operational noise, the significance threshold for relative traffic noise increases follows thresholds related to those established by FICON (FICON 1992); for traffic-related increases in ambient noise levels:

- Greater than 1.5 dBA increase for ambient noise environments of 65 dBA L_{dn} and higher;
- Greater than 3 dBA increase for ambient noise environments of 60-64 L_{dn}; and
- Greater than 5 dBA increase for ambient noise environments of less than 60 dBA L_{dn}.

A significant cumulative traffic noise increase would occur if project traffic were calculated to contribute 1 dBA or more to a significant noise impact identified for the resulting noise levels from all projects on the cumulative list (i.e., a traffic noise level increase greater than the above criteria when considering the combined contributions from all cumulative list projects).

VIBRATION THRESHOLDS

Neither the City of Berkeley nor the City of Oakland have quantified limits for vibration. The City of Oakland exempts vibration caused by temporary construction or demolition work. The City of Berkeley prohibits vibration that annoys or disturbs people of "normal sensitiveness." The FTA provides criteria for acceptable levels of groundborne vibration based on typical human response. For the purposes of this EIR, 72 decibels vibration velocity (VdB) will be used as a threshold for potentially annoying groundborne vibration based on FTA criteria (FTA 2018), as shown in Table 4.5-10.

TABLE 4.5-10. GROUNDBORNE VIBRATION CRITERIA: POTENTIAL ANNOYANCE

Land Use Category	VdB re 1 micro in/sec
I. Residences and buildings where people normally sleep	72[a]

Source: FTA 2018.
Notes: VdB = vibration decibel.
[a] Frequent events = more than 70 events per day.

.In addition to potential annoyance, the FTA has criteria for various types of buildings susceptible to architectural damage, shown in Table 4.5-11. For example, the Category III, non-engineered timber and masonry buildings threshold of 0.2 inches per second peak particle velocity (in/sec PPV) applies to typical residential structures. For historic structures that are considered more fragile, the 0.12 in/sec PPV threshold applies.

TABLE 4.5-11. GROUNDBORNE VIBRATION CRITERIA: ARCHITECTURAL DAMAGE

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. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018.
Notes: PPV = peak particle velocity. in/sec = inches per second.

4.5.3.2 ANALYTICAL METHODS

ANALYSIS AND MODELING

The analysis of existing and future noise environments is based on observations, noise level measurements, and computer modeling. Existing noise levels were monitored at selected on-site and off-site locations using ANSI Type II sound level meters for general environmental noise measurement instrumentation. Traffic noise modeling involved the calculation of existing and future traffic noise levels along roadway sections where the proposed project would contribute additional vehicle trips, as identified in Section 4.6 (Transportation), using the Federal Highway Administration (FHWA) model. Vibration from transportation sources was not evaluated in detail because it is not common for vibration from motor vehicles traveling on paved roads to cause disturbance or substantial annoyance in these areas. Noise from activities/operation of the softball field project was evaluated using the commercial noise prediction software model SoundPlan. Inputs for spectator noise and sound amplification systems were based upon applicable research papers presented at the 2011 Institute of Noise Control Engineers (INCE) national conference (Hayne et.al. 2011). Noise-sensitive receivers were entered into the SoundPlan model space as geographic points (LT1 – LT4 and P01 – P11) each representing a residence at which operational noise levels were predicted. Due to the variety and concentration of some events and activities, it is expected that the proposed project would have a varying degree of use throughout the year and throughout any given day. Therefore, to provide a conservative analysis, on-site operational noise from the softball field considers typical weekday use, as well as typical and maximum event scenarios for use of the softball field, as further described in Impact NOI-1.

Construction noise levels were determined using the FHWA Roadway Construction Noise Model (RCNM) construction noise prediction model. For construction vibration, this analysis used FTA thresholds for structural damage (vibration-peak-particle velocities greater than 0.2 in/sec for residential structures and greater than 0.12 in/sec for historic-age structures) and FTA's threshold for human annoyance within residences (72 VdB with a crest factor of 4 and standard attenuation rates between the vibration source and residences where people normally sleep). Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on CalEEMod generated default values. Complete detailed construction assumptions are included in Appendix A-1, Notice of Preparation/Initial Study. The construction equipment mix used for estimating the construction noise emissions of the proposed project is shown in Table 4.5-12.

TABLE 4.5-12. CONSTRUCTION EQUIPMENT LIST BY PHASE – UC BERKELEY CAL SOFTBALL FIELD RENOVATION PROJECT

Construction Phase	Equipment	Quantity
Demolition	Front-End Loader	3
	Concrete Saw	1
	Dozer	1
Site Preparation	Grader	1
	Scraper	1
	Front-End Loader	1
Grading	Grader	2
	Front-End Loader	1
	Dozer	1
	Backhoe	1
Building Construction	Crane	1
	Forklift (Gradall)	2
	Generator	1
	Backhoe	1
	Welder/Torch	3
Paving	Concrete Mixer Truck	1
	Paver	1

TABLE 4.5-12. CONSTRUCTION EQUIPMENT LIST BY PHASE – UC BERKELEY CAL SOFTBALL FIELD RENOVATION PROJECT

Construction Phase	Equipment	Quantity
	Roller	2
	Backhoe	1
	Dump Truck	1
Architectural Coating	Air Compressors	1

Notes: See Appendix A-1 for details

4.5.3.3 IMPACT ANALYSIS

AREAS OF NO IMPACT

Aircraft Noise (Standard of Significance C)

The proposed project would not expose people to excessive aircraft noise (Significance Standard C). The nearest airstrip to the proposed project is the Alameda Point Naval Air Station, which is a military use airport located approximately 6.25 miles southwest. The nearest public or public-use airport is Oakland Airport, which is located approximately 9 miles south of the project site. The project site is not located within the airport influence area for Alameda Point or Oakland International Airport. Therefore, the proposed project would have no impact related to exposure of people in the project area to excessive airport-related noise, and this standard is not further evaluated.

PROJECT AND CUMULATIVE IMPACTS

Impact NOI-1 Temporary or Permanent Increase in Ambient Noise (Significance Standard A). The proposed project could generate a substantial temporary 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, but would not generate a substantial permanent increase in such ambient noise levels. *(Significant)*

CONSTRUCTION

Construction of the proposed project would generate noise that could expose nearby receptors (residences) to elevated noise levels that may disrupt communication and routine activities periodically during the 13-month construction period. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Noise from construction equipment generally exhibits point source acoustical characteristics. A point source sound is attenuated (or reduced) at a rate of 6 decibels per doubling of distance (6 dB/DD) from the source for "hard site" conditions and at 7.5 decibels per doubling of distance for "soft site" conditions, as described in Section 4.5.1.2, Acoustic Fundamentals. These rules apply to the propagation of sound levels with no obstacles between source and receivers, such as topography (ridges or berms) or structures. The range of maximum noise levels for various types of construction equipment is provided in Table 4.5-13. Typical operating cycles may involve two minutes of full power, followed by three or four minutes at lower levels.

TABLE 4.5-13. CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Equipment	Typical Sound Level (dBA) - 50 feet from Source
Air Compressor	81
Backhoe	80
Compactor	82

TABLE 4.5-13. CONSTRUCTION EQUIPMENT NOISE EMISSION LEVELS

Equipment	Typical Sound Level (dBA) - 50 feet from Source
Concrete Mixer	85
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

Source: FTA 2018.

For construction sites, equipment use moves around the site to accomplish the work on that portion of the site. For construction noise, a concept called the acoustic center is useful in determining the average noise levels at an off-site location across an entire construction phase, with equipment moving closer and further away. The acoustic center is the idealized point from which the energy sum of all construction activity noise near and far would be positioned. Using this acoustic center distance provides an average noise level exposure over the construction phase period, as compared to noise levels based simply on the distance from the construction zone boundary.

As part of the proposed project described in Chapter 3, Project Description, UC Berkeley would implement the noise (NOI) CBPs listed below (see also Appendix B for a complete list of CBPs). Adherence to these CBPs would minimize construction noise impacts.

- **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 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.

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.

- **CBP NOI-3:** UC Berkeley will precede all new construction projects that are outside of the Campus Park, the Clark Kerr Campus, or adjacent to a non-UC Berkeley property with community notification, with the purpose of ensuring that the mutual needs of the particular construction project and of those impacted by construction noise are met, to the extent feasible.

Construction Noise Assessment

Figure 4.5-3 illustrates the location of the noise-sensitive receivers for which construction noise modeling was performed. The nearest point of construction activities to the closest noise-sensitive receiver (CN1, Canyon Road residence) would be approximately 90 feet, while the distance from the acoustic center of construction activities to CN1 would be 250 feet. The next closest residence (CN2, southwest on Canyon Road) would be approximately 180 feet from the closest point of construction but would be 340 feet from the acoustic center of construction activities. The closest residence to the project site on Mosswood Road (CN3) would be approximately 230 feet from the closest point of construction but would be 390 feet from the acoustic center of construction activities. The closest residence to the project site on Panoramic Way (CN4) would be 500 feet from the closest point of construction. All these residences are in the City of Berkeley, with a daytime construction noise exposure limit for construction projects with a duration of more than 10 days of 60 dBA $L_{eq.}$ The closest residence to the project site that is within Oakland (CN5) is located approximately 1,020 feet from the closest construction point. The Oakland daytime construction noise limit for residential property is 65 dBA $L_{eq.}$ It should be noted that these construction noise limits are far more restrictive than the FTA recommended limit of 80 dBA L_{eq} over an eight-hour period, described in Section 4.5.2, Regulatory Framework.

Whereas Table 4.5-13 shows the noise level of individual pieces of equipment, the noise levels shown in Table 4.5-14 and Table 4.5-15 take into account operation of multiple pieces of construction equipment simultaneously and list the typical overall noise levels that would be expected for each phase of construction involved in the construction of the softball field renovation project. As explained above, due to the prevalence of quieter construction equipment now used in the industry, construction phase noise levels indicated in Table 4.5-14 and Table 4.5-15 represent “worst-case” conditions. As the tables show, the highest noise levels are expected to occur during the demolition phase of construction.

SOURCE: ESRI World Imagery 2018

DUDEK

0 150 300 Feet

FIGURE 4.5-3

Modeled Construction Noise Receivers

UC Berkeley Cal Softball Field Renovation Project

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TABLE 4.5-14. OUTDOOR CONSTRUCTION NOISE LEVELS (dBA L_{EQ}) BY PHASE – BERKELEY REPRESENTATIVE RECEIVERS

Construction Phase	Noise Levels at CN1 (90 Feet)	Noise Levels at CN1 from Acoustic Center (250 Feet)	Noise Levels at CN2 (180 Feet)	Noise Levels at CN2 from Acoustic Center (340 Feet)	Noise Levels at CN3. (230 Feet)	Noise Levels at CN3 from Acoustic Center (390 Feet)	Noise Levels at CN4 (500 Feet)
Demolition	**79**	**67**	**71**	**64**	**68**	**63**	60
Site Preparation	**77**	**66**	**69**	**63**	**67**	**62**	59
Grading/Excavation	**77**	**66**	**69**	**63**	**67**	**61**	59
Bld. Construction	**77**	**66**	**69**	**62**	**66**	**61**	59
Architectural Coating	**67**	56	59	53	57	51	49
Paving	**75**	**63**	**67**	60	**64**	59	56
Highest Noise Level for Any Phase	79	67	71	64	68	63	60
Ambient Daytime Noise Level[1]	63.5	63.5	63.5	63.5	57.5	57.5	54.5
Relative Change[2]	15.5	3.5	7.5	0.5	10.5	5.5	5.5

Source: RCNM (see Appendix G) 2008, FTA 2018.
Bold values indicate predicted construction noise levels that would exceed the City of Berkeley applicable residential exterior construction noise standards.
1 Ambient daytime noise levels are from Table 4.5-3.
2 Highest construction noise level from any phase compared to ambient noise level (dBA L_{eq}).

As shown in Table 4.5-14, construction-related noise levels at the closest representative residential receivers within Berkeley could reach up to 79 dBA L_{eq} at CN1, when equipment is operating along the closest edge of the construction boundary. Construction noise values at CN1 would exceed the Berkeley construction limit during all construction phases, when equipment is operating along the closest construction zone boundary. Average construction noise levels across the entire project construction would be represented by the acoustic center value, that at CN1 would range from 56 to 67 dBA L_{eq} with these values representing the average level of noise from construction equipment working at locations across the site. Similarly, construction noise could reach as high as 71 dBA L_{eq} at CN2, 68 dBA L_{eq} at CN3, and 60 dBA L_{eq} at CN4. The range in construction noise levels using the acoustic center for CN2 would be from 53 to 64 dBA L_{eq}, exceeding the Berkeley standard for all phases except architectural coating and paving. Likewise, the range in construction noise levels using the acoustic center for CN3 would be from 51 to 63 dBA L_{eq}, exceeding the Berkeley standard for all phases except architectural coating and paving. At CN4, construction noise levels even from equipment operating along the closest construction zone boundary would be within the Berkeley daytime construction noise limits. Therefore, residences in Berkeley at distances greater than 500 feet from the project site would not be exposed to project construction noise exceeding the Berkeley standards.

As noted above, the City of Berkeley Municipal Code daytime construction limits are far more restrictive than the FTA recommended limits. With respect to the construction noise levels reported in Table 4.5-14, predicted noise levels at each of the modeled receivers would fall within the recommended FTA limit of 80 dBA L_{eq} for all construction phases, even using the distance from the closest construction zone boundary. As such, use of the Berkeley Municipal Code daytime construction limit represents a conservative analysis of construction noise impacts.

Table 4.5-15 presents the results of the construction noise modeling for the closest residence in Oakland to the project site. As indicated in Table 4.5-15, construction noise level exposure at the closest residence in Oakland would remain below the Oakland daytime construction noise limit of 65 dBA L_{eq}.

TABLE 4.5-15. OUTDOOR CONSTRUCTION NOISE LEVELS (DBA L_{EQ}) BY PHASE – CLOSEST OAKLAND RESIDENTIAL RECEIVER

Construction Phase	Noise Levels at CN5 (1,020 Feet)
Demolition	54
Site Preparation	52
Grading/Excavation	52
Building Construction	52
Architectural Coating	42
Paving	49
Highest Noise Level for Any Phase	54
Ambient Daytime Noise Level[1]	54.5
Relative Change[2]	< 1

Source: RCNM (see Appendix G) 2008.
Bold values indicate predicted construction noise levels that would exceed the City of Oakland applicable residential exterior exposure construction noise standards.
[1] Ambient daytime noise level is from Table 4.5-3.
Highest construction noise level from any phase compared to ambient noise level (dBA Leq).

Section 13.40.070 of the City of Berkeley Municipal Code and Section 17.120.050 of the City of Oakland Municipal Code regulate construction noise, by limiting construction noise levels by time of day, duration, and land use or receptor. Within Berkeley, for construction lasting more than 10 days, which would be applicable to the proposed project, the exterior exposure construction noise limit during the day for single-family residences is 60 dBA L_{eq} and for Oakland the daytime limit is 65 dBA L_{eq}. While UC Berkeley is not subject to these code requirements, pursuant to its Campus Design Standard, UC Berkeley uses the construction noise limits of the City of Berkeley and City of Oakland municipal codes as thresholds of significance to determine impact significance. Bolded values in Table 4.5-14 indicate predicted construction noise levels that would exceed the City of Berkeley applicable construction noise standards. In Berkeley, construction is prohibited on weekdays from 7:00 p.m. to 7:00 a.m. and on weekends and legal holidays from 8:00 p.m. to 9:00 a.m. Oakland enforces the normal exterior noise standards for each zone district when such construction occurs on weekdays from 7:00 a.m. to 7:00 p.m. and on weekends and legal holidays from 8:00 a.m. to 9:00 p.m. These ordinances ensure that sensitive receptors are not disturbed by early morning or late-night activities. Due to the proximity of Berkeley/Oakland residences to the project site and predicted exceedance of construction noise standards, construction noise impacts for the softball field renovation, even with adherence to CBP NOI-2 and CBP NOI-3 as part of the proposed project, would be *significant*.

Significance without Mitigation: Significant.

OPERATION

On-Site Stationary Sources and Activities

Facility and Activities Description

As discussed in the Project Description, Chapter 3, UC Berkeley proposes to renovate and improve the existing Cal Softball Field. The use of the softball facility would remain the same as its current uses as a competitive and recreational softball field. Modifications to the facility include providing additional spectator and player amenities and permanent seating for up to 1,511 spectators, up from approximately 1,340 spectator seats under existing maximum "sell-out" conditions. The primary changes associated with the proposed project would include providing additional permanent spectator seats in place of portable bleachers, a press box, spectator concourse, competition-grade lights, restrooms, new public address (PA) system, expanded playing field dimensions, team and locker rooms, a ticket booth, improved training facilities (e.g., batting cages), entry plaza, landscaping, sustainable design

features, access and bus stop improvements and utilities. The new PA system would include a new (replacement) speaker system with speakers mounted on the exterior of the press box and on the proposed lighting poles for use during games; with additional speakers mounted in the batting cages for use during practices. A total of 22 speakers would be used for commentary and media playback during competitive games. Speakers providing coverage for the permanent spectator seating, and partially for the bullpens/dugouts would be configured to produce approximately 6 dBA more than the spectator sound levels. The proposed project would remove approximately 85 parking spaces and retain approximately 25 parking spaces in the existing Witter Lot, provide for a new roundabout on the northeast corner of the site near the Strawberry Canyon Recreation and Pool entrance, and upgrade the existing sidewalk along the project frontage on Centennial Drive.

The use of the proposed project would be the same as the existing softball field, which is primarily used for practices, intramural play, campus/clinics, and other occasional daytime competitions during the fall. In the spring, the renovated softball field would host up to 21 regular season softball events and up to 4 post-season events, as well as practices and intramural sports and low impact use of the facilities when it is not scheduled for formal game/tournament use. Overall, competitive games would increase somewhat from 15 to 20 under existing conditions compared to up to 25 games, including 21 regular season softball games and up to 4 post-season events with the proposed project. There is no change in the number of days the Cal Softball field would be used for practices and intramural sports. The hours of field operations with the proposed project would remain unchanged with the proposed project. Existing and proposed softball field hours of operations are Monday through Sunday 8:00 a.m. to 10:00 p.m. Evening games are and will continue to be scheduled to ensure the softball field is cleared no later than 10:00 p.m. All regular season softball games could be televised, as under existing conditions. The proposed project would not use diesel backup generators for lighting or any other purposes, including for TV broadcasting trucks.

Attendance at games has and would continue to vary depending on how well the Intercollegiate Athletic (IA) Women's Softball Program (Cal women's softball) is performing in a given season, what team they are playing, and other factors, such as weather. Most games are held on Fridays, Saturdays, and Sundays, depending on television contracts and scheduling requirements. Average attendance during the regular season at the existing facility was approximately 500 attendees, with the largest attendance of approximately 1,130, out of a maximum existing seating capacity of 1,340 (when accounting for portable seating). Average and maximum attendance could increase with the proposed project, commensurate with the added permanent spectator seating, as further described under "Spectator Noise Assessment" below. During the summer, the facility would not be used for competition, but would be used for intramural recreation, as well as Rec Sports summer camps (same as existing uses). Non-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.

Additionally, as part of the proposed project, UC Berkeley would implement CBP NOI-1 listed here (see also Appendix B):

- **CBP NOI-1:** Mechanical equipment selection and building design shielding will be used, as appropriate, so that noise levels from future building operations would not exceed the City of Berkeley Noise Ordinance limits for commercial areas or residential zones as measured on any commercial or residential property in the area surrounding a project proposed to implement the LRDP. Controls typically incorporated to attain this outcome include selection of quiet equipment, sound attenuators on fans, sound attenuator packages for cooling towers and emergency generators, acoustical screen walls, and equipment enclosures.

The components of the proposed project subject to CBP NOI-1 are mechanical systems such as heating, ventilation, and air conditioning (HVAC). The project HVAC would consist of split-system air conditioners, heating-only baseboard and in-duct systems with gravity-fed ventilators that would not exceed the threshold as described in the 2022 California Energy Code that defines a building as "Low Energy." With the closest receiver at a distance of 90 feet, noise from the HVAC unit(s) would be below standards for residential uses for the City of Berkeley (as detailed

below). While UC Berkeley would implement the CBP NOI-1 (see Appendix B) listed above as part of the proposed project, given the calculated noise levels at the closest receiver from HVAC operation, shielding or an enclosure would not be required for the proposed air conditioning system.

Stationary Noise Assessment

Proposed project exterior mounted equipment with noise-generating potential would be limited to compressor units for split-system air conditioners. Heating for the interior spaces of the softball field structure would be supplied by electric-powered baseboard units or in-duct heater units, that would not produce audible sound outside the structure. Fresh air ventilation and heat exhaust would be provided by roof-mounted gravity-fed units that are without fans or other powered mechanical equipment, and therefore would not generate sound. The mechanical equipment would include a total of four Samsung split systems that each have a sound rating of 58 dBA L_{eq} at 3.28 feet for the outdoor compressor component (Samsung Publication SHA-CAC-01152021, 2021). If these four compressors were grouped together, the combined sound level would be 64 dBA L_{eq} at 3.28 feet. At the closest residential receiver to the proposed project (90-foot distance) the combined sound level for the four compressors would be approximately 35 dBA L_{eq}. Consequently, project operational noise levels from stationary mechanical noise sources would fall well below the daytime municipal code limits of 55 dBA L_{eq} for City of Berkeley residents or 60 dBA L_{eq} for City of Oakland residents. These noise levels for stationary equipment would also be lower than recorded daytime ambient noise levels at residential receivers in the proposed project vicinity. Therefore, the operational noise impact associated with the proposed project mechanical equipment would be *less than significant*.

Spectator Noise Assessment

Due to the variety and concentration of some events and activities, it is expected that the proposed project would have varied degree of use throughout the year and throughout any given day. Therefore, to provide a conservative analysis, on-site operational noise from a "typical event" and a "maximum event" were used to evaluate the potential sound levels associated with the renovated softball facility (i.e., with the proposed project completed). The typical event is based on the average attendance scenario for the proposed softball field that would have approximately 1,000 spectators during a softball game or tournament, as compared to the existing softball field that has an average of 500 spectators. The maximum event attendance scenario is based on the total "sell-out" capacity of 1,511 spectators during a softball game or tournament. A "typical weekday use" scenario is also provided to reflect practices with no spectators. See Impact NOI-3 for the cumulative impact analysis that considers existing noise levels generated from activities taking place at the Witter Rugby Field.

Typical Weekday Use. During a typical weekday, the renovated softball facility would be used for practices involving the Cal women's softball team, with no spectators. Typical weekday use of the softball field could include the use of a small portable speaker system, bullpen/dugout speakers, a self-contained megaphone/personal voice amplification device, or partial use of the speaker system proposed as part of the project. Typical weekday uses are not dependent on the design capacity of the softball field, and therefore neither the intensity nor the nature of these uses would be anticipated to be altered with the proposed project.

For team practices and routine, daily, activities and equipment use at the softball field, noise levels would not be anticipated to be greater than those of the existing use of the project site. A permanent increase over ambient noise levels would not occur with respect to such routine daily activities; therefore, the operational noise impact associated with the routine typical weekday use of the softball field (not involving competitive matches) would be *less than significant*.

Typical Event. Currently for a typical Cal Softball game, an average spectator attendance of approximately 500 persons and 92 game participants (including players, coaches, and staff) totaling 592 persons use the Cal Softball

Field. For the renovation to the Cal Softball Field, it is expected that the average spectator attendance would increase to approximately 1,000 persons and the number of game participants would remain the same, totaling 1,092 persons (see Section 4.6, Transportation [Table 4.6-3]).

Noise-sensitive receivers were entered into the SoundPlan model space as geographic points (LT1 – LT4 and P01 – P11) each representing a residence at which operational noise levels were predicted. Table 4.5-16 presents the modeled noise levels at each of the long-term measurement locations and at selected existing noise-sensitive receivers (LT1 – LT4 and P01 – P11) and compares modeled existing game noise levels for typical attendance to modeled project noise levels for a typical attendance game. The locations for the receptors listed in Table 4.5-16 are illustrated in Figure 4.5-4. Figure 4.5-4 also illustrates the average noise level (L_{eq}) contours resulting from a typical event, with an average of 1,000 spectators and use of the new PA system for game commentary under the proposed project.

As illustrated in Table 4.5-16, comparing noise levels from an existing typical event (with 592 attendees, including 500 spectators and 92 other participants) to those from a typical event under the proposed project (with 1,092 attendees, including 1,000 spectators and 92 other participants), the relative noise increase would in each case be less than the FICON significance threshold (no greater than a 5 dBA increase where ambient noise level is less than 60 dBA, no greater than a 3 dBA increase where the ambient noise level is between 60 and 65 dBA). Consequently, the on-site operational noise impact associated with a typical event at the proposed project renovated softball field would be *less than significant*.

TABLE 4.5-16. MODELED PROJECT OPERATIONAL NOISE LEVELS FROM A "TYPICAL EVENT" WITH 1,000 SPECTATORS, L_{EQ} DBA.

Receiver		Existing Ambient Daytime Noise Level[1]	Modeled Hourly Noise Levels[4]			Impact?
No.	Address		Existing Typical Event (500 Spectators)[2]	Project Typical Event (1,000 Spectators)[3]	Relative Change	
LT1	67 Canyon Road	63.5	63.5	64.3	0.8	No
LT2	38 Mosswood Road	57.5	56.2	55.4	< 1	No
LT3	15 Canyon Way	55.0	59.0	49.5	< 1	No
LT4	280 Panoramic Way	54.5	56.4	52.8	< 1	No
P01	61 Canyon Road	63.5	58.4	60.7	2.3	No
P02	53 Canyon Road	63.5	57.5	58.0	0.5	No
P03	37 Mosswood Road	57.5	58.8	59.9	1.1	No
P04	29 Mosswood Road	57.5	57.7	57.2	< 1	No
P05	21 Mosswood Road	57.5	56.6	54.5	< 1	No
P06	44 Arden Road	55.0	54.8	56.6	1.8	No
P07	99 Arden Road	55.0	56.4	55.1	< 1	No
P08	48 Mosswood Road	57.5	54.3	57.1	2.8	No
P09	299 Panoramic Way	54.5	53.2	55.8	2.6	No
P10	8 Panoramic Place	57.5	52.5	52.0	<1	No
P11	335-365 Panoramic Way	54.5	57.8	50.9	<1	No

Source: Modeling by Dudek 2023 (Appendix G).
Notes: dBA = A-weighted sound level in decibels; Leq = Energy-equivalent average noise level, typically measured over a duration ranging from 10-minutes to 1-hour.

1 Existing ambient daytime noise level is the recorded average noise level (Leq) at the closest monitor location to the modeled receiver from Table 4.5-3.

2 Existing average game noise level includes existing softball activities with an existing average attendance of 500 spectators, plus 92 participants (592 total attendees) and traffic noise levels. To provide a conservative analysis, the lower traffic noise contribution to the overall existing ambient noise levels is used.

3 Average project game noise level includes anticipated softball activities with an average attendance of 1,000 spectators, plus 92 participants (1,092 total attendees) and traffic noise levels. To provide a conservative analysis, the lower traffic noise contribution to the overall predicted project typical game noise levels is used. Noise analysis assumes use of the new PA system during all use types.

Maximum Event. During collegiate competitions, the maximum capacity that the existing Cal Softball Field is able to accommodate is approximately 1,340 persons and 92 game participants (including players, coaches, and staff) totaling 1,432 total persons. Following the proposed renovations to the Cal Softball Field with the proposed project, it is expected that the number of spectators could increase to the maximum "sell-out" capacity of approximately 1,511 persons and the number of game participants would remain the same (i.e., 92 participants), totaling 1,603 persons (see Section 4.6, Transportation [Table 4.6-4]). Maximum event games and tournaments may include championship matches that are televised on network television, for which a television broadcast van/truck with a satellite uplink or broadband connection would be incorporated; however, electrical power connections (i.e., "shore" power) would be included as part of the proposed renovation of the softball field, negating the need for any electrical generators to be employed by these television broadcast vehicles.

Table 4.5-17 presents the proposed project modeled noise levels during a maximum event, at the long-term measurement locations and at the selected existing noise-sensitive receptor locations and compares these modeled noise levels against the noise levels from an existing maximum game event. The maximum event would have up to 1,511 spectators with the proposed project, as described previously. The locations for the noise-sensitive receptors listed in Table 4.5-17 are also illustrated in Figure 4.5-5. Figure 4.5-5 also illustrates the average noise level (L_{eq}) contours resulting from a maximum event involving up to 1,511 spectators, use of the PA system for game commentary (+6 dBA above spectator generated sound levels), and the presence of a network television van for broadcast coverage of the softball game/tournament (although, with an electrical "shore" power connection provided as part of the proposed project, none of the equipment employed in the television van would generate audible sound levels outside the van).

TABLE 4.5-17. MODELED PROJECT OPERATIONAL NOISE LEVELS FROM A "MAXIMUM EVENT" WITH 1,511 SPECTATORS, L_{EQ} DBA.

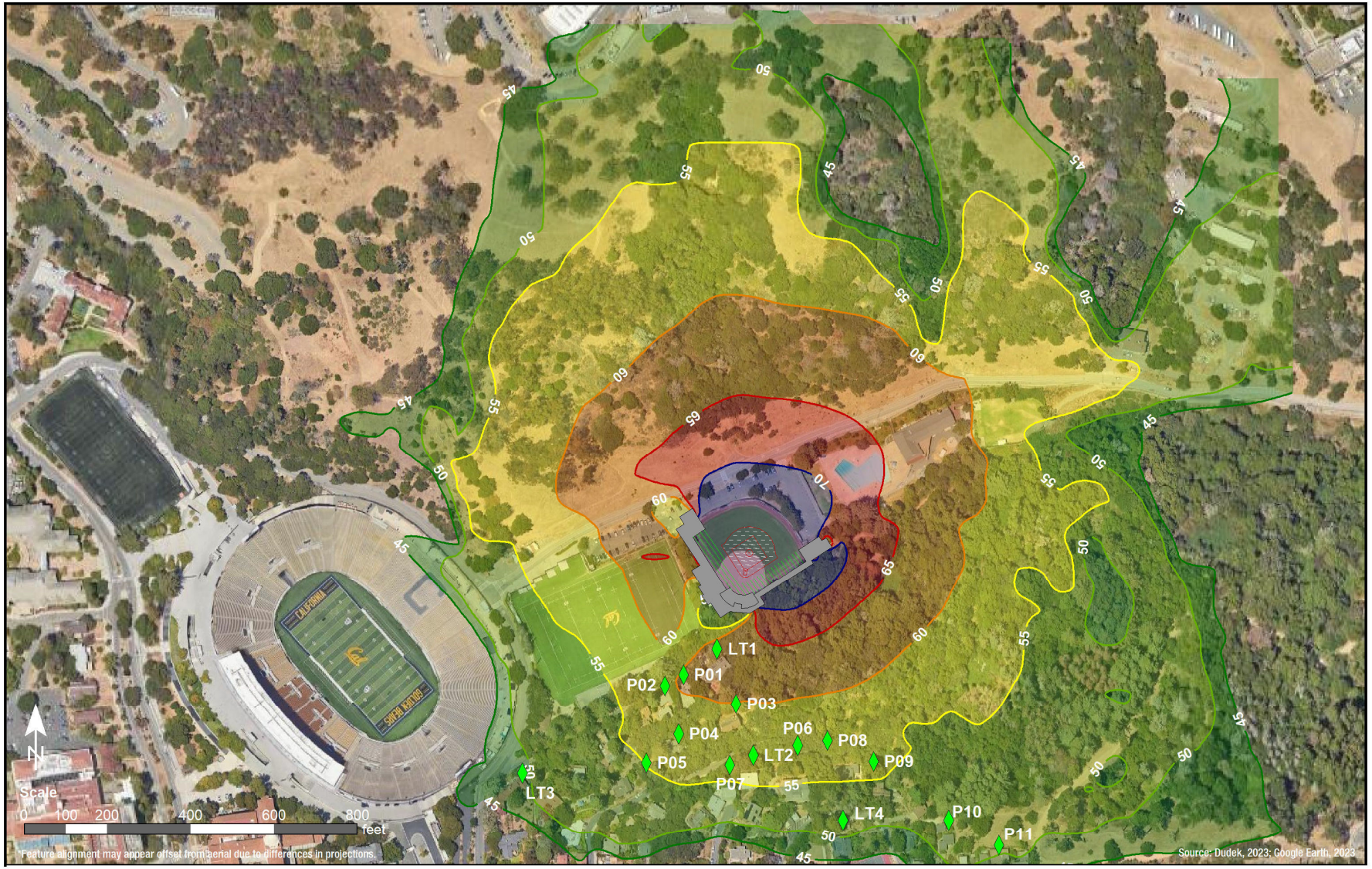
Receiver		Existing Ambient Daytime Noise Level[1]	Modeled Hourly Noise Levels[4]			Impact?
No.	Address		Existing Maximum Event (1,340 Spectators)[2]	Project Maximum Event (1,511 Spectators)[3]	Relative Change	
LT1	67 Canyon Road	63.5	69.7	67.2	< 1	No
LT2	38 Mosswood Road	57.5	59.0	58.8	< 1	No
LT3	15 Canyon Way	55.0	59.9	52.3	< 1	No
LT4	280 Panoramic Way	54.5	57.5	56.1	< 1	No
P01	61 Canyon Road	63.5	63.6	63.6	0	No
P02	53 Canyon Road	63.5	62.2	60.7	< 1	No
P03	37 Mosswood Road	57.5	63.6	63.0	< 1	No
P04	29 Mosswood Road	57.5	61.0	60.3	< 1	No
P05	21 Mosswood Road	57.5	58.6	57.6	< 1	No
P06	44 Arden Road	55.0	56.1	59.7	3.6	No
P07	99 Arden Road	55.0	59.2	58.3	< 1	No
P08	48 Mosswood Road	57.5	56.1	60.2	4.1	No
P09	299 Panoramic Way	54.5	55.8	58.7	2.9	No
P10	8 Panoramic Place	57.5	54.0	55.0	1	No
P11	335-365 Panoramic Way	54.5	58.2	53.8	< 1	No

Source: Modeling by Dudek 2023 (Appendix G).
Notes: dBA = A-weighted sound level in decibels; Leq = Energy-equivalent average noise level, typically measured over a duration ranging from 10-minutes to 1-hour.

1 Existing ambient daytime noise level is the recorded average noise level (Leq) at the closest monitor location to the modeled receiver from Table 4.5-3.

2 Existing maximum game noise level includes existing softball activities with an existing maximum attendance of 1,340 spectators, plus 92 participants (1,432 total attendees) and traffic noise levels. To provide a conservative analysis, the lower traffic noise contribution to the overall existing ambient noise levels is used.

3 Maximum project game noise level includes anticipated softball activities with a maximum attendance of 1,511 spectators, plus 92 participants (1,603 total attendees) and traffic noise levels. To provide a conservative analysis, the lower traffic noise contribution to the overall predicted project typical game noise levels is used. Noise analysis assumes use of the new PA system during all use types.



SOURCE: HOK Architects

DUDEK

FIGURE 4.5-4

Noise Contours - Average Game

UC Berkeley Cal Softball Field Renovation Project

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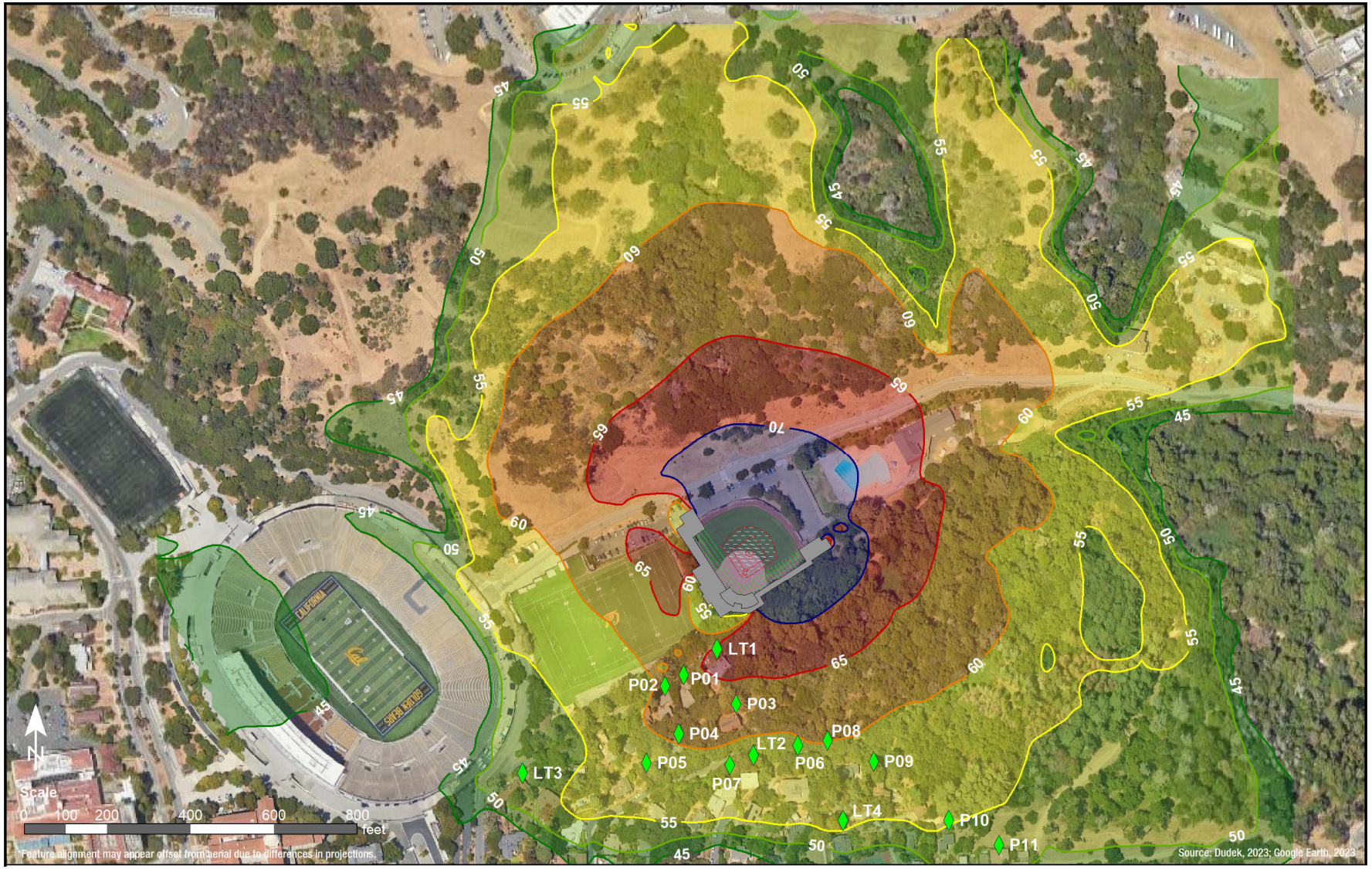

SOURCE: HOK Architects

DUDEK

FIGURE 4.5-5

Noise Contours - Maximum Game

UC Berkeley Cal Softball Field Renovation Project

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As illustrated in Table 4.5-17, comparing noise levels from an existing maximum event (with 1,432 total attendees, including 1,340 spectators and 92 participants) to those from a maximum event under the proposed project (with 1,603 total attendees, including 1,511 spectators and 92 participants) the relative noise increases would in each case be less than the FICON significance threshold (no greater than a 5 dBA increase where ambient noise level is less than 60 dBA, no greater than a 3 dBA increase where the ambient noise level is between 60 and 65 dBA). Therefore, the on-site operational noise impact associated with the maximum event would be *less than significant*.

Significance without Mitigation: Less than significant.

Off-Site Traffic Noise

The primary noise-related effect of the proposed project off site would result from an increase in traffic, which is the main source of noise in most urban areas. Project-related traffic noise levels were examined along roadways, where the project would principally contribute vehicle trips. Renovated softball field trip generation for everyday activities ("typical weekday"), for an average size competitive game ("typical event"), and for a maximum attendance game (or "maximum event") are identified in Section 4.6, Transportation.

Typical weekday net trip generation would be approximately 2 average daily trips (ADT), which would not be a noticeable addition to area roadways. A typical event is projected to produce no more than 316 ADT (net new), while a maximum event is predicted to generate approximately 132 ADT (net new) (see Section 4.6, Transportation).

Existing traffic volumes for the principal roadways evaluated for traffic noise increases are based upon the 2019 Fehr & Peers traffic study prepared for the softball field renovation project. Acoustical calculations using standard noise modeling equations adapted from the FHWA noise prediction model were performed for the following scenarios: Existing, Existing Plus Typical Event, Existing Plus Maximum Event. The modeling calculations take into account the posted vehicle speed, average daily traffic volumes for each scenario, and the estimated vehicle mix (i.e., automobiles, medium and heavy trucks). The model assumed "pavement" propagation conditions, or a hard site surface.

Noise levels in Table 4.5-18 are indicated at 50 feet from the centerline of the road, consistent with the methodology employed for the 2021 LRDP EIR. Noise levels at greater distances from the roadway centerline would be lower due to attenuation provided by increased distance from the noise source. Generally, noise from heavily traveled roadways would experience a decrease of approximately 3 dBA for every doubling of distance from the roadway. The noise model does not take into account the sound-attenuating effect of intervening structures, barriers, vegetation, or topography. Therefore, the noise levels predicted by the model are conservative with respect to potential exterior exposure levels at noise-sensitive uses located along these roadways. Future increases in traffic noise levels, with and without the proposed project, are provided in Table 4.5-18.

TABLE 4.5-18. PROJECT-RELATED TRAFFIC NOISE LEVELS

Roadway Segment	Existing dBA CNEL	Exist + Typical Event dBA CNEL	Exist + Maximum Event dBA CNEL	Maximum Increase (dBA)	Impact?
Centennial Drive East of Canyon Road	60.1	60.2	60.1	0.1	No
Gayley Road South of Hearst Avenue	62.6	62.7	62.6	0.1	No
Piedmont Avenue South of Stadium Rim Way	61.5	61.6	61.5	0.1	No

Source: Appendix G.

Proposed project-related traffic noise increases along roadways to which the project would contribute trips would be 0.1 dBA or less in all cases. Such increases would therefore be well below the FICON based significance threshold (i.e., a 3 dBA CNEL increase when ambient level is between 60 – 64 dBA CNEL), and would not be perceptible to the human ear. Therefore, off-site operational noise impacts of the proposed project from roadway traffic would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

MM NOI-1: **Construction Noise.** The proposed project shall implement the following measures related to construction noise:

- Restrict demolition/construction activities and use of equipment that have the potential to generate significant noise levels (e.g., use of concrete saw, mounted impact hammer, jackhammer, rock drill, etc.) to between the hours of 8:00 a.m. and 5:00 p.m.
- Construction equipment and vehicles shall be fitted with efficient, well-maintained mufflers that reduce equipment noise emission levels at the project site. Internal-combustion-powered equipment shall be equipped with properly operating noise suppression devices (e.g., mufflers, silencers, wraps) that meet or exceed the manufacturer's specifications. Mufflers and noise suppressors shall be properly maintained and tuned to ensure proper fit, function, and minimization of noise.
- Pumps that are not submerged and aboveground conveyor systems shall be located within acoustically treated enclosures, shrouded, or shielded to prevent the propagation of sound into the surrounding areas.
- Portable and stationary site support equipment (e.g., generators, compressors, rock crushers, and cement mixers) shall be located as far as possible from nearby noise-sensitive receptors.
- Impact tools shall have the working area/impact area shrouded or shielded whenever possible, with intake and exhaust ports on power equipment muffled or suppressed. This may necessitate the use of temporary or portable, application-specific noise shields or barriers.
- Construction equipment shall not be idled for extended periods (i.e., 5 minutes or longer) of time in the immediate vicinity of noise-sensitive receptors.
- A temporary noise barrier shall be erected along the construction site perimeter, of a minimum height of 12 feet. Such a temporary noise barrier will be constructed with solid material with a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the temporary noise barrier and may be lined on the construction side with an acoustical blanket, curtain, or equivalent absorptive material.

Significance with Mitigation: Significant and unavoidable (construction noise). Implementation of MM NOI-1 would reduce construction noise impacts by: restricting noise construction activities to daytime hours, equipping construction equipment with mufflers and noise suppressors, siting support equipment as far away as possible from sensitive receptors, installing a temporary noise barrier, and limiting idling of equipment. Due to the proximity of the closest residences, the elevation of such residences above the construction site elevations, and the stringent construction noise standards adopted by the City of Berkeley, a perimeter construction noise barrier and other noise

control methods, while included in MM NOI-1, would not likely be sufficient to reduce construction noise exposure levels at nearby Berkeley residences to below the applicable standard. Therefore, even with the implementation of MM NOI-1, construction noise impacts would remain significant and unavoidable.

Impact NOI-2 Excessive Vibration (Significance Standard B). The proposed project would not result in excessive groundborne vibration or groundborne noise levels. ***(Less than Significant)***

CONSTRUCTION RELATED VIBRATION

The main concern associated with ground-borne vibration is annoyance; however, in extreme cases, vibration can cause damage to buildings, particularly those that are old or otherwise fragile. Some common sources of ground-borne vibration are construction activities such as blasting, pile-driving, and heavy earth-moving equipment activities. The proposed project would include neither blasting nor pile driving, thus avoiding the most substantial sources for construction related vibration, but heavy equipment including small bulldozers, excavators, loaders, and loaded trucks are anticipated to be employed during project construction. Table 4.5-19 lists typical vibration levels for common construction equipment.

TABLE 4.5-19. REFERENCE VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Vibration Level at 25 feet PPV in/sec	Approximate Vibration Level at 25 feet, VdB re 1 micro-in/sec
Pile Driver, Impact (Typical)	0.644	104
Pile Driver, Sonic (Typical)	0.170	93
Vibratory Roller	0.210	94
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: FTA 2018.

Ground vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in proximity and result in annoyance (FTA 2018). With regard to human annoyance, 72 VdB is used as a threshold for potentially annoying groundborne vibration inside structures proximate to construction activities, based on FTA 2018. In addition, the analysis employs the FTA structural damage significance criterion of 0.12 inches/sec PPV for fragile historic buildings and 0.2 inches/sec PPV for standard construction buildings and reinforced masonry (brick or block) construction.

Potentially vibration-sensitive structures adjacent to the project site that could be affected by construction-related vibration include residences to the southwest, south, and southeast. The closest residence is located approximately 90 feet from the construction activities. This structure is presumed to be older than 50 years and is therefore assumed to be "potentially fragile." The FTA damage threshold of 0.12 inches/sec PPV is applied to the residences adjacent to the project site. The buildings are also residential in nature, and therefore the interior threshold of 72 VdB for vibration annoyance to humans is applicable.

An evaluation was conducted of vibration generation for equipment that would be used during project demolition and construction, focusing on areas proximate to the nearby potentially fragile residential building. The construction zone for the softball field renovation is within 90 feet of residence CN-1 (refer to Figure 4.5-3), and a heavy dozer or loaded truck could be operated within this distance.

Table 4.5-20 shows a construction vibration impact summary for the project based on the FTA's 2018 Noise and Vibration Manual data and methodology. The equipment is shown along with the reference data (PPV_{ref} and VdB_{ref}) from the Manual. Calculations were conducted to assess the vibration PPV and VdB at the closest separation distance from equipment operation to residence CN-1.

TABLE 4.5-20. CONSTRUCTION VIBRATION LEVELS AT CN-1 FROM SOFTBALL FIELD CONSTRUCTION

Equipment	Construction Setback Distance to Sensitive Buildings (ft)	Reference PPV for Equipment (at 25 ft)	At Minimum Setback Distance PPV (in/s)	Reference VdB for Equipment (at 25 ft)	At Minimum Setback Distance VdB
Loaded Trucks	90	0.076	0.011	86	71
Large Dozer	90	0.089	0.013	87	71

Based on the above analysis, none of the anticipated vibration levels would exceed the 0.12 inches/sec significance threshold at the closest potentially fragile (residential) building. Vibration levels would also be just below the human annoyance vibration significance threshold of 72 VdB for the closest residential structure. Other existing structures would be further from the softball field renovation construction equipment operations and would experience vibration levels less than reported in Table 4.5-20. Therefore, the softball field renovation construction-related vibration impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

The operation of the renovated softball field would not involve stationary equipment with rotating or percussive elements, nor on-going use of heavy equipment for maintenance purposes. Therefore, on-going operation of the project would not have the potential to generate substantial vibration. Operational vibration impacts of the project would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to vibration, and therefore, no mitigation measures are required.

Impact NOI-3 Cumulative Noise Impacts (Significance Standard D). The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in a significant cumulative impact related to noise. *(Less than Significant)*

This section provides an evaluation of cumulative noise impacts associated with the proposed project and past, present, and reasonably foreseeable future projects, as identified in Table 4.1-1 in Section 4.1, Introduction to Analysis, and as relevant to this topic. The geographic area potentially affected by construction-related noise and vibration in the vicinity of the proposed project would be limited to the area within approximately 500 feet of the project site, as demonstrated by the construction noise modeling results. None of the projects listed in Table 4.1-1 are located within 500 feet of the softball field renovation project. Therefore, the project would not contribute to potentially significant cumulative construction-related noise impacts that may arise from implementation of the cumulative projects. As such, the cumulative construction noise impact of the project would be *less than significant*.

For operational noise impacts, the softball field operational noise levels combined with on-going long-term operational use of the Witter Rugby Field were evaluated (see Appendix G). The existing ambient noise environment based upon inclusion of rugby activities would increase the background ambient noise levels also used as the baseline for evaluating the potential relative increase resulting from the proposed project, reducing the projects relative contribution. Table 4.5-21 and Table 4.5-22 summarize the proposed softball field operational noise levels combined with on-going long-term operational use of the Witter Rugby Field (see also Appendix G).

When combined with noise contributions from a simultaneous Rugby Match, the proposed projects relative noise increases for a typical attendance softball game and for a maximum attendance softball game would in each case be less than the FICON significance threshold (no greater than a 5 dBA increase where ambient noise level is less than 60 dBA, no greater than a 3 dBA increase where the ambient noise level is between 60 and 65 dBA). Therefore, the project's on-site operational noise would not represent a substantial contribution to a potentially significant cumulative noise impact from stationary noise sources in the vicinity and the cumulative impact of the proposed project would be *less than significant*.

TABLE 4.5-21. MODELED COMBINED RUGBY GAME AND PROJECT OPERATIONAL NOISE LEVELS FROM A "TYPICAL EVENT" WITH 1,000 SPECTATORS, L_{EQ} DBA.

Receiver		Existing Ambient Daytime Noise Level[1]	Modeled Hourly Noise Levels[4]			Impact?
No.	Address		Existing Typical Softball Event (500 Spectators) Combined With Rugby Game[2]	Project Typical Softball Event (1,000 Spectators) Combined With Rugby Game[3]	Relative Change	
LT1	67 Canyon Road	63.5	69.1	69.5	0.4	No
LT2	38 Mosswood Road	57.5	62.4	63.0	0.6	No
LT3	15 Canyon Way	55.0	63.7	63.7	0	No
LT4	280 Panoramic Way	54.5	56.2	57.6	1.4	No
P01	61 Canyon Road	63.5	70.2	70.5	0.3	No
P02	53 Canyon Road	63.5	70.5	70.6	0.1	No
P03	37 Mosswood Road	57.5	65.3	66.0	0.7	No
P04	29 Mosswood Road	57.5	66.3	66.6	0.3	No
P05	21 Mosswood Road	57.5	65.5	65.7	0.2	No
P06	44 Arden Road	55.0	59.6	61.2	1.6	No
P07	99 Arden Road	55.0	62.9	63.3	0.4	No
P08	48 Mosswood Road	57.5	56.0	59.3	3.3	No
P09	299 Panoramic Way	54.5	55.0	58.0	3.0	No
P10	8 Panoramic Place	57.5	54.3	56.0	1.7	No
P11	335-365 Panoramic Way	54.5	53.9	55.4	1.5	No

Source: Modeling by Dudek 2023 (Appendix G).

Notes: dBA = A-weighted sound level in decibels; Leq = Energy-equivalent average noise level, typically measured over a duration ranging from 10-minutes to 1-hour.

1 Existing ambient daytime noise level is the recorded average noise level (Leq) at the closest monitor location to the modeled receiver from Table 4.5-3.

2 Existing average softball game noise level includes existing softball activities with an existing average attendance of 500 spectators, plus 92 participants (592 total attendees) and traffic noise levels. Existing rugby game noise levels based on sound level measurements during March 7, 2020, Rugby Invitational Tournament (Dudek 2020). To provide a conservative analysis, the lower traffic noise contribution to the overall existing ambient noise levels is used.

3 Average project game noise level includes anticipated softball activities with an average attendance of 1,000 spectators, plus 92 participants (1,092 total attendees) and traffic noise levels. Existing rugby game noise levels based on sound level measurements during March 7, 2020, Rugby Invitational Tournament (Dudek 2020). To provide a conservative analysis, the lower traffic noise contribution to the overall predicted project typical game noise levels is used. Noise analysis assumes use of the new PA system during all use types.

TABLE 4.5-22. MODELED COMBINED RUGBY GAME AND PROJECT OPERATIONAL NOISE LEVELS FROM A "MAXIMUM EVENT" WITH 1,511 SPECTATORS, L_{EQ} DBA.

Receiver		Existing Ambient Daytime Noise Level[1]	Modeled Hourly Noise Levels[4]			Impact?
No.	Address		Existing Maximum Event (1,340 Spectators) Combined With Rugby Game[2]	Project Maximum Event (1,511 Spectators) Combined With Rugby Game[3]	Relative Change	
LT1	67 Canyon Road	63.5	71.9	70.6	< 1	No
LT2	38 Mosswood Road	57.5	63.3	63.8	0.5	No
LT3	15 Canyon Way	55.0	64.0	63.9	< 1	No
LT4	280 Panoramic Way	54.5	57.3	59.0	1.7	No
P01	61 Canyon Road	63.5	70.8	70.9	0.1	No
P02	53 Canyon Road	63.5	70.9	70.8	< 1	No
P03	37 Mosswood Road	57.5	66.9	67.0	0.1	No
P04	29 Mosswood Road	57.5	66.9	67.1	0.2	No
P05	21 Mosswood Road	57.5	65.8	66.1	0.3	No
P06	44 Arden Road	55.0	60.1	62.6	2.5	No
P07	99 Arden Road	55.0	63.7	64.0	0.3	No
P08	48 Mosswood Road	57.5	57.3	61.4	4.1	No
P09	299 Panoramic Way	54.5	56.8	59.9	3.1	No
P10	8 Panoramic Place	57.5	55.3	57.5	2.4	No
P11	335-365 Panoramic Way	54.5	54.9	56.6	1.7	No

Source: Modeling by Dudek 2023 (Appendix G).
Notes: dBA = A-weighted sound level in decibels; Leq = Energy-equivalent average noise level, typically measured over a duration ranging from 10-minutes to 1-hour.

1 Existing ambient daytime noise level is the recorded average noise level (Leq) at the closest monitor location to the modeled receiver from Table 4.5-3.

2 Existing maximum game noise level includes existing softball activities with an existing maximum attendance of 1,340 spectators, plus 92 participants (1,432 total attendees) and traffic noise levels. Existing rugby game noise levels based on sound level measurements during March 7, 2020, Rugby Invitational Tournament (Dudek 2020). To provide a conservative analysis, the lower traffic noise contribution to the overall existing ambient noise levels is used.

3 Maximum project game noise level includes anticipated softball activities with a maximum attendance of 1,511 spectators, plus 92 participants (1,603 total attendees) and traffic noise levels. Existing rugby game noise levels based on sound level measurements during March 7, 2020, Rugby Invitational Tournament (Dudek 2020). To provide a conservative analysis, the lower traffic noise contribution to the overall predicted project typical game noise levels is used. Noise analysis assumes use of the new PA system during all use types.

There are no major operational noise sources, including sources of spectator noise, in the vicinity of the project site associated with cumulative projects that could affect off-site residences, and to which project noise levels would need to be evaluated on a cumulative noise basis. With regard to traffic noise, the project would result in traffic noise contributions of 0.1 dBA or less along roadways to which it would add trips. This is not a considerable contribution to potentially significant traffic noise impacts that may arise from implementation of the cumulative projects. Therefore, the cumulative operational noise impact of the project from traffic noise would be *less than significant*.

4.6 TRANSPORTATION

This section describes the existing transportation setting of the project site and vicinity, identifies associated regulatory requirements, evaluates potential project and cumulative impacts, and identifies mitigation measures for any significant or potentially significant impacts related to the implementation of the UC Berkeley Cal Softball Field Renovation Project (project or proposed project). As further described in Section 4.6.1, Environmental Setting, the analysis is based on the typical weekday operation (non-gameday) of the proposed project, as well as during a typical and a maximum capacity gameday event occurring at the proposed softball field project site. The wildfire protection plan (WPP) is also referenced in the analysis (see Appendix C).

See Section 4.7, Wildfire, for an evaluation of evacuation based on an evacuation modeling report prepared for the proposed project.

4.6.1 ENVIRONMENTAL SETTING

As described in Chapter 3, Project Description, the existing Cal Softball Field is approximately 40,000 square feet (0.90 acres) and the total project site area is approximately 3 acres located on the campus of the University of California, Berkeley (UC Berkeley or university). The project site is located within the Hill Campus West of UC Berkeley and the Strawberry Canyon Recreation and Pool, along Centennial Drive.

This section describes key roadways, as well as transit, pedestrian, bicycle and parking facilities within the vicinity of the project site. The extent of these facilities constitutes the study area evaluated in this analysis. Regional and site access is also described. Figure 3-2 (see Chapter 3, Project Description) shows the key roadways and Figures 4.6-1 and 4.6-2 show the existing transit and bicycle facilities.

4.6.1.1 ROADWAYS

CENTENNIAL DRIVE

Centennial Drive is generally an east-west, two-lane undivided roadway located immediately to the north of the project site, and provides direct access to the existing Cal Softball Field as well as access to the Witter Lot. The road begins at Stadium Rim Way and continues eastward and northward, winding through the Berkeley hills to connect to the UC Berkeley Botanical Gardens, as well as the Lawrence Berkeley National Laboratory, before terminating at Grizzly Peak Boulevard. The only pedestrian facilities are located on the south side of the road, along the perimeter of Witter Rugby Field and the Witter Lot. Parking is not permitted, and the nearest transit stop is located at the Strawberry Canyon Recreation and Pool for UC Berkeley Bear Transit's (Bear Transit) Hill Line (H-Line), east of the Cal Softball Field. UC Berkeley classifies Centennial Drive as a Designated Secondary Bicycle Route (UC Berkeley 2014). The speed limit for the roadway is 25 MPH.

STADIUM RIM WAY

Stadium Rim Way is generally a north-south, two-lane undivided roadway located west of the project site. Stadium Rim Way provides the only route of travel from the main UC Berkeley Campus to the west to the Cal Softball Field, and partially encircles California Memorial Stadium, by connecting Gayley Road/Piedmont Avenue, Centennial Drive, Canyon Road, and Prospect Street. Specifically, Canyon Road connects from the residential hillside areas to Stadium Rim Way, and then connects directly to Prospect Street approximately 400-feet south of the Stadium Rim

Way/Canyon Road intersection. Canyon Road is entirely within the jurisdictional limits of the City of Berkeley, and has parking intermittently on the eastside of the roadway.

Pedestrian facilities along Stadium Rim Way includes the following:

- A sidewalk is located along the southern edge of the road, from Gayley Road towards California Memorial Stadium and ends at the northern end of the stadium.
- A series of intermittent bollards provide additional pedestrian connectivity towards Centennial Drive; however, the bollards are largely meant to provide protection to the fencing surrounding the perimeter of California Memorial Stadium.
- South of Centennial Drive, there are also intermittent bollards on the stadium side of the road before Stadium Rim Way terminates into Canyon Road and Prospect Street.
- Both south and north of Centennial on Stadium Rim Way there are missing bollards on the stadium side of the road and an overall lack of connectivity, paths of travel, and signage for pedestrians walking from parking areas on Stadium Rim Way south and north of Centennial Drive.

Parking is not permitted along Stadium Rim Way, and the nearest transit stop is located at the Strawberry Canyon Recreation and Pool for Bear Transit's Hill Line (H-Line), east of the Cal Softball Field. UC Berkeley classifies Stadium Rim Way as a Designated Secondary Bicycle Route (UC Berkeley 2014). The speed limit for the roadway is 25 MPH.

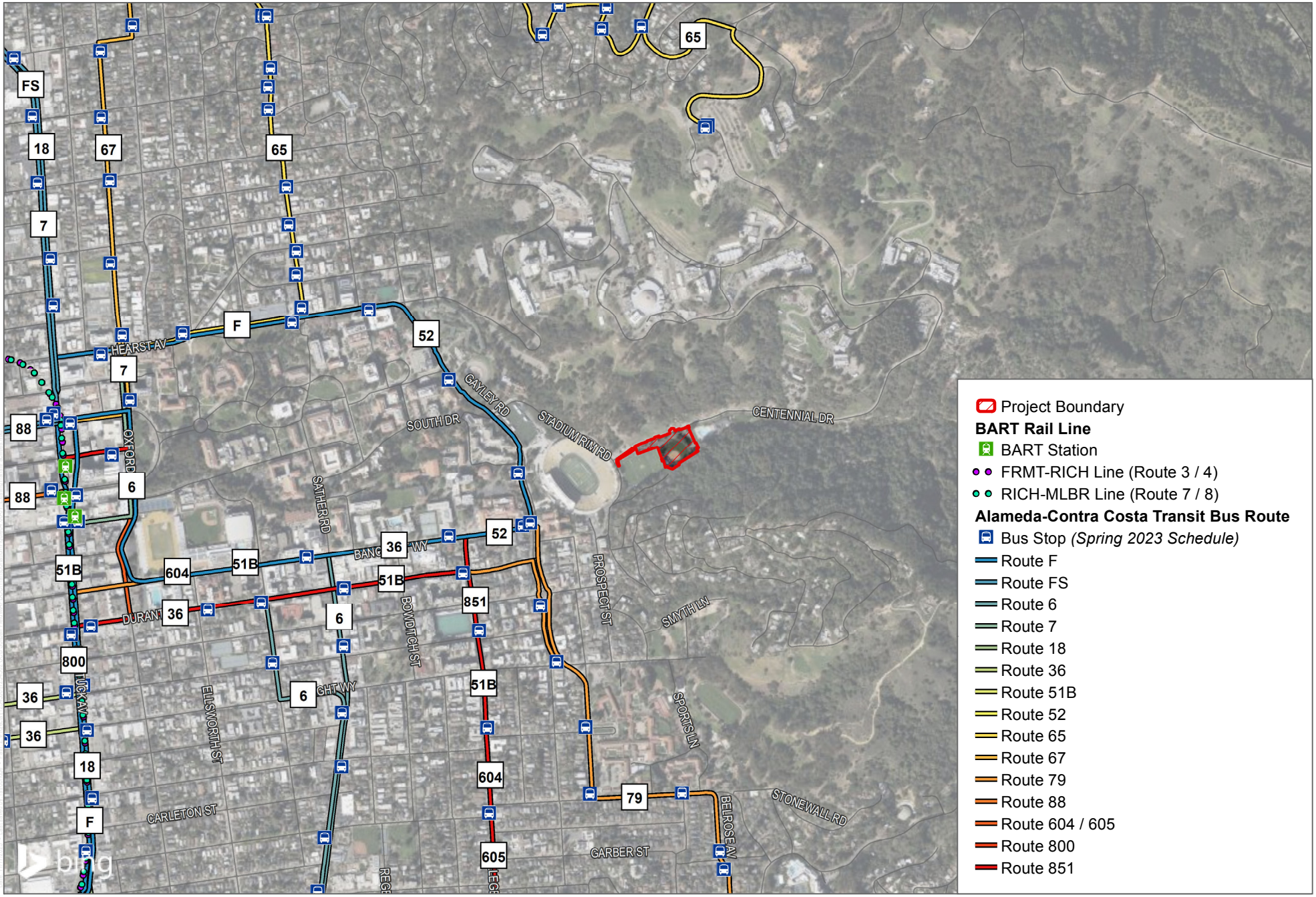
PIEDMONT AVENUE

Piedmont Avenue[1] is a north-south, two-lane roadway located to the west of the project site. The roadway is generally divided north of Dwight Way and is undivided to the south. Piedmont Avenue serves as a major corridor for UC Berkeley and the adjacent community. To the north of Stadium Rim Way, Piedmont Avenue transitions into Gayley Road and terminates to the south at Russel Street. Pedestrian facilities are located throughout the roadway on both sides of the street. The roadway is segmented by barriers towards the street's southern end, redirecting traffic flows onto neighboring streets. Parking is generally available on both sides of the street. Bus stops for Bear Transit's Night Safety South Side, Perimeter Line (P-Line), and R-Line buses, as well as AC Transit's 79, 52, and F buses, are located along the roadway. UC Berkeley classifies Piedmont Avenue as a Designated Secondary Bicycle Route south of Bancroft Way and a Designated Primary Bicycle Route to the north (UC Berkeley 2014). The speed limit for the roadway is 25 MPH.

Dwight Way

Dwight Way is an east-west, two-lane, undivided roadway located south of the project site. Dwight Way serves as a connector roadway from the project site to Canyon Road and Prospect Street, and also connects to Stadium Rim Way. The roadway is a two-way roadway to the east of Piedmont Avenue and a one-way eastbound roadway to the west of Piedmont Avenue. Pedestrian facilities and parking are generally available on both sides of the road. Bus stops for Bear Transit's Night Safety South Side and Reverse Perimeter (R-Line) buses, as well as Alameda-Contra Costa Transit District's (AC Transit) 79, 6, 18, 800, and F buses, are located along the roadway within the vicinity of the project site. The speed limit for the roadway is 25 miles per hour (MPH).

[1] Piedmont Ave is a historic landmark. The curvilinear design of Piedmont Avenue, between the transition to Gayley Road on the north and the intersection of Dwight Way on the south, is attributed to Fredrick Law Olmstead, and received City of Berkeley landmark designation status in 1990. See Section 4.4, Cultural Resources, for additional information about this historic landmark in relationship to the proposed project.



SOURCE: Bing Maps 2021, Alameda County 2018

DUDEK

0 625 1,250 Feet

FIGURE 4.6-1

Existing Transit Facilities

UC Berkeley Cal Softball Field Renovation Project

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SOURCE: Bing Maps 2020, Alameda County 2018

DUDEK

0 500 1,000 Feet

FIGURE 4.6-2

Existing Bicycle Facilities

UC Berkeley Cal Softball Field Renovation Project

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TELEGRAPH AVENUE

Telegraph Avenue is a north-south, two to four-lane, generally undivided roadway located to the west of the project site. Telegraph Avenue serves as a major corridor for UC Berkeley and the surrounding communities. North of Blake Street, Telegraph Avenue transitions from a four-lane roadway to a two-lane northbound one-way street. Pedestrian facilities and parking are available throughout the roadway on both sides of the road. Bus stops for AC Transit's 6, 60, and 800 buses are located along the roadway. Bay Wheels bicycle sharing stations are also present throughout the street. According to the City of Berkeley Bicycle Plan, Class III bicycle lanes are present on the roadway from Ashby Avenue to Dwight Way, and Class II lanes are present from Dwight Way to Sather Road (City of Berkeley 2017a). UC Berkeley also classifies Telegraph Avenue as a Designated Primary Bicycle Route south of Bancroft Way (UC Berkeley 2014). The speed limit for the roadway is 25 MPH.

SHATTUCK AVENUE

Shattuck Avenue is a north-south, four-lane, generally divided roadway located to the west of the project site. Shattuck Avenue serves as a major corridor for UC Berkeley and the surrounding community. Pedestrian and Bicycle facilities are located throughout the roadway on both sides of the street. AC Transit's 18, 800, 36, and F buses are located along the roadway. In addition, Bay Wheels bicycle sharing stations are also present throughout the street. According to the City of Berkeley Bicycle Plan, Class III bicycle lanes are present along portions of the roadway south of Derby Street (City of Berkeley 2017a). The speed limit for the roadway is 25 MPH.

COLLEGE AVENUE

College Avenue is a north-south, two-lane, undivided roadway located to the west of the project site. College Avenue serves as a major corridor for UC Berkeley and the surrounding community. Pedestrian facilities and parking are generally located throughout the roadway on both sides of the road. Bus stops for Bear Transit's Night Safety South Side, R-line, and P-line buses and AC Transit's 36, 51B, 79, and 851 buses are located along the roadway. UC Berkeley classifies College Avenue as a Designated Secondary Bicycle Route (UC Berkeley 2014). The speed limit for the roadway is 25 MPH.

ASHBY AVENUE

Ashby Avenue (California State Route 13) is an east-west, two to four-lane, undivided roadway located to the south of the project site. Ashby Avenue is a major corridor that connects Interstate 80 to the southern portion of the City of Berkeley and the surrounding community. Pedestrian and bicycle facilities are located along most of the roadway on both sides. Bus stops for AC Transit's 604, 51B, 851, and F buses are located along the roadway. The speed limit for the roadway is 25 MPH.

4.6.1.2 TRANSIT

The project site and the existing Cal Softball Field are served by both passenger rail and bus services. The San Francisco Bay Area Rapid Transit (BART) serves the Downtown Berkeley Station, which is located at 2160 Shattuck Avenue, approximately 1.3 miles to the west of the project site. The project site can also be served by Bear Transit's shuttle system and AC Transit's bus service, which collectively provide local and regional public transit within the project area.

SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT (BART)

BART is a public rail transit system that connects the San Francisco Peninsula with communities in the East Bay and South Bay, including the City of Berkeley. BART operates in five counties (San Francisco, San Mateo, Alameda, Contra Costa, and Santa Clara) with 131 miles of track and 50 stations, carrying approximately 405,000 trips on an average weekday prior to the pandemic (BART 2023).

As noted above, the proposed project would be served by BART's Downtown Berkeley Station, which is located approximately 1.2 miles to the northwest of the project site. Weekday headways for northbound and southbound trains at this station range between 10 to 45 minutes; however, headways are typically 15 minutes during a majority of the day.

UC BERKELEY BEAR TRANSIT

Bear Transit is UC Berkeley's shuttle system, servicing the campus and vicinity. Bear Transit provides transportation between Downtown Berkeley BART, parking lots, and various UC Berkeley facilities, including the Hill Campus West of UC Berkeley (UC Berkeley 2023a). Service includes four daytime routes and two nighttime safety routes. The project site would predominately be served by the H-Line, with additional service provided by the Night Safety Transit Service, P-Line, and R-Line. A brief summary of these buses is provided below.

H-Line

The H-Line shuttle service is one of four Bear Transit daytime shuttle services that provide transportation between UC Berkeley's campus and the neighboring community. The H-line runs from 7:35 a.m. to 7:30 p.m., Monday to Friday, and has the closest stop to the project site at the Strawberry Canyon Recreation and Pool, approximately 300-feet east of the existing Cal Softball Field. The H-Line also services the UC Berkeley Botanical Gardens, as well as the Lawrence Berkeley National Laboratory, and connects to BART's Downtown Berkeley Station. Headways for the H-Line are approximately 30 minutes (see Figure 4.6-1) (UC Berkeley 2023a).

P-Line

The P-Line shuttle service is one of four Bear Transit daytime shuttle services that provide transportation between UC Berkeley's campus and the neighboring community. The P-line runs from 7:00 a.m. to 7:28 p.m., Monday to Friday, and services roadways near the project site, including but not limited to College Avenue, Piedmont Avenue, University Avenue, and Shattuck Avenue. The closest P-Line shuttle stop to the project site is located along Piedmont Avenue near the School of Business and is approximately 0.3 miles from the project site. Headways for the P-Line are 30 minutes (see Figure 4.6-1) (UC Berkeley 2023a).

R-Line

Similar to the P-Line shuttle service, the R-Line shuttle service is one of four Bear Transit daytime shuttle services that provide transportation between UC Berkeley's campus and the neighboring community. This is a new route, the R-Line (Reverse Perimeter via Southside) that was instituted in September 2020. The R-line runs from 7:15 a.m. to 6:43 p.m., Monday to Friday, and services roadways near the project site, including but not limited to Shattuck Avenue, Piedmont Avenue, Channing Way, Hearst Avenue, and Dwight Way. The closest P-Line shuttle stop to the project site is located along Piedmont Avenue near the School of Business and is approximately 0.3 miles from the project site. Headways for the P-Line are 30 minutes (see Figure 4.6-1) (UC Berkeley 2023a).

Night Safety Transit Service

The Night Safety Shuttle service is an extension of the Bear Transit daytime service and provides safe nighttime transit to and from the UC Berkeley campus. Bear Transit Night Safety Shuttles are free to all and operate year-round, excluding some major holidays. From 7:30 p.m. to 2:58 a.m., shuttles run on one of two set routes between the UC Berkeley campus, BART, and residence halls. The closest Night Safety Shuttle stop to the project site is located along Piedmont Avenue near the School of Business and is approximately 0.3 miles from the project site. Headways for Night Safety Transit Service range from 15 to 30 minutes (UC Berkeley 2023b).

AC TRANSIT

AC Transit is the third-largest public bus-only transit system in California, serving 13 cities and nine adjacent unincorporated areas in Alameda and Contra Costa counties. AC Transit serves about 1.5 million East Bay passengers within a 364-square mile service area. AC Transit carries about 200,000 riders on an average weekday, along 152 service lines while generating over 20 million annual miles on its bus fleet (AC Transit 2020).

The project site would predominately be served by AC Transit's Lines F, 6, 36, 51B, 52 and 79. A brief description of each of the lines is provided below.

Line F

Line F bus provides commuter service between UC Berkeley and San Francisco during the morning and afternoon peak hours. The Line F route extends from Hearst Avenue and UC Berkeley to the Salesforce Transit Center in San Francisco. The nearest bus stop is located along Piedmont Avenue near the UC Faculty Club, approximately 0.3 miles west from the project site. Peak frequency for Line F is 17 minutes, however headways may reach up to 30 minutes during off-peak hours, and during weekends and holidays (AC Transit 2022a).

Line 6

Line 6 bus provides service between downtown Berkeley and downtown Oakland, with stops connecting the 12th Street/Oakland City Center, 19th Street Oakland, and MacArthur BART stations. The nearest bus stops for Line 6 are located along Telegraph Avenue, with the nearest bus stop to the project site located at the intersection of Telegraph Avenue and Bancroft Way, approximately 0.7 miles west of the project site. Peak frequency for Line 6 is on average every 10 to 20 minutes, and up to 30 minutes during weekends and holidays (AC Transit 2022b).

Line 36

Line 36 bus provides service between downtown Berkeley, Emeryville, and Oakland, with stops connecting to the West Oakland BART station. The nearest bus stops for Line 36 are located along Bancroft Way, with the nearest bus stop to the project site located at the intersection of Piedmont Avenue and Bancroft Way, approximately 0.3 miles west of the project site. Peak frequency for Line 36 is on average every 30 minutes during weekdays, weekends and holidays (AC Transit 2022c).

Line 51B

Line 51B provides service between the Berkeley marina and Rockridge BART station, with additional stops located at the Berkeley Amtrak station and Berkeley BART station. The nearest bus stop for Line 51B is located at the intersection of College Avenue and Bancroft Way, approximately 0.4 miles west of the project site. The frequency

of Line 51B is approximately 12 minutes during weekdays, and up to 30 minutes during weekends and holidays (AC Transit 2022d).

Line 52

Line 52 bus provides commuter service between Albany, the University Village neighborhood, downtown Berkeley, and the UC Berkeley campus during the morning and afternoon peak hours. The nearest bus stop is located along Piedmont Avenue near the UC Faculty Club, approximately 0.3 miles west from the project site. Peak frequency for Line 52 is 12 minutes, however headways may reach up to 20 minutes during off-peak hours, and during weekends and holidays (AC Transit 2022e).

Line 79

Line 79 bus services 42 bus stops and three BART Stations, including the Rockridge, Berkeley, and El Cerrito Plaza BART Stations. The Line 79 route extends from Claremont Middle School in Oakland to the El Cerrito Plaza BART Station in El Cerrito. The closest Line 79 bus stop is located at the corner of Bancroft Way and Piedmont Avenue, approximately 0.3 miles west of the project site. Headways for the Line 79 bus are approximately 30 minutes, and there is no weekend or holiday service provided (AC Transit 2022f).

4.6.1.3 PEDESTRIAN AND BICYCLE FACILITIES

PEDESTRIAN FACILITIES

Walking to, from, and within the UC Berkeley campus is a common mode of travel for many UC Berkeley faculty, staff, and students. Based on the 2019 UC Berkeley Transportation Survey, approximately 50% of UC Berkeley affiliates commute to and from the UC Berkeley campus by walking (UC Berkeley 2021a).

Pedestrian access to the project site would remain the same as the current access to the existing Cal Softball Field. Centennial Drive provides a sidewalk on the southern portion of the road and there is a painted crossing at the all-way stop controlled intersection of Stadium Rim Way and Centennial Drive. Along Stadium Rim Way there is a series of intermittent bollards that provide additional pedestrian connectivity towards Gayley Road and Piedmont Avenue; however, the bollards are largely meant to provide protection to the fencing surrounding the perimeter of California Memorial Stadium. Along Stadium Rim Way, a sidewalk is located along the southern edge of the road, from Gayley Road towards California Memorial Stadium and ends at the northern end of the stadium. South of Centennial Drive, there are also intermittent bollards on the stadium side of the road before Stadium Rim Way turns into Canyon Road and Prospect Street. Both south and north of Centennial on Stadium Rim Way there are missing bollards on the stadium side of the road and an overall lack of connectivity, paths of travel, and signage for pedestrians walking from parking areas on Stadium Rim Way south and north of Centennial Drive. A pedestrian path is also provided from the Stadium Garage to Stadium Rim Way. The pedestrian connections on Stadium Rim Way and Centennial Drive contain curb ramps that are Americans with Disabilities Act (ADA) compliant; however other locations along Stadium Rim Way are not ADA complaint (UC Berkeley 2021a).

BICYCLE FACILITIES

Based on the 2017 City of Berkeley Bicycle Plan, bicycle facilities have the following classifications:

- **Class I Multi-use Paths** provide completely separated, exclusive right-of-way for bicycling, walking, and other non-motorized uses.

- **Class II Bicycle Lanes** are striped, preferential lanes for one-way bicycle travel on roadways and may include buffer striping to add separation between vehicle lanes or parking lanes.
- **Class III Bicycle Routes** have sharrow striping and are often signed bicycle routes where people riding bicycles share a travel lane with people driving motor vehicles.
- **Class IV Cycle Track**, or separated/protected bikeway, is an on-street bicycle lane that is physically separated from motor vehicle traffic by a vertical element (raised island, bollards, or on-street parking).

Within UC Berkeley's campus, bicycle circulation is divided into primary and secondary routes. The UC Berkeley's internal roadways designated as primary bicycle routes are a mix of routes where cyclists share the roadway with vehicular traffic and routes where cyclists share paths with pedestrians. Secondary routes within the campus are provided via a network of pathways that bicyclists most often share with pedestrians (UC Berkeley 2021a).

As shown on Figure 4.6-2, the nearest bicycle facilities to the project site within the City of Berkeley are at the intersection of Channing Way and Piedmont Avenue, with Class II bicycle lanes continuing westward along Channing Way and Class III bicycle routes continuing southward along Piedmont Avenue. There are also Class II bicycle lanes along Bowditch Street, from Bancroft Way to Dwight Way. Telegraph Avenue is also considered to be a Class III bicycle lane from Ashby Avenue to Dwight Way and a Class II bicycle lane from Dwight Way to Sather Road. A Class III bicycle lane is also present on portions of Shattuck Avenue, south of Derby Street. According to the UC Berkeley Long Range Development Plan, within the boundaries of the UC Berkeley campus, the closest designated bicycle facility is a Designated Secondary Bicycle Route along Centennial Drive, Stadium Rim Way, Canyon Road, and Prospect Street. A Designated Primary Bicycle Route is present on Gayley Road and Piedmont Avenue.

4.6.1.4 PARKING

There are several options for parking near the project site, Strawberry Canyon Recreation and Pool and Witter Rugby Field, including the Stadium Garage at 2175 Piedmont Avenue (approximately 435 spaces and nearest to the project site, approximately 0.3-miles west of the existing Cal Softball Field), Underhill Garage (approximately 935 spaces, approximately 0.5 miles west of the existing Cal Softball Field), Lower Hearst Garage (approximately 600 spaces, approximately 0.8 miles northwest of the existing Cal Softball Field), and Recreational Sports Facility Garage (approximately 200 spaces, approximately 0.9 miles west of the existing Cal Softball Field). Parking occupancy data collected in September 2019 show that the parking lots vary in fullness depending on the location of each garage, floor, and type of permit required, at the peak times of the week and day. Overall, approximately 164 parking spaces are open at the nearest parking garage to the project site during a typical weekday at the Stadium Garage (UC Berkeley 2019). The Stadium Garage is between approximately 50 to 85 percent full at peak times of the week and day (depending on floor and permit type), the Underhill Garage is between 85 to 100 percent full, the Lower Hearst Garage is between 58 to 100 percent full, and the Recreational Sports Facility Garage is between 38 to 91 percent full.

Vehicles are also able to park along nearby roadways such as Piedmont Avenue, Prospect Street, Warring Street, Bancroft Way, and others that allow for non-permitted two-hour parking (subject to special zones, gamedays (for football games), and street cleaning).

4.6.1.5 TRANSPORTATION DEMAND MANAGEMENT AND MODE SHARE

A transportation demand management (TDM) program is a set of policies and programs that include incentives, information, and education to encourage people to commute by modes other than driving alone. The existing UC Berkeley TDM Strategic Plan is designed to address faculty, staff, and student travel to the UC Berkeley campus and includes strategies that emphasize alternative commuting options such as public transit, biking, walking,

carpooling, and car sharing. The key elements of the existing UC Berkeley TDM Strategic Plan include: transit pass subsidies, shuttle services including night safety shuttle service, permit parking priced to influence demand, pre-tax commuter benefits program, bike share program, carpool program, online commute planning tool, bicycle parking, carshare opportunities, and a designated TDM administer that manages the TDM program (UC Berkeley 2021a). According to a 2019 UC Berkeley Transportation Survey, which assessed the commute modes of different UC Berkeley population groups (i.e., students, faculty and staff), approximately 5 percent of students, 44 percent of staff, and 46 percent of faculty drive to campus (UC Berkeley 2021a). According to a travel survey conducted in April 2022 for the proposed project approximately 95 percent of spectators drove their own vehicle, 3 percent utilized a transportation network company (i.e., Uber or Lyft), and 2 percent walked to the Cal Softball Field on a game day (National Data and Surveying Services 2022). Therefore, 98 percent of spectators arrived at the Cal Softball Field by vehicle, based on the 2022 travel survey.

4.6.2 REGULATORY FRAMEWORK

4.6.2.1 FEDERAL

There are no federal plans, policies, regulations, or laws related to transportation applicable to the proposed project.

4.6.2.2 STATE

CALIFORNIA SENATE BILL 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, which created a process to change the way that transportation impacts are analyzed under the California Environmental Quality Act (CEQA). SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to level of service (LOS) for evaluating transportation impacts. Under the new transportation guidelines, LOS, or vehicle delay, will no longer be considered an environmental impact under CEQA. The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018. These guidelines identify vehicle miles traveled (VMT) as the most appropriate measure of transportation impacts under CEQA and were fully implemented as of July 1, 2020.

SB 743 requires California to reduce greenhouse gas emissions by 40% below 1990 levels by 2030. The California Air Resources Board has determined that it is not possible to achieve this goal without reducing VMT growth and California needs to reduce per capita VMT across all economic sectors. SB 743 is primarily focused on passenger-cars and the reduction in per capita VMT as it relates to individual trips. The OPR Technical Advisory (OPR 2018) provides guidance and tools to properly carry out the principles within SB 743 and how to evaluate transportation impacts under CEQA.

VMT Screening

Screening Threshold for Small Projects

Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency

with a Sustainable Communities Strategy (SCS) or general plan, projects that generate or attract fewer than 110 trips per day[2] generally may be assumed to cause a less-than-significant transportation impact.

Map-Based Screening for Residential and Office Projects

Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Maps created with VMT data, for example from a travel survey or a travel demand model, can illustrate areas that are currently below threshold VMT. Because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis.

Presumption of Less Than Significant Impact Near Transit Stations

CEQA Guideline Section 15064.3, Subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop[3] or an existing stop along a high quality transit corridor[4] will have a less-than-significant impact on VMT. These specific regions are also called Transit Priority Areas (TPA). This presumption would not apply, however, if project specific or location-specific information indicates that the project will still generate significant levels of VMT. For example, the presumption might not be appropriate if the project:

- Has a Floor Area Ratio (FAR) of less than 0.75.
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking).
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization).
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

If any of these exceptions to the presumption might apply, the lead agency should conduct a detailed VMT analysis to determine whether the project would exceed VMT thresholds. Additionally, there is also a presumption of less than significant impact for affordable residential developments.

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2 The CEQA Guidelines provide a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area (CEQA Guidelines Section 15301, subd. (e)(2).) Based on the OPR Technical Advisory (OPR 2018), typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

3 Public Resources Code Section 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

4 Public Resources Code Section 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

VMT Significance Thresholds

OPR's recommended VMT significance thresholds vary depending on the three types of land use projects because residential, office, and retail projects tend to have the greatest influence on VMT. The recommended VMT significance thresholds are consistent with the achievement of the state's climate goals and include:

- Threshold for Residential Projects: A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the SCS for that city, and should be consistent with the SCS.
- Threshold for Office Projects: A proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.
- Threshold for Retail Projects: A net increase in total VMT may indicate a significant transportation impact.

While the OPR Technical Advisory indicates that Lead Agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types, UC Berkeley has not developed more specific VMT thresholds or thresholds for other land use types.

4.6.2.3 UNIVERSITY OF CALIFORNIA

UNIVERSITY OF CALIFORNIA SUSTAINABLE PRACTICES POLICY

The UC Sustainable Practices Policy lays out sustainability goals and strategies for all UC system campuses and medical centers and covers climate and energy, transportation, water, green building, waste, food, and operations. The UC recognizes that single-occupant-vehicle (SOV) commuting is a primary contributor to commute GHG emissions and localized transportation impacts, and has set the following goals related to transportation:

- By 2025, each location shall strive to reduce its percentage of employees and students commuting by SOV by 10% relative to its 2015 SOV commute rates.
- By 2050, each location shall strive to have no more than 40% of its employees and no more than 30% of all employees and students commuting to the location by SOV.
- Each location (university) will develop a business-case analysis for any proposed parking structures serving University affiliates or visitors to campus to document how a capital investment in parking aligns with each university's Climate Action Plans and/or sustainable transportation policies.

UC BERKELEY SUSTAINABILITY PLAN

UC Berkeley created the Sustainability Plan to provide more detail on goals and strategies that will be implemented to meet the UC Sustainable Practices Policy. The UC Berkeley Sustainability Plan includes the following goals:

- Reduce employee drive-alone rate to 36% by 2025 (for UC Berkeley only).
- By 2025, reduce the percentage of employees and student commuting alone in vehicles by 10% relative to 2015 (across all University of California campuses).

The UC Berkeley Sustainability Plan provides the following key strategies to meet this goal:

- Expand and market a comprehensive, environmentally sustainable, safe, accessible, and equitable multimodal transportation program to reduce parking demand and carbon emissions and increase sustainable commute and intra-campus travel.
- Support campus housing initiative that includes new student and other campus housing within walking distance and transit to campus.
- Update the Campus Bicycle Plan.
- Participate in efforts to evaluate expansion of telework options for employees.
- Promote AC Transit route planning, services, and amenities to increase campus ridership.
- Support continuing activities to strengthen active transportation options.
- Implement strategies identified in the new campus Long Range Development Plan/Environmental Impact Report and Campus Master Plan.

UC BERKELEY CAMPUS DESIGN STANDARDS

UC Berkeley created the Campus Design Standards to guide design and construction professionals to complete lasting, high-quality additions to the UC Berkeley built environment. The Campus Design Standards, along with applicable codes, ensure that new construction and renovation projects at UC Berkeley integrate industry best practices and experience with existing campus buildings, infrastructure, grounds, and maintenance issues. Key sections of the Campus Design Standards relevant to transportation include bicycle infrastructure and standards for bus stops.

UC BERKELEY CONTINUING BEST PRACTICES

UC Berkeley applies continuing best practices (CBPs) relevant to transportation as part of the project approval process. CBPs that are implemented as part of the proposed project are identified in Chapter 3, Project Description and provided in Appendix B, UC Berkeley Continuing Best Practices, of this Draft EIR. Applicable CBPs, which include both those implemented as part of the proposed project and those implemented as part of ongoing operations, are identified and assessed for their potential to reduce adverse physical impacts later in this section under Section 4.6.3, Impacts and Mitigation Measures.

4.6.2.4 REGIONAL

PLAN BAY AREA 2050

California's 2008 SB 375 requires each of the state's 18 metropolitan areas to develop a Sustainable Communities Strategy (SCS), which is an integrated transportation, land use, and housing plan that addresses ways to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) jointly approved *Plan Bay Area* on July 18, 2013, with an update, *Plan Bay Area 2050*, adopted on October 21, 2021 (MTC and ABAG 2021).

Plan Bay Area 2050 is a long-range plan charting the course for the future of the nine-county San Francisco Bay Area. Plan Bay Area 2050 focuses on four key elements—housing, the economy, transportation and the environment—and identifies goals, policies, and actions to make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. *Plan Bay Area 2050* is the SCS for the nine-county San Francisco Bay Area. *Plan Bay Area 2050* identifies Priority Development Areas in existing urban areas near existing or planned transit service to accommodate the majority of the expected growth across the nine-county San

Francisco Bay Area. The agencies estimate approximately 72 percent of housing and 48 percent of job growth will occur in the priority development areas between 2015 and 2050. The project site is not located within a priority development area.

While Plan Bay Area 2050 concluded that the Bay Area region consistently ranks as one of the most congested metropolitan areas of the nation, additional roadway capacity would not solve the problem and recommendations focused on strategies to improve efficiency on existing highways and transit networks. Plan Bay Area 2050 recommends increasing non-automobile travel, in comparison to all other mode shares, and reducing VMT per capita and per employee. Recommendations include promoting transit-oriented development, maintenance and optimization of the existing transportation system, and active transportation modes such as bicycling and walking, and the overall strategy would seek to reduce regional and state emissions, as well as improve mobility in the Bay Area.

4.6.2.5 LOCAL

As discussed in Chapter 3, Project Description, 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. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. Because the proposed project would add vehicles and pedestrians to the City of Berkeley roadways, City of Berkeley transportation policies are considered in the evaluation of the standard of significance related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (see Section 4.6.3.1, Standards of Significance). Therefore, relevant City of Berkeley General Plan policies are included herein. The evaluation of potential conflicts with these policies is provided in Impact TRA-1 in Section 4.6.3.3, Impact Analysis.

CITY OF BERKELEY GENERAL PLAN

The City of Berkeley General Plan Transportation Element contains maps of the citywide transit network, vehicular circulation network, bicycle circulation network, and emergency access and evacuation network. It also contains 53 policies to achieve the following six objectives:

1. Maintain and improve public transportation services throughout the city.
2. Reduce automobile use and VMT in Berkeley, and the related impacts by providing and advocating for transportation alternatives and subsidies that facilitate voluntary decisions to drive less.
3. Improve quality of life in Berkeley neighborhoods by calming and slowing traffic on all residential streets.
4. Maintain and improve the existing infrastructure and facilities for the movement of people, goods, and vehicles within and through the city.
5. Improve management of public parking to better serve needs of residents, businesses, and visitors.
6. Create a model bicycle- and pedestrian-friendly city where bicycling and walking are safe, attractive, easy, and convenient forms of transportation and recreation for people of all ages and abilities.

Most of the City of Berkeley General Plan transportation policies have a bearing on UC Berkeley faculty, staff, students, and visitors, due to UC Berkeley's central location within the city. However, policies listed below directly address issues related to the proposed project:

- **Policy T-6 Transportation Services Fee.** Ensure that new development does not impact existing transportation services and facilities.
- **Policy T-10 Trip Reduction.** To reduce automobile traffic and congestion and increase transit use and alternative modes in Berkeley, support, and when appropriate require, programs to encourage Berkeley citizens and commuters to reduce automobile trips, such as:
  - Participation in a citywide Eco-Pass Program.
  - Participation in the Commuter Check Program.
  - Carpooling and provision of carpool parking and other necessary facilities.
  - Telecommuting programs.
  - "Free bicycle" programs and electric bicycle programs.
  - "Car-sharing" programs.
  - Use of pedal-cab, bicycle delivery services, and other delivery services.
  - Programs to encourage neighborhood-level initiatives to reduce traffic by encouraging residents to combine trips, carpool, telecommute, reduce the number of cars owned, shop locally, and use alternative modes.
  - Programs to reward Berkeley citizens and neighborhoods that can document reduced car use.
  - Limitations on the supply of long-term commuter parking and elimination of subsidies for commuter parking.
  - No-fare shopper shuttles connecting all shopping districts throughout the City.
- **Policy T-12 Education and Enforcement.** Support, and when possible require, education and enforcement programs to encourage carpooling and alternatives to single-occupant automobile use, reduce speeding, and increase pedestrian, bicyclist, and automobile safety.
- **Policy T-13 Major Public Institutions.** Work with other agencies and institutions, such as the University of California, the Berkeley Unified School District, Lawrence Berkeley Laboratory, Vista Community College, the Alameda County Court, and neighboring cities to promote Eco-Pass and to pursue other efforts to reduce automobile trips.
- **Policy T-17 Transportation Planning.** Involve local residents, businesses, and institutions in all stages of transportation planning.
- **Policy T-18 Transportation Impact Analysis and Vehicle Miles Traveled (policy adopted by the City of Berkeley on November 19, 2020 to replace the previous Level of Service policy).** When considering transportation impacts under the California Environmental Quality Act, the City shall consider how a plan or project affects all modes of transportation, including transit riders, bicyclists, pedestrians, and motorists, to determine the transportation impacts of a plan or project. Plans and projects shall be designed to deliver significant benefits to travel by pedestrians, bicycle, or transit, and/or reduced impacts on air quality, greenhouse gas emissions, and safety. For the purposes of CEQA, Vehicle Miles Traveled (VMT) shall be the metric used to analyze the transportation impacts of a plan or project.
- **Policy T-23 Truck Routes and Truck Traffic.** To the greatest extent possible, protect residential streets from hazardous or heavy traffic.
- **Policy T-28 Emergency Access.** Provide for emergency access to all parts of the city and safe evacuation routes.
- **Policy T-37 University of California and Large Employer Parking.** Encourage large employers, such as the University of California and Berkeley Unified School District, to allocate existing employee parking on the basis of a) need for a vehicle on the job, b) number of passengers carried, c) disability, and d) lack of alternative public transportation.

- **Policy T-38 Inter-Jurisdictional Coordination.** Establish partnerships with adjacent jurisdictions and agencies, such as the University of California and the Berkeley Unified School District, to reduce parking demand and encourage alternative modes of transportation.
- **Policy T-42 Bicycle Planning.** Integrate the consideration of bicycle travel into City planning activities and capital improvement projects, and coordinate with other agencies to improve bicycle facilities and access within and connecting to Berkeley.
- **Policy T-43 Bicycle Network.** Develop a safe, convenient, and continuous network of bikeways that serves the needs of all types of bicyclists and provide bicycle-parking facilities to promote cycling.
- **Policy T-50 Sidewalks.** Maintain and improve sidewalks in residential and commercial pedestrian areas throughout Berkeley and in the vicinity of public transportation facilities so that they are safe, accessible, clean, attractive, and appropriately lighted.
- **Policy T-51 Pedestrian Priority.** When addressing competing demands for sidewalk space, the needs of the pedestrian shall be the highest priority.
- **Policy T-52 Pedestrian Safety and Accessibility.** Provide safe and convenient pedestrian crossings throughout the City.

4.6.3 IMPACTS AND MITIGATION MEASURES

4.6.3.1 STANDARDS OF SIGNIFICANCE

The standards of significance used to evaluate the impacts of the proposed project related to transportation are based on Appendix G of the CEQA Guidelines, as listed below. The proposed project would result in a significant impact if it would:

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.
E. In combination with past, present, and reasonably foreseeable projects, result in a cumulative impact.

4.6.3.2 ANALYTICAL METHODS

CONSTRUCTION

As detailed in Chapter 3, Project Description, the proposed project would include the renovation of the existing Cal Softball Field. Project construction would occur during weekdays, Monday to Friday, from 7:00 a.m. to 7:00 p.m., with limited weekend hours if needed and is expected to last approximately 13 months. The proposed project would result in the temporary addition of various construction vehicles to the project site and vicinity of the proposed project. Construction vehicles would include haul trucks, vendor trucks, and worker vehicles over the course of the combined 13-month construction period. Construction activities for the project would entail the following phases: 1) demolition of some existing facilities, grading and excavation, tree removal, trenching for utilities, and site preparation; 2) construction of the new field, concourse, and circulation and utility improvements; and 3) finishing of the field, building interior, circulation and signage, and installation of landscaping and fencing.

The renovated softball field would be in the same location as the existing field and would remain oriented to the northeast with home plate at the southwest corner of the site. The project involves construction of an approximately 30,500-square-foot two-story structure housing the bullpen, the concourse, and the press box, which would be built on the southwest corner of the site adjacent to a new fan concourse wrapping around up to 1,511 permanent seats (see Chapter 3, Project Description, Figures 3-6 through 3-8). Approximately 22,000 square feet would be ballpark spaces including bleachers, bullpens and dugouts; and approximately 7,927 square feet would be enclosed spaces including locker rooms, press box, lounges, and training room.

The construction phasing schedule and construction vehicle trip assumptions are provided in Appendix A-1, Notice of Preparation/Initial Study. As the number of vehicles traveling to and from the project site is expected to fluctuate over the combined 13-month construction period such that there is no regular pattern of traffic behavior and would consist of vehicles that are only temporarily visiting the site during construction and would be eliminated from the roadway network upon completion of the proposed project, this analysis provides a qualitative assessment of project traffic and evaluates the relative effect of temporary construction traffic on the existing circulation system.

All construction would adhere to UC Berkeley guidelines including the UC Berkeley Campus Design Standards, as well as relevant CBP's as described in Section 4.6.3.3, Impact Analysis. Specifically, UC Berkeley will require contractors to implement a Construction Traffic Management Plan in order to reduce potential impacts to roadway circulation and parking near the project site (see CBP TRAN-5 in Impact TRA-1). The Construction Traffic Management Plan would address job-site access, vehicle circulation, bicycle, and pedestrian safety, and be coordinated with the City of Berkeley Public Works Department if City streets would be affected; however, work in City streets is not anticipated.

OPERATION

Trip Generation

As described in Chapter 3, Project Description, the proposed project would renovate the existing Cal Softball Field and the hours of field operations with the proposed project would remain unchanged with the project. Existing and proposed softball field hours of operations are Monday through Sunday 8:00 a.m. to 10:00 p.m. Evening games are and will continue to be scheduled to ensure the softball field is cleared no later than 10 p.m. During the fall, the softball field would be used for practices, intramural play, campus/clinics, and other occasional daytime competitions.

Due to the variety and concentration of some events and activities, it is expected that the proposed project would have a varying degree of use throughout the year and throughout any given day. Therefore, in order to provide a conservative assessment of the potential impact of the proposed project, three different scenarios are analyzed for the number of persons, number of vehicles, and vehicle trips generated daily: typical weekday use, and typical and maximum event use for matches. As reported in Chapter 3, Project Description, the five-year game average attendance between 2016 to 2022 during the regular season was approximately 500 spectators. The average attendance with the implementation of the proposed project is estimated to increase the average attendance to 1,000 spectators, resulting in a net increase of 500 spectators. In comparison, the maximum event is based on a "sell-out" event at the softball field, which would increase from 1,340 spectators under existing conditions to 1,511 spectators with the implementation of the proposed project, for a net increase of 171 spectators, based on the increase in the number of seats with the proposed project. Table 4.6-1 describes these scenarios, and each scenario is further described below.

TABLE 4.6-1. TRANSPORTATION ANALYSIS PARTICIPANT AND SPECTATOR USE SCENARIOS

Participants and Spectators	Existing Conditions	Proposed Project		
		Typical Weekday Use	Typical Event	Maximum Event
Participants (Athletes, Coaches and Staff)	60 - 1,432	80	92	92
Spectators		0	1,000	1,511
Total Participants and Spectators	**60 - 1,432**	**80**	**1,092**	**1,603**

As indicated above, these use scenarios and the associated net increase in participants and spectators with the proposed project are similar to existing conditions because the Cal Softball Field would host the same type of typical and maximum type events that are currently hosted. However, a somewhat larger capacity to accommodate spectators and newer facilities would create a net increase in total users across all use scenarios.

Typical Weekday Use. During a typical weekday (non-gameday), and what would be considered the most frequently occurring scenario, the proposed project is expected to draw UC Berkeley student athletes, staff, and recreational student participants throughout the day. Trip generation estimates and data is based on information provided by UC Berkeley for the average participants during typical use of the facilities, as presented in Chapter 3, Project Description. Due to the proximity to the larger UC Berkeley campus as well as student residences in the area, many of the participants during the typical weekday use scenario would arrive and depart the Cal Softball Field using non-vehicle modes of transportation (such as pedestrian, bicycle, and transit modes). It is estimated that compared to the existing Softball Field, the number of student athletes and staff would remain the same, and due to the improved facilities, the number of students would increase by double (an increase of 20 new daily participants), consisting of students in intramural sports. A relatively small number of participants, proportional to the total number of participants, would drive to and from the project site (approximately 5 percent of athletes and students, consisting of a net increase of 2 daily vehicle trips), based on a 2019 UC Berkeley Transportation Survey (see Section 4.6.1.5, Transportation Demand Management and Mode Share). While it is highly unlikely that UC athletes and staff drive to the Cal Softball Field after arriving on the UC Berkeley campus, the 2019 UC Berkeley Transportation Survey that assesses commute travel modes was used to provide a conservative estimate of vehicle trip generation for students and staff. For a conservative assessment, it was estimated that all vehicle trips would be single occupancy. Table 4.6-2 shows the estimated Cal Softball Field net project trip generation for the typical weekday use of the proposed project.

As shown in Table 4.6-2, during the typical weekday use of the Cal Softball Field, out of the approximately 20 new daily participants (see Table 4.6-1), and after accounting for the proportion of participants that would drive to the site, there would be 1 total vehicle that would drive to the project site, resulting in 2 total daily vehicle trips.

TABLE 4.6-2. NET INCREASE IN PROJECT TRIP GENERATION FROM TYPICAL WEEKDAY USE

Participant Type	Daily No. of Persons	Non-Vehicle Travel	Vehicle Travel	AVO1	Daily No. of Vehicles	Daily Vehicle Trips
Existing Cal Softball Field[2,3]						
UC Berkeley Student Athletes[4]	35	33	2	1.0	2	4
UC Berkeley Staff[5]	5	3	2	1.0	2	4
UC Berkeley Students[4]	20	19	1	1.0	1	2
Total Existing Participants	*60*					*10*
Existing Total					**5**	**10**

TABLE 4.6-2. NET INCREASE IN PROJECT TRIP GENERATION FROM TYPICAL WEEKDAY USE

Participant Type	Daily No. of Persons	Non-Vehicle Travel	Vehicle Travel	AVO1	Daily No. of Vehicles	Daily Vehicle Trips
Proposed Project Cal Softball Field[2,3]						
UC Berkeley Student Athletes[4]	35	33	2	1.0	2	4
UC Berkeley Staff[5]	5	3	2	1.0	2	4
UC Berkeley Students[4]	40	38	2	1.0	2	4
Total Proposed Participants	*80*					*12*
Proposed Project Total					**6**	**12**
Cal Softball Field[2,3]						
UC Berkeley Student Athletes[4]	0	0	0	0	0	0
UC Berkeley Staff[5]	0	0	0	0	0	0
UC Berkeley Students[4]	20	19	1	1.0	1	2
Total Net New Participants	*20*					*2*
Proposed Project Net Total					**1**	**2**

Notes:

1 Total vehicles based on an Average Vehicle Occupancy (AVO).

2 While the Cal Softball Field would accommodate an increase in UC Berkeley student participants, it would not increase UC Berkeley athletics, or faculty and staff population.

3 Trip generation estimates and data based on information provided by UC Berkeley for the average participants during typical use of the facilities.

4 Approximately 5 percent of UC Berkeley students (and athletes) drive alone (AVO = 1.0). UC Berkeley 2019 Transportation Survey data, reflecting only the population that commutes; summarized by Fehr & Peers, 2020 within the UC Berkeley 2021 LRDP and Housing Projects #1 and #2 Draft Environmental Impact Report EIR (UC Berkeley 2021b).

5 Approximately 44 percent of UC Berkeley employees drive alone (AVO = 1.0). UC Berkeley 2019 Transportation Survey data, reflecting only the population that commutes; summarized by Fehr & Peers, 2020 within the UC Berkeley 2021 LRDP and Housing Projects #1 and #2 Draft Environmental Impact Report EIR (UC Berkeley 2021b).

Typical Event. Currently, a typical Cal Softball game has an average spectator crowd of approximately 500 persons and 92 game participants (including players, coaches, and staff) totaling 592 persons at the Cal Softball Field. For the renovated Cal Softball Field, it is expected that the average spectator crowd would increase to approximately 1,000 persons and the number of game participants would remain the same, totaling 1,092 persons (see Table 4.6-1). This is based on the average size of existing Cal softball matches (see Chapter 3, Project Description) but also accounts for the increase in attendance capacity with the proposed project, as well as the potential for an increase in attendance due to the draw of a renovated facility with updated amenities. The frequency of such events is expected to occur up to 25 times per year, which is a conservative assumption of the maximum potential number of games to consider the greatest possible impact of the proposed project. Trip generation estimates, and data is based on information provided by UC Berkeley for the typical event during normal gameday use of the facilities, as described in Chapter 3, Project Description.

A travel survey was conducted for the proposed project by National Data and Surveying Inc. on April 16, 2022, that surveyed approximately 147 respondents out of the approximately 785 total spectators in attendance at a UC softball game. It is important to note that the survey was conducted for a women's softball game and included an opponent from a large university local to the Bay Area (Stanford University), and represented a period of higher than average attendance for a Cal Softball match. It was determined that a large number of spectators would drive to attend a Cal Softball match (approximately 98 percent of spectators drove, with approximately 3.1 persons per vehicle) (National Data and Surveying Services 2022). The mode share observed from the survey was applied to the 500 new spectators, and it is expected that coaches and athletes would remain utilizing the same mode share. Thus, while these survey results were used to estimate a 'Typical Event,' they actually represent conservative assumptions and would likely result in higher-than-average attendance and driving. Table 4.6-3 shows the estimated project trip generation for a typical (average) gameday event.

TABLE 4.6-3. NET INCREASE IN PROJECT TRIP GENERATION FROM TYPICAL EVENT

Participant Type	Daily No. of Persons	Non-Vehicle Travel	Vehicle Travel	AVO[1]	Daily No. of Vehicles	Daily Vehicle Trips
Existing Cal Softball Field[2]						
UC Berkeley Student Athletes[3]	30	28	2	1.0	2	4
Visiting Student Athletes[4]	30	0	30	30.0	1	2
UC Berkeley Staff[5]	27	15	12	1.0	12	24
Visiting Staff[4]	5	0	5	5.0	0	0
Spectators[6]	500	10	490	3.1	158	316
Total Existing Participants and Spectators	*592*					*346*
Existing Total					**173**	**346**
Proposed Project Cal Softball Field[2]						
UC Berkeley Student Athletes[3]	30	28	2	1.0	2	4
Visiting Student Athletes[4]	30	0	30	30.0	1	2
UC Berkeley Staff[5]	27	15	12	1.0	12	24
Visiting Staff[4]	5	0	5	5.0	0	0
Spectators[6]	1,000	20	980	3.1	316	632
Total Proposed Participants and Spectators	*1,092*					*662*
Proposed Project Total					**331**	**662**
Cal Softball Field[2]						
UC Berkeley Student Athletes[3]	0	0	0	0	0	0
Visiting Student Athletes[4]	0	0	0	0	0	0
UC Berkeley Staff[5]	0	0	0	0	0	0
Visiting Staff[4]	0	0	0	0	0	0
Spectators[6]	500	10	490	3.1	158	316
Total Net New Participants and Spectators	*500*					*316*
Proposed Project Net Total					**158**	**316**

Notes:

1. Total vehicles based on an Average Vehicle Occupancy (AVO).
2. Trip generation estimates and data based on information provided by UC Berkeley for the typical number of participants during standard use of the facilities.
3. Approximately 5 percent of UC Berkeley students (athletes) drive alone (AVO = 1.0). UC Berkeley 2019 Transportation Survey data, reflecting only the population that commutes; summarized by Fehr & Peers, 2020 within the UC Berkeley 2021 LRDP and Housing Projects #1 and #2 Draft Environmental Impact Report EIR (UC Berkeley 2021b).
4. Visiting student athletes and staff would be expected to arrive to the site by either bus or van. In order to provide a conservative estimate, an AVO of 10.0 was utilized.
5. Approximately 44 percent of UC Berkeley employees drive alone (AVO = 1.0). UC Berkeley 2019 Transportation Survey data, reflecting only the population that commutes; summarized by Fehr & Peers, 2020 within the UC Berkeley 2021 LRDP and Housing Projects #1 and #2 Draft Environmental Impact Report EIR (UC Berkeley 2021b).
6. Approximately 98% of spectators drive, with AVO of 3.1. This is based on trip data gathered during a travel survey conducted during a UC Berkeley softball game vs Stanford University. The survey was conducted by National Data & Surveying Services, on Saturday, April 16, 2022.

As shown in Table 4.6-3, during the occurrence of a typical gameday event, out of the approximately 500 new daily participants and spectators and after accounting for the proportion of participants and spectators that would drive to the site, there would be 158 net total vehicles that would drive to the project site, resulting in 316 new net total daily vehicle trips.

Maximum Event. During collegiate competitions, the maximum capacity that the existing Cal Softball field can accommodate is 1,340 persons and 92 game participants (including players, coaches, and staff) totaling 1,432 total persons. For the renovated Cal Softball Field, it is expected that the average spectator crowd would increase to approximately 1,511 persons and the number of game participants would remain the same, therefore totaling 1,603 persons (see Table 4.6-1). The frequency of such events is expected to occur up to 25 times per year and is

intended to provide a conservative assessment of the maximum potential impact of the proposed project based on the type of uses described.

Trip generation estimates and data is based on information provided by UC Berkeley for the maximum event during greatest use of the facilities, and is based on the total "sell-out" capacity increasing from 1,340 spectators to 1,511 spectators (see Chapter 3, Project Description). Prior travel survey data as described above, was also used in the trip generation estimates below. Table 4.6-4 shows the estimated project trip generation for a maximum event.

TABLE 4.6-4. NET INCREASE IN PROJECT TRIP GENERATION FROM MAXIMUM EVENT

Participant Type	Daily No. of Persons	Non-Vehicle Travel	Vehicle Travel	AVO1	Daily No. of Vehicles	Daily Vehicle Trips
Existing Cal Softball Field[2]						
UC Berkeley Student Athletes[3]	30	28	2	1.0	2	4
Visiting Student Athletes[4]	30	0	30	30.0	1	2
UC Berkeley Staff[5]	27	15	12	1.0	12	24
Visiting Staff[4]	5	0	5	5.0	0	0
Spectators[6]	1,340	27	1,313	3.1	424	848
Total Existing Participants and Spectators	*1,432*					*878*
Existing Total					**439**	**878**
Proposed Project Cal Softball Field[2]						
UC Berkeley Student Athletes[3]	30	28	2	1.0	2	4
Visiting Student Athletes[4]	30	0	30	30.0	1	2
UC Berkeley Staff[5]	27	15	12	1.0	12	24
Visiting Staff[4]	5	0	5	5.0	0	0
Spectators[6]	1,511	30	1,481	3.1	478	956
Total Proposed Participants and Spectators	*1,603*					*986*
Proposed Project Total					**493**	**986**
Cal Softball Field[2]						
UC Berkeley Student Athletes[3]	0	0	0	0	0	0
Visiting Student Athletes[4]	0	0	0	0	0	0
UC Berkeley Staff[5]	0	0	0	0	0	0
Visiting Staff[4]	0	0	0	0	0	0
Spectators[6]	171	3	168	3.1	54	108
Total Net New Participants and Spectators	*171*					*108*
Proposed Project Total					**54**	**108**

Notes:

1 Total vehicles based on an Average Vehicle Occupancy (AVO).

2 Trip generation estimates and data based on information provided by UC Berkeley for the maximum number of participants during peak use of the facilities.

3 Approximately 5 percent of UC Berkeley students (athletes) drive alone (AVO = 1.0). UC Berkeley 2019 Transportation Survey data, reflecting only the population that commutes; summarized by Fehr & Peers, 2020 within the UC Berkeley 2021 LRDP and Housing Projects #1 and #2 Draft Environmental Impact Report EIR (UC Berkeley 2021b).

4 Visiting student athletes and staff would be expected to arrive to the site by either bus or van. In order to provide a conservative estimate, an AVO of 10.0 was utilized.

5 Approximately 44 percent of UC Berkeley employees drive alone (AVO = 1.0). UC Berkeley 2019 Transportation Survey data, reflecting only the population that commutes; summarized by Fehr & Peers, 2020 within the UC Berkeley 2021 LRDP and Housing Projects #1 and #2 Draft Environmental Impact Report EIR (UC Berkeley 2021b).

6 Approximately 98% of spectators drive, with AVO of 3.1. This is based on trip data gathered during a travel survey conducted during a UC Berkeley softball game vs Stanford University. The survey was conducted by National Data & Surveying Services, on Saturday, April 16, 2022.

As shown in Table 4.6-4, during the occurrence of a maximum event, out of the approximately 171 new daily participants and spectators, and after accounting for the proportion of participants and spectators that would drive to the site, there would be 54 net total vehicles that would drive to the project site, resulting in 108 new net total daily vehicle trips. It should be noted that the net increase in project trip generation from the typical (average) gameday event (Table 4.6-3) is larger than the net increase in project trip generation from the maximum gameday event (Table 4.6-4).

Project Transportation Demand Management Measures

As indicated in Chapter 3, Project Description, the project includes game-day transportation demand management (TDM) measures that would reduce trip generation and associated automobile congestion, increase pedestrian and bicycle use, and encourage transit with the implementation of the proposed project (see Impact TRA-1 for details). However, it is not possible to accurately assess the trip reduction associated with these TDM measures and therefore they were not considered in the trip generation estimates presented in Tables 4.6-2 through 4.6-4. Thus, these estimates represent very conservative assumptions.

VMT Screening and Analysis

The OPR guidelines and applicable VMT screening criteria are used in the analysis in Section 4.6.3.3, Impact Analysis, to determine whether the proposed project could have a potentially significant VMT impact. As indicated in the same section, analysis of smaller, less complex projects can be simplified by using a VMT screening process identified in the OPR Technical Advisory. OPR suggests that screening criteria may be applied to identify when land use projects can be expected to cause a less-than-significant VMT impact, without needing to conduct a detailed VMT analysis. Screening is an option but is not mandatory. Land use projects that meet at least one of the screening criteria presented previously are presumed to cause a less-than-significant VMT impact and would not require further VMT analysis. Since the proposed project is not either a residential or office project, the only applicable OPR screening criteria are those related to small projects and proximity to transit stations. Therefore, these criteria are used in the analysis of the proposed project. See Section 4.6.2, Regulatory Framework, for all VMT screening criteria.

4.6.3.3 IMPACT ANALYSIS

Impact TRA-1 Conflict with a Program, Plan, Ordinance, or Policy Addressing the Circulation System (Significance Standard A). The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle facilities. However, the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system related to pedestrian facilities. *(Potentially Significant)*

CONSTRUCTION

Project construction is expected to occur during weekdays, Monday to Friday, from 7:00 a.m. to 7:00 p.m., with limited weekend hours if needed, consistent with the City of Berkeley noise ordinance. Construction would occur over a combined 13-month period starting in the 2024. Construction traffic is expected to minimally impact the existing roadways and would not require full or partial roadway closures. Regional construction traffic is expected to travel to the project site by using California State Highway 24, Interstates 80, 580, 880 and 980, while local construction traffic would use designated City of Berkeley truck routes, along Shattuck Avenue, Ashby Avenue, Piedmont Avenue, Warring Street, Derby Street, and Belrose Avenue (City of Berkeley 2017b). All construction traffic staging would be located as close to the project site as possible and would not create any roadway closures along

any of the roadways near the existing Cal Softball Field such as Centennial Drive, Stadium Rim Way, Gayley Road, Canyon Road, and Prospect Street.

It should be noted that all construction traffic would be temporary and would not create any permanent changes to the circulation system within the vicinity of the project site. Construction would not conflict with applicable transportation-related City of Berkeley General Plan policies and would conform with UC Berkeley guidelines including the UC Berkeley Campus Design Standards, as described in Chapter 4.6.2, Regulatory Framework. Additionally, as part of the proposed project, UC Berkeley would implement the transportation (TRAN) CBPs listed here (see Appendix B):

- **CBP TRAN-5:** UC Berkeley will require contractors working on major new construction or major renovation projects to develop and implement a Construction Traffic Management Plan that reduces construction-period impacts on circulation and parking within the vicinity of the project site. The Construction Traffic Management Plan will address job-site access, vehicle circulation, bicycle and pedestrian safety, and be coordinated with the City of Berkeley Public Works Department when projects require temporary modifications to city streets.
- **CBP TRAN-6:** For each construction project, UC Berkeley will require the prime contractor to prepare a Construction Traffic Management Plan which will include the following elements:
  - Proposed truck routes to be used, consistent with the City truck route map.
  - Construction hours, including limits on the number of truck trips during the morning (AM) and evening (PM) peak traffic periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), if conditions demonstrate the need.
  - Proposed employee parking plan (number of spaces and planned locations).
  - Proposed construction equipment and materials staging areas, demonstrating minimal conflicts with circulation patterns.
  - Expected traffic detours needed, planned duration of each, and traffic control plans for each.
  - Identifying bicycle and pedestrian detours and safety plan, including solutions to address impacts to accessible routes.
- **CBP TRAN-7:** UC Berkeley will manage project schedules to minimize the overlap of excavation or other heavy truck activity periods that have the potential to combine impacts on traffic loads and street system capacity, to the extent feasible.
- **CBP TRAN-8:** UC Berkeley will reimburse the City of Berkeley for its fair share of costs associated with damage to City streets from UC Berkeley construction activities, provided that the City adopts a policy for such reimbursements applicable to all development projects within Berkeley.

Implementation of these CBPs would minimize construction transportation impacts, conform with UC Berkeley Campus Design Standards, and would not conflict with applicable City of Berkeley General Plan transportation-related policies during construction. Therefore, the construction of the proposed project would not result in a conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and the impact would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

The proposed project is consistent with the UC Sustainable Practice Policy and the UC Berkeley Sustainability Plan as it provides gameday TDM measures that continue to encourage a shift away from drive-alone vehicle trips, which

are a primary contributor to greenhouse gas emissions and localized transportation impacts. In coordination with the UC Berkeley Parking and Transportation Department, UC Berkeley Intercollegiate Athletics has developed gameday TDM measures for the proposed project (see Chapter 3, Project Description). The TDM measures include the following:

- Continued use of Bear Transit H Shuttle to provide weekday shuttle service to the project site, connecting the site to the Main Campus Park and the Botanical Garden and Lawrence Hall of Science.
- Managing signed and designated pick-up/drop-off areas for passenger loading, including users that access the site via rideshare vehicles. See Section 3.5.5.1, Site Access, for details.
- Visiting team's athletes and associated staff will arrive via bus to the field, where they will be dropped off. The bus will then be routed to the Foothill parking lot or the Southwest Crescent. Each school is responsible for its own travel.
- Publicize and continue communication on game day transportation-related information to promote non-driving options:
    - IA will advertise transit and parking information for game day events on their website.
    - UC Berkeley Parking and Transportation lists all parking and transit options on their website, pt.berkeley.edu. Visitors will find details on getting to and from the BART station through this website.

Additionally, as part of the proposed project, UC Berkeley would implement CBP TRAN-1 listed here (see Appendix B):

- **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.

As part of this CBP, and as described in Chapter 3, Project Description, the proposed project would provide adequate pedestrian, bicycle and emergency access within the project site including upgrading the existing sidewalk along the project frontage on Centennial Drive. To the east of the new field, the vehicle and pedestrian entrance to the Strawberry Canyon Recreation and Pool would be reconstructed and replaced with the roundabout and new sidewalk. A new access gate between the project site and Strawberry Canyon Recreation and Pool would also be constructed that would be connected to an existing unobstructed pathway to the pool and pool clubhouse. The proposed project would remove approximately 85 parking spaces and retain approximately 25 parking spaces in the existing Witter Lot. Removal of parking would reduce the number of possible parking locations for users of the Cal Softball Field, as well as adjacent UC Berkeley facilities including Witter Rugby Field and the Strawberry Canyon Recreation and Pool. Therefore, those arriving to the proposed project and adjacent UC Berkeley facilities would utilize other parking locations including the Stadium Garage, and other parking lot locations listed in Section 4.6.1.4, Parking. It is expected that the number of vehicles needing to park in different areas would not cause secondary effects or provide immediate congestion to the roadway network, as most parking facilities have adequate capacity, especially during typical (non-gameday) days, and users of these facilities typically arrive throughout the day and not simultaneously. Emergency vehicle access could be provided via a lane running from Centennial Drive onto the softball field itself (see Impact TRA-4 for additional information). The proposed project also involves improvements to an existing bus stop area located directly north of the project site, along Centennial Drive. Improvements to the bus stop include new striping, signage, curbs, sidewalk, and asphalt paving. Additionally, the proposed project includes the installation of 20 bicycle racks (fitting two bicycles each) and 3 bike lockers providing 43 total spaces for an increase of 34 compared to the existing 9 spaces.

The analysis of potential conflicts with programs, plans, ordinances, and policies addressing the circulation system, considers typical weekday use, and typical and maximum event matches.

Typical Weekday Use

As shown in Table 4.6-2, the relatively small number of vehicles (approximately 1 new vehicle, consisting of 2 total vehicle trips during the course of the day) that would be generated during the typical weekday use of the proposed project would not substantially change or alter conditions on the existing roadway network. Specifically, the number of vehicle trips estimated would add a nominal amount of congestion to local roadways near the campus.

Vehicles would use existing parking lots in the vicinity of the existing Cal Softball Field, or along nearby roadways such as Piedmont Avenue, Prospect Street, Warring Street, Bancroft Way, and others that allow for non-permitted two-hour parking (subject to special zones, gamedays for football games, and street cleaning). Overall parking near the existing Cal Softball Field, the adjacent Witter Rugby Field and Strawberry Canyon Recreation and Pool would be reduced; however, as stated above, it is expected that secondary impacts would not result during typical weekday use given the adequacy of existing parking. Vehicle parking available nearest to the project site is provided at Stadium Garage at 2175 Piedmont Avenue (approximately 435 spaces), Underhill Garage (approximately 935 spaces), Lower Hearst Garage (approximately 600 spaces), and Recreational Sports Facility Garage (approximately 200 spaces). The Stadium Garage is between approximately 50 to 85 percent full at peak times of the week and day (depending on floor and permit type), the Underhill Garage is between 85 to 100 percent full, the Lower Hearst Garage is between 58 to 100 percent full, and the Recreational Sports Facility Garage is between 38 to 91 percent full. Therefore, the accompanying parking garages provide an adequate supply for parking to limit unnecessary roadway congestion surrounding the project site.

The approximately 20 expected new participants on a typical weekday (see Table 4.6-2) would be spread out throughout the operational hours of the proposed project and any conflicts with existing policies or programs concerning circulation system improvements or changes would be nominal. Given the limited additional participants on a typical weekday, existing transit, bicycle, and pedestrian facilities would not require additional capacity or improvement due to the proposed project. While there is an overall lack of connectivity, paths of travel, and signage for pedestrians walking from parking areas on Stadium Rim Way south and north of Centennial Drive, the typical weekday use of the proposed project would not contribute to this condition or further degrade conditions for pedestrians near the project site. Therefore, for typical weekday use, the operation of the proposed project would not conflict with any of the existing UC or City of Berkeley plans, ordinances, or policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, described in Section 4.6.2, Regulatory Framework. Specifically, as the proposed project reduces parking; provides for sidewalk, bike parking and bus stop improvements; and includes a TDM plan, it would not conflict with City of Berkeley General Plan policies (e.g., Policies T-10 and T-12 related to trip reduction, Policies T-42 and T-43 related to bicycle planning and facilities, Policy T-50 related to sidewalk improvements). Therefore, the impact of the proposed project related to conflicts plans, ordinances, or policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities would be *less than significant*.

Typical and Maximum Events

For typical match events approximately 158 new vehicles, consisting of 316 new vehicle trips during the day would be generated (see Table 4.6-3). For maximum capacity gameday events approximately 54 new vehicles, consisting of 108 new vehicle trips during the day would be generated (see Table 4.6-4). As indicated above, gameday parking for both typical and maximum events would be provided predominately at the Stadium Garage, located approximately 0.3 miles west of the project site, and other parking is also available. Gameday TDM measures

described above would be implemented and are expected to reduce the number of vehicle trips associated with the proposed project. However, such reductions cannot be quantified and, therefore, are not included in the analysis, resulting in conservative estimates of vehicle use.

The number of pedestrians and bicyclists accessing the proposed project are expected to fluctuate depending on the type of gameday event. As mentioned above, spectators that drive can park at the nearest garage, the Stadium Garage, and can walk to the project site. The proposed project includes the installation of 20 bicycle racks (fitting two bicycles each) and 3 bike lockers providing 43 total spaces for an increase of 34 compared to the existing 9 spaces. Based on the travel survey conducted for the proposed project, the number of bicyclists and transit riders traveling to the Cal Softball Field was zero; however, as not every spectator was surveyed these results may underestimate potential bicyclists and transit riders. Nonetheless, based on the travel survey results, there would not be a significant increase in bicyclists and transit riders with the proposed project that would impact the existing local and regional bicycle and transit systems. Therefore, similar to the typical weekday use, the typical and maximum events of the proposed project would not conflict with any of the existing UC or City of Berkeley programs, plans, ordinances, or policies addressing the circulation system, including transit, roadway, and bicycle facilities. Pedestrian facilities and conditions are discussed below.

Collisions from the last 10 years of available data (2013–2022) were collected and analyzed using the Transportation Injury Mapping System that aggregates collision data directly from the California Statewide Integrated Traffic Records System. Along the most direct routes connecting to the Cal Softball Field (including Prospect Street, Canyon Road, Stadium Rim Way, and Centennial Drive), there were two collisions recorded within the last 10 years. Both occurred near the Prospect Court Lot, south of California Memorial Stadium. One collision involved a motorist hitting a fixed object and resulted in a minor injury to the driver. The other collision occurred within the Prospect Court Lot and involved a motorist colliding with a pedestrian who was traveling the wrong way. Both collisions included minor injuries and no alcohol or weather conditions were involved. The proposed project typical and maximum events would maintain existing routes of travel for vehicles, and increase foot traffic along the connecting roads to the Cal Softball Field. The limited number of collisions reveal that roadways in the study area do not have geometric hazards that could be exacerbated by the proposed project. Therefore, based on the collision data, the proposed project would not be expected to increase the frequency or severity of collisions involving vehicles and pedestrians.

As described in Section 4.6.1.1, Roadways, there are existing areas near the project site where pedestrians have limited ability to walk along Stadium Rim Way and Canyon Road due to missing sidewalks or bollards, limited signage, and an overall lack of connectivity and paths of travel for walking from parking areas on Stadium Rim Way south and north of Centennial Drive. Even though the collision data show limited collisions over a 10-year period, with the proposed project increase in average and maximum attendance during typical and maximum events, factors that currently prohibit efficient egress and ingress for spectators walking to the softball field from existing parking lots would remain and could become further exacerbated. Therefore, these conditions would continue to provide potentially dangerous conditions for pedestrians; and with the additional spectators associated with typical and maximum events, such conditions could potentially further degrade. While collisions are not expected to increase, during typical and maximum capacity events, the operation of the proposed project could potentially conflict with the existing UC or City of Berkeley programs, plans, ordinances, policies or practices addressing pedestrian facilities, described in Chapter 4.6.2, Regulatory Framework. Specifically, as conditions for pedestrians could potentially further degrade with the additional spectators associated with typical and maximum events, the proposed project has the potential to conflict with City of Berkeley General Plan policies related to pedestrians (e.g., Policies T-51 and T-52 related to pedestrian prioritization and safety). Therefore, the impact of the proposed project related to conflicts plans, ordinances, or policies addressing the pedestrian facilities would be *potentially significant*.

Significance without Mitigation: Potentially significant for pedestrian facilities (typical events and maximum events only).

MITIGATION MEASURES

MM TRA-1: UC Berkeley shall implement measures to improve pedestrian safety and connectivity along Stadium Rim Way, Centennial Drive, and portions of Canyon Road leading to the Cal Softball Field, in order to facilitate safe egress and ingress of spectators before and after typical and maximum events. Specific measures shall be posted on the UC Berkeley Intercollegiate Athletics (IA) website to provide spectators with several pedestrian travel routes to/from adjacent parking facilities. UC Berkeley shall also monitor the implementation of the measures and will refine such measures when warranted. Specific measures include, but are not limited to the following:

- Stadium Rim Way (north of Centennial Drive)
  - Missing bollards along the stadium side of the road shall be replaced and maintained.
  - Wayfinding signage leading from the Stadium Garage to the Cal Softball field shall be installed to lead pedestrians along the stadium edge towards the Stadium Rim Way/Centennial Drive intersection.
  - Painted pedestrian markings and rumble strips shall be installed to provide cohesive walkways from the existing Stadium Rim Way sidewalk and staircases from the Stadium Garage to and across the Stadium Rim Way/Centennial Drive intersection.
- Stadium Rim Way/Canyon Road (south of Centennial Drive)
  - Missing bollards along the stadium side of the road shall be replaced and maintained.
  - Wayfinding signage leading from parking areas from the south to the Cal Softball field shall be installed to lead pedestrians along the stadium edge towards the Stadium Rim Way/Centennial Drive intersection.
  - Painted pedestrian markings and rumble strips shall be installed to provide cohesive walkways from the existing Canyon Road sidewalk.
- Stadium Rim Way/Centennial Drive intersection
  - Intersection shall be repainted with new striping, markings, and new stop-signs.
  - Vegetation along the southeast corner of the intersection shall be trimmed and managed to enhance visibility of pedestrians to oncoming traffic.
  - With the discretion of IA, a temporary crossing guard may be used to facilitate pedestrian traffic during maximum events.

Significance with Mitigation: Less than significant for pedestrian facilities (typical events and maximum events only). Implementation of MM TRA-1 would avoid potential conflicts with existing UC or City of Berkeley programs, plans, ordinances, policies or practices addressing pedestrian facilities by: posting pedestrian travel routes to/from adjacent parking facilities on the UC Berkeley IA website; providing spectators cohesive paths of travel for pedestrians walking from parking areas on Stadium Rim Way south and north of Centennial Drive; providing clear signage directing pedestrians; and providing a safe pedestrian crossing at the Stadium Rim Way/Centennial Drive intersection. With the implementation of MM TRA-1 the typical event and maximum event scenarios of the proposed project would not further exacerbate pedestrian connectivity issues. Therefore, they would not conflict with the existing UC or City of Berkeley programs, plans, ordinances, policies or practices addressing pedestrian facilities.

With the implementation of MM-TRA-1 the potentially significant impact associated with pedestrian facilities during typical events and maximum events would be reduced to *less than significant*.

Potential Environmental Impacts of MM TRA-1: CEQA Guidelines Section 15126.4(a)(1)(D) indicates that if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the proposed project, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project. Given that MM TRA-1 involves physical improvements, the environmental impacts of such improvements were considered herein. Physical roadway changes, such as bollard replacement, markings, paint, or striping would be completed within the existing paved right-of-way in a manner sufficient to limit the impact on other roadway structures or facilities in the area. In particular, the physical improvements for pedestrians would not narrow or otherwise impede the use of the roadways for vehicles. Trimming landscape vegetation would be done only to the degree necessary to remove impediments to visibility at the intersection and would not result in significant aesthetics or biological resources impacts. All signage posted shall be done so as not to impact other existing signage or markings, especially as it relates to potentially distracting drivers. Physical improvements would not substantially increase air pollutant emissions, greenhouse gas emissions, energy or noise over levels evaluated for the proposed project in this EIR. All applicable UC Berkeley CBPs shall be implemented during the installation activities associated with MM TRA-1. The implementation of MM TRA-1 would not result in additional significant effects beyond those identified for the proposed project in this EIR.

Impact TRA-2 Vehicle Miles Traveled (Significance Standard B). The proposed project could conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b). *(Potentially Significant)*

CONSTRUCTION

CEQA Guidelines Section 15064.3(b) focuses on VMT for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. This EIR provides a qualitative analysis of proposed project construction under this Subdivision (b)(3), which recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. In these situations, lead agencies are directed to evaluate factors such as the availability of transit, proximity to other destinations, and other factors that may affect the amount of driving required by the project. Additionally, Subdivision (b)(3) indicates that a qualitative analysis of construction traffic is often appropriate. A qualitative analysis of VMT is provided in this analysis as the proposed project consists of elements that would generate temporary construction-related traffic.

The CEQA Guidelines do not establish significance thresholds outright; however, the OPR Technical Advisory (OPR 2018) does recommend a VMT threshold of significance for land use development (including residential, office, and other land uses) as well as for transportation projects. There is no VMT significance threshold for construction projects. The proposed project would involve construction that would generate temporary construction-related traffic during the combined 13-month project construction period and would consist of construction activities that would be temporary in nature. All construction worker and vendor trips would generate VMT; however, once construction is completed, the construction-related traffic would cease and VMT would return to similar pre-construction conditions. The VMT generated by the construction of the proposed project would be short-term and temporary and would not require a detailed VMT analysis. Therefore, as the construction of the proposed project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b), construction VMT impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

If the proposed project cannot meet at least one of the identified screening criteria, then a VMT analysis would be required. As stated in section 4.6.2, Regulatory Framework, OPR's recommended VMT significance thresholds vary depending on the three types of land use projects because residential, office, and retail projects tend to have the greatest influence on VMT. The recommended VMT significance thresholds are consistent with the achievement of the state's climate goals and include:

- Threshold for Residential Projects: A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact.
- Threshold for Office Projects: A proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.
- Threshold for Retail Projects: A net increase in total VMT may indicate a significant transportation impact.

While the OPR Technical Advisory indicates that Lead Agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types, UC Berkeley has not developed more specific VMT thresholds or thresholds for other land use types.

According to the OPR Technical Advisory, the VMT screening criteria listed in Table 4.6-5 are applicable to the proposed project and are evaluated in the table and analysis below. If one or more of the project scenarios (i.e., typical weekday, typical event, and maximum event) meet at least one of the screening criteria the VMT impact would be presumed to be less than significant and would not require VMT analysis.

TABLE 4.6-5. POTENTIAL VMT SCREENING FOR PROPOSED CAL SOFTBALL FIELD

Applicable VMT Screening Criteria	Would Cal Softball Field Meet VMT Screening Criteria?		
	Typical Weekday Use (20 New Participants)	Typical Event (500 New Spectators and Participants)	Maximum Event (171 New Spectators and Participants)
Small Projects: Projects that generate or attract fewer than 110 trips per day.	Yes	No	Yes
Locally Serving Public Facility: Projects that consist of public facilities that service the local community.	Yes	No	No
Proximity to Transit: Projects located within ½-mile within an existing major transit stop or an existing stop along a high-quality transit corridor (within a TPA). If confirmed, additional project characteristics must apply.	Yes	Yes	Yes

Source: OPR 2018.

According to the MTC (MTC and ABAG 2023), the existing Cal Softball Field and the location of the project site would be entirely located within an existing TPA. AC Transit Routes 51B and 52 both provide morning and afternoon peak frequency that is 15-minutes or less, and both provide bus stops within a one-half mile radius from the project site (see Section 4.6.1.2, Transit). Therefore, the proposed project would be accessible within one-half mile from the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

The presumption that VMT impacts would be less than significant based on the proposed project's location within a TPA is because the following additional criteria would not be met, as demonstrated below:

- **FAR Criterion** - Has a Floor Area Ratio (FAR) of less than 0.75. The proposed project is a softball field and therefore would not be subject to this criterion.
- **Parking Criterion** - Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking). The proposed project would remove approximately 85 parking spaces and retain approximately 25 parking spaces in the existing Witter Lot. Therefore, the proposed project would not include more parking than required by the jurisdiction.
- **SCS Criterion** - Is inconsistent with the applicable SCS (as determined by the lead agency, with input from the Metropolitan Planning Organization). The proposed project would not change the existing designation of the land use and would be consistent with the application Sustainable Communities Strategy.
- **Affordable Housing Criterion** - Replaces affordable residential units with a smaller number of moderate- or high-income residential units. The proposed project is a softball field and therefore would not be subject to this criterion.

However, due to the travel survey conducted for the proposed project showing that the mode share split during games resulted in 98 percent of spectators driving, the proposed project's location in a TPA does not reflect an accurate or realistic mode choice of spectators. Although the proposed project location is in a TPA, the additional spectators added during typical and maximum events would likely consist of a similar mode share as that surveyed in the travel survey. Therefore, UC Berkeley decided not to use the TPA VMT screening criteria in its analysis of the proposed project's transportation impacts even though it is located in a TPA.

The proposed project is located on the Hill Campus of UC Berkeley and the existing Cal Softball Field is generally not open to the public; however, UC Berkeley students would be able to publicly access the Cal Softball Field for intramural activities when the field is not being used for IA. Therefore, during a typical weekday use, the project site would be considered a locally serving public facility. During typical events or maximum event scenarios, the Cal Softball Field would be closed to UC Berkeley students using the field for intramural activities and would only be available for the UC Berkeley Softball team or other collegiate or professional matches.

The screening criteria for small projects states that projects that generate 110 daily trips or less may be considered small projects. During a typical weekday the proposed project would generate 2 new daily vehicle trips (see Table 4.6-2), and during a maximum event the proposed project would generate 108 new daily vehicle trips (see Table 4.6-4). Therefore, under these two scenarios the proposed project would be considered a small project meeting the small project screening criteria and VMT impacts related to those scenarios can be presumed to be less than significant.

Under a typical event condition, the proposed project would generate approximately 316 new daily vehicle trips (see Table 4.6-3). This is because the net difference in spectators is expected to be greater for typical events based on average attendance, estimating that average attendance would double from existing attendance (from 500 spectators to 1,000 spectators), than in comparison with maximum events where the overall maximum capacity increase with the proposed project would have a smaller increase (from 1,340 spectators to 1,511 spectators based on the increase in total seats).

The increase in spectators during typical (average) events would occur on up to only 25 games during the competitive spring season. Therefore, with up to 25 games generating approximately 7,906 net vehicle trips annually, and the remainder of the year consisting of typical weekday uses generating approximately 680 net vehicle trips annually, for a total of 8,586 vehicle trips annually (see Tables 4.6-2 and 4.6-3), the average number

of vehicle trips per day would be approximately 24 (8,586 vehicle trips/365 days = 24 vehicles). Therefore, if daily vehicle trips were annualized, the project in total would meet the small project screening threshold and would be screened out of further VMT analysis because VMT impacts would be assumed to be less than significant, based on the OPR Technical Advisory (OPR 2018).

VMT as a transportation metric and associated VMT thresholds are intended to reduce GHG emissions, and OPR recommends using quantitative VMT thresholds linked to GHG reduction targets when methods exist to do so. Therefore, annualization of vehicle trips, especially for renovation of an existing softball field that with 25 competitive games per year, is consistent with the GHG analysis. The proposed project would not result in a substantial increase in annual VMT; similarly, the project would not result in a significant increase in annual GHG emissions. As provided in Chapter 5, CEQA Considerations, the impact of the proposed project related to GHG emissions would be less than significant with the implementation of the UC Sustainable Practices Policy at the campus level, including the option to purchase carbon offsets, which would ensure a net zero increase in GHG emissions with the proposed project.

However, OPR does not provide explicit guidance regarding annualizing vehicle trips for the purposes of comparing to the small project screening threshold. Therefore, UC Berkeley has decided that for this project, it will not use the small projects screening criteria for the typical event because on a typical event day the proposed project could exceed the small project screening criteria of more than 110 trips per day.

As described above and shown in Table 4.6-5, the proposed project would provide locally serving uses during typical weekday use; however, cannot be screened out based on this metric for typical events, even though the proposed project is in a TPA and typical events would screen out as a small project if VMT were annualized. Therefore, additional VMT analysis would be required for the typical event scenario, as provided below.

The OPR Technical Advisory does not have a process or methodology to analyze VMT associated with infrequent sporting events that may generate regional traffic. Additionally, the Alameda County Transportation Commission model may not be capable of analyzing a sporting event that would vary in intensity and which provides a relatively small number of daily regional vehicle trips. As a result, a sufficient quantitative VMT analysis cannot be conducted for the proposed project and a qualitative analysis must be performed under CEQA Guidelines Section 15064.3 Subdivision (b)(3), which recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. Additionally, it is unclear whether and to what extent the project could result in VMT associated with regional vehicle trips that may be drawn to the site on the typical event scenario as the number of spectators and nearby regions they could be driving from varies depending on the opponent, and other factors (i.e., weather, day of the week, time of game, etc.).

As indicated in Impact TRA-1, the proposed project includes gameday TDM measures that would be implemented to potentially reduce automobile congestion, increase pedestrian and bicycle use, encourage transit and promote the fact that the Cal Softball Field is in a TPA and has many transit options in proximity. However, as indicated in Section 4.6.3.2, Analytical Methods, it is not possible to accurately assess the reduction in trip generation that the TDM measures may have and therefore the trip generation estimates for the typical event (see Table 4.6-3) does not include reductions for TDM. Therefore, to be conservative, the typical events associated with the proposed project could conflict or be inconsistent with CEQA Guidelines Section 150645.3, Subdivision (b), even with the implementation of the proposed gameday TDM measures (see Impact TRA-1), as the proposed project would somewhat increase VMT with the increase in vehicle trips for typical events (as shown in Table 4.6-3). Consequently, the VMT impact for typical events is conservatively determined to be *potentially significant.*

As noted above, this is a conservative impact finding given that the proposed project includes gameday TDM measures that would be implemented to potentially reduce automobile congestion, increase pedestrian and bicycle use, encourage transit but as indicated above such measures cannot be accurately assessed for their reduction in trip generation.

Significance without Mitigation: Potentially significant (typical events only)

MITIGATION MEASURES

There are no feasible mitigation measures to reduce the number of spectators for typical events, without either reducing the overall attendance at the proposed Cal Softball Field or restricting ticket sales to lower the average number of spectators per year. Such reduction in attendance is not feasible to implement, as a facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament, as indicated in the project objectives provided in Chapter 3, Project Description. Therefore, the VMT impact associated with typical events would remain *significant and unavoidable*.

Impact TRA-3 Geometric Design Hazards (Significance Standard C). The proposed project would not substantially increase hazards due to a geometric design feature or incompatible use. *(Less than Significant)*

CONSTRUCTION

As described previously, construction of the proposed project would result in a temporary increase in local traffic as a result of construction-related workforce traffic, material deliveries, and construction activities. Construction of the proposed project would occur over a combined 13-month period and may require full or partial temporary roadway closures (see Section 3, Project Description). Any hazards related to construction would be minimized as described below and construction staging would be confined to the project site. All construction of the proposed project would comply with all relevant City of Berkeley and UC Berkeley policies related to construction, and transportation CBPs related to construction would be implemented as part of the proposed project, as described in Impact TRA-1. Therefore, a Construction Traffic Management Plan would be required to manage hazards arising from construction equipment and construction vehicles. The Construction Traffic Management Plan would address job-site access, vehicle circulation, bicycle, and pedestrian safety, and be coordinated with the City of Berkeley Public Works Department if City streets would be affected; however, work in City streets is not anticipated. All construction traffic staging would be located as close to the project site as possible and any roadway closures along any of the roadways near the existing Cal Softball Field such as Centennial Drive, Stadium Rim Way, Gayley Road, Canyon Road, and Prospect Street would be minimized as much as possible. The locations of all existing roadways would remain unchanged and there would not be any new sharp curves or hazardous conditions as a result of construction. The proposed project would not entail the introduction of incompatible uses along any of the roadways adjacent to the project site. Therefore, as construction of the proposed project would not introduce hazardous design features or incompatible land uses, impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

The proposed project would renovate the existing Cal Softball Field and would not be considered an incompatible use of the existing site, given that the proposed project would continue the softball use of the site. The components of the proposed project would not result in any physical changes to existing roadways surrounding the site. (Note

that the physical changes of Stadium Rim Way and the intersection of Stadium Rim Way and Centennial Drive associated with the implementation of MM TRA-1 are identified and evaluated in Impact TRA-1 above.) The removal of parking spaces at the Witter Lot would not create roadway hazards to adjacent roadways and sidewalks. The project would maintain the existing publicly accessible routes at the project site (Figure 3-6 in Chapter 3, Project Description). See Impact TRA-4 for specific information about emergency access.

As stated in Impact TRA-1, collision data obtained from the last 10 years of available data (2013–2022) shows that there were two collisions in the immediate area, both occurring near the Prospect Court Lot, one involving a motorist hitting a fixed object and another collision involving a motorist colliding with a pedestrian who was traveling the wrong way. The proposed project would not be expected to increase the frequency or severity of collisions.

As discussed in Impact TRA-1, the existing pedestrian routes of travel from nearby parking areas such as the Stadium Garage at 2175 Piedmont Avenue (approximately 435 spaces), Underhill Garage (approximately 935 spaces), Lower Hearst Garage (approximately 600 spaces), and Recreational Sports Facility Garage (approximately 200 spaces), currently lack pedestrian amenities along Stadium Rim Way. Therefore, in order to minimize the effect of potential increases in vehicle trips during typical and maximum events, IA has developed gameday TDM measures for the proposed project, as described in Impact TRA-1.

Overall, the proposed project would not substantially increase hazards due to new geometric design features or incompatible use. Therefore, the operational impact of the proposed Cal Softball Field project related to hazardous design features or incompatible land uses would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to hazardous design features or incompatible land uses, and therefore, no mitigation measures are required.

While not required to reduce a potentially significant impact related to geometric design features, MM TRA-1 would improve pedestrian safety deficiencies and improve overall walking access to and from the proposed project.

Impact TRA-4 Emergency Access (Significance Standard D). The proposed project would not result in inadequate emergency access. *(Less than Significant)*

CONSTRUCTION

Project construction is expected to minimally impact existing roadways near the project site but may at times require partial or full closures of existing roads to allow for the installation of project components (e.g., bus stop improvements and utility connections in Centennial Drive).

All construction traffic staging would be located on the project site and would not create any roadway closures along any of the roadways near the existing Cal Softball Field such as Centennial Drive, Stadium Rim Way, Gayley Road, Canyon Road, and Prospect Street. Construction activities would be temporary and would be completely eliminated from the roadway network upon completion of the combined 13-month construction period. Most traffic signals in the vicinity of the UC Berkeley campus area have emergency vehicle preemption, to allow for emergency vehicles to have priority over other vehicles at signalized intersections (UC Berkeley 2021b). Additionally, there are three Berkeley Fire Department stations serving the UC Berkeley campus (Berkeley Fire Stations 2, 3, and 5). The nearest

Berkeley Fire Department station to the project site is Fire Station 3, located at 2710 Russell Street, approximately 1.3-miles southwest of the project site. The nearest Alameda County Fire Department station is located at 1 Cyclotron Road Building 4, at the Lawrence Berkeley Laboratory, approximately 1.6-miles north.

Existing emergency access to the surrounding neighborhood would be preserved and impacts to emergency access minimized through adherence to all UC Berkeley and City of Berkeley policies relating to access for emergency vehicles. All exiting emergency access routes to and from the project site would be minimally impeded by construction traffic, and construction traffic would be required to use existing truck routes. Additionally, the transportation CBPs related to construction would be implemented as part of the proposed project, as described in Impact TRA-1, which would require a Construction Traffic Management Plan to maintain adequate emergency access. Therefore, construction of the proposed project would not obstruct emergency access and impacts associated with inadequate emergency access would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

The proposed project would not result in any physical changes to existing roadways surrounding the site that would adversely affect emergency access. As described in the WPP for the proposed project (Appendix C) and Chapter 3, Project Description, Centennial Drive provides access for emergency vehicles and the proposed project provides for a new roundabout on the northeast corner of the site to allow for turnaround for fire apparatus at the project site, rather than requiring travel approximately 0.6 mile further up Centennial Drive to the Botanical Garden, which is currently the next opportune location. Emergency vehicle access to the proposed project would be reviewed by the UC Fire Marshal and City of Berkeley Fire Marshal for compliance with their respective standards and regulations. Emergency vehicle access may be provided to the proposed softball field via a lane running from Centennial Drive onto the softball field itself. Traveling southward from Centennial Drive, the lane may consist of 2 feet roll curb and gutter, removable bollards providing access to fire department and police department personnel, cast-in-place pedestrian concrete, grass pavers providing all weather driving capability of fire apparatus up to 75,000 pounds, an access gate to the field, and synthetic turf with 8-inch permeable aggregate base. According to the WPP and Chapter 3, Project Description, the design and construction of the emergency vehicle access to the proposed structures must conform to code requirements upon completion of the project; variations may be granted by the Fire Authority having jurisdiction. The emergency vehicle access into the project site would not interfere with emergency vehicle access along Centennial Drive.

The new pullout area at the main entrance gate on the northwest corner of the site would be 65 feet in length along the project frontage on Centennial Drive, which could accommodate up to 3 vehicles. This pullout area is closest to the Americans with Disabilities Act (ADA) path on the west side of the site. The new roundabout on the northeast corner of the site near the Strawberry Canyon Recreation and Pool entrance can accommodate up to 6 vehicles for passenger loading and unloading. Neither of these facilities would inhibit emergency access along Centennial Drive and as indicated above the roundabout can be used as an emergency vehicle turnaround location.

As discussed previously, the operation of the proposed project would vary based on the type of event occurring and the day of the week. Typical weekday uses associated with the proposed project would generate a nominal amount of additional daily vehicle trips and would, therefore, have a nominal impact on emergency access for the surrounding area and at the location of the Cal Softball Field. A typical (average) event would generate approximately 316 new total daily vehicle trips and a maximum event would generate approximately 108 new total daily vehicle trips (see Tables 4.6-3 and 4.6-4, respectively). Participants and spectators that drive to events could park at the Stadium Garage parking lot or any of the alternative parking lots, as indicated previously. Periods directly

prior to and post events would generate the highest concentration of traffic along Centennial Drive and Stadium Rim Way, and the surrounding roadway network. Currently, vehicles have the option to park within the Witter Lot; however, with the proposed project the Witter Lot would be reduced in size and would be used primarily to provide ADA accessible parking. Therefore, fewer vehicles would be attempting to drive directly to the Cal Softball Field on game days and would instead use other campus parking lots and parking areas. Additionally, gameday TDM measures, as described in Impact TRA-1, would continue to encourage a shift away from drive-alone vehicle trips and associated congestion that can cause emergency access issues. Due to the expected number of vehicles generated, the ability to park in multiple locations, and the implementation of on-site emergency access improvements, emergency vehicle access would be expected to be minimally impacted by the proposed project. The proposed project would also adhere to existing UC Berkeley and City of Berkeley policies, and with the implementation of CBP TRAN-1. Therefore, the operation of the Cal Softball Field would not obstruct emergency access and impacts associated with inadequate emergency access would be *less than significant*.

See Section 4.7, Wildfire, for an evaluation of evacuation based on an evacuation modeling report prepared for the proposed project.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to emergency access, and therefore, no mitigation measures are required.

Impact TRA-5 Cumulative Transportation Impacts (Significance Standard E). The proposed project, in combination with past, present, and reasonably foreseeable projects, could result in a significant cumulative impact related to transportation from vehicle miles traveled. *(Potentially Significant)*

This section provides an evaluation of cumulative transportation impacts associated with the proposed project and past, present, and reasonably foreseeable future projects, as identified in Table 4.1-1 in Section 4.1, Introduction to Analyses, and as relevant to this topic.

CONSTRUCTION

The geographic area potentially affected by construction-related transportation impacts of the proposed project would be limited to the area near the existing Cal Softball Field. There are no cumulative projects in Table 4.1-1 in the immediate vicinity of the project site; however, there are projects occurring within the Lawrence Berkeley National Laboratory (LBNL) area that may impact traffic flow. The Centennial Bridge Replacement Project (under construction) would potentially require the closure of travel lane from Centennial Drive to Stadium Rim Way. The project is expected to be completed in the Winter of 2024 and would overlap with the construction of the proposed project. Several other LBNL projects occurring within the LBNL area may also potentially bring additional construction traffic onto Centennial Drive and Stadium Rim Way; however, implementation of CBPs TRAN-5 through TRAN-7 would be required as part of the proposed project, and the LBNL projects would also require the preparation of Construction Traffic Management Plan (see Impact TRA-1). Per these CBPs, the Construction Traffic Management Plans for these projects would account for potential overlap and associated conflicts with circulation patterns on surrounding roadways.

Therefore, the project would not contribute to potentially significant cumulative construction-related transportation impacts that may arise from implementation of the cumulative projects. As such, the cumulative construction transportation impact of the project would be *less than significant*.

OPERATIONS

The analysis of cumulative transportation impacts related to project operations focuses on VMT and Significance Standard B, which is based on whether the proposed project would conflict with or be inconsistent with CEQA Guidelines 15064.3, Subdivision (b). As the typical weekday use and the maximum event would meet VMT screening criteria, cumulative VMT impacts for these activities would also be less than significant, as described in Impact TRA-2.

The OPR Technical Advisory does not have a process or methodology to evaluate cumulative VMT associated with infrequent sporting events that may generate regional traffic. Additionally, the Alameda County Transportation Commission model would not be capable of analyzing a sporting event that would vary in intensity and provide a relatively small number of daily regional vehicle trips. As a result, a quantitative cumulative VMT analysis cannot be conducted for the proposed project. Therefore, to be conservative, typical events associated with the proposed project could conflict or be inconsistent with CEQA Guidelines Section 150645.3, Subdivision (b), even with the implementation of the proposed gameday TDM measures, as such measures cannot be accurately assessed for their reduction in trip generation (see Impact TRA-1), and the cumulative VMT impact would be potentially significant. As such, the cumulative impact of the proposed project related to VMT for the typical event would be *significant and unavoidable*.

This is a conservative impact finding for the same reasons described in Impact TRA-2.

4.7 WILDFIRE

This section describes the existing conditions of the project site and vicinity related to wildfire, identifies associated regulatory requirements, evaluates potential project and cumulative impacts, and identifies mitigation measures for any significant or potentially significant impacts related to implementation of the UC Berkeley Cal Softball Field Renovation Project (project or proposed project). The analysis is based on review of the following: project site characteristics and location; the UC Berkeley Long Range Development Plan Environmental Impact Report (EIR) (UC Berkeley 2021b and 2021c); the wildfire protection plan (WPP) prepared for the proposed project (see Appendix C) and the fire evacuation analysis also prepared for the proposed project (see Appendix H).

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 WILDFIRE BACKGROUND

Wildfires burn in many types of vegetation, including forest, woodland, scrub, and grassland. Many species of native California plants are adapted to fire, and fire can play an important role in the health of these ecosystems (CALFIRE 1999). The San Francisco Bay area's Mediterranean-like climate, lack of summer rains, wind-conducive topography with steep canyons and swales, and fire-adapted vegetation predisposes the area to periodic burns. Wildfires have grown in frequency and intensity throughout the West during the past several years, particularly in California, where prolonged drought and hot, dry temperatures have been common.

WILDFIRE CAUSES

Though wildfires can occur from natural origins (e.g., lightning) and can play an important role in certain ecosystems, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of wildfires and accounted for 44 percent of acreage burned (Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017). Human-caused wildfires can be from debris burning, arson, equipment use, vehicles, power-line failures, and other possible ignition sources.

An analysis of U.S. Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires occurred within half a mile of a road; and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within about 650 feet of a road. The study concluded that the increase in human-caused ignition greatly outweighed the benefits of increased access for firefighters (Pacific Biodiversity Institute 2007). Additionally, the California Department of Forestry and Fire Protection's (CALFIRE's) annual Wildfire Activity Statistics reports, 2014-2017, indicate the most common causes of wildfires are mechanical use, debris burning, arson, electrical power lines, campfires, playing with fire, and lightning. Within Alameda County, the most common cause of wildfires according to CALFIRE's annual Wildfire Activity Statistics, 2018-2021 reports are vehicles, arson, electrical power lines, and equipment use (Appendix C).

The number of large wildfires in California (i.e., greater than 1,000 acres) has increased from approximately 25 to 55 per year since the 1960s (State Board of Forestry and Fire Protection and CALFIRE 2018). The encroachment of urban development into wildland areas has been another contributing factor that increases the risk of human-caused wildfires.

SECONDARY EFFECTS

Secondary effects of wildfire include additional hazards such as poor air quality, landslides, and power outages.

Air Pollution

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles that can penetrate the lungs and cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. Some populations are more sensitive than others to smoke, including people with heart or lung diseases, the elderly, children, people with diabetes, and pregnant women (AirNow 2017).

Landslides and Debris Flows

When supporting vegetation is burned away, hillsides become prone to destabilization and erosion, increasing the risk of landslides. Postfire landslide hazards include fast-moving, highly destructive debris flows in the period immediately following wildfires in response to high-intensity rainfall, and flows that are generated over longer periods that are accompanied by root decay and loss of soil strength. Fires increase the potential for debris flows by increasing the imperviousness of soil so that it repels water and by destroying vegetation that would slow runoff and absorb rainfall, and whose roots would help stabilize soil (USGS 2018). The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses. Postfire debris flows are particularly hazardous because they can happen with little warning, sweep away objects in their paths with great force, strip vegetation, block drainages, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles. Postfire debris flows are most common in the two years after a fire; they are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned areas than from unburned areas. Areas with steep slopes are typically within debris flow areas (DOC 2018).

Power Outages

Power outages relating to wildfire can occur either from deliberate shutoff of power in order to reduce the risk of wildfires that might occur from power lines damaged during dry, hot winds, or as a result of wildfire damage to utilities. This has obvious consequences, such as the inability to operate vulnerable and critical systems for day-to-day life, such as fuel, water, communication, heating and cooling, and other systems that require electricity.

WILDLAND-URBAN INTERFACE

According to the California Office of Emergency Services (Cal OES), a Wildland-Urban Interface (WUI) is defined as any area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (Cal OES 2018). Developments in the WUI exacerbate fire occurrence and fire spread in several ways, including:

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to buildup of fuel and increasing wildfire hazard further (Radeloff, et al., 2018).

The project site, including the Cal Softball Field, is located with the Hill Campus West, at the mouth of Strawberry Canyon. The site is within a WUI, between a densely populated area with student housing and Memorial Stadium, and an 800-acre Ecological Study Area in the Hill Campus East area (see Chapter 3, Project Description, Figure 3-1).

4.7.1.2 WILDFIRE HISTORY

Fire history data provide valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. CALFIRE's Fire and Resource Assessment Program (FRAP) database[1] summarizes fire perimeter data dating to the late 1800s, but it is incomplete because it does not include fires under 10 acres in size and has incomplete perimeter data, especially for the first half of the twentieth century (Syphard and Keeley 2016). However, the data do provide a summary of recorded fires and can be used to show whether large fires have occurred in or near the project site, which is one of the indicators as to whether such fires may be possible in the future. Figure 4.7-1 depicts large wildfires, including prescribed burns, that have occurred within 5 miles of the project site, according to CALFIRE's FRAP database. As shown in Figure 4.7-1, large wildfires in recorded wildfire history have not burned onto the project site, and the closest fire to the project site was the Tunnel Fire in 1991 that burned approximately 1 mile to the southeast of the project site. Further, there have only been two large fires and one prescribed burn within a 5-mile radius of the project site according to recorded wildfire history. As noted, wildfire data included in Figure 4.7-1 is incomplete, and local fire departments may have additional wildfire data.

Local fire agencies generally keep records of local wildfire events and response efforts. The WPP includes a discussion of wildfires that have burned onto the campus. WPP, Figure 9 includes a Fire History Map that depicts fires that have burned near or onto the campus from 1950 to 2017. Wildfires that have burned in proximity to the project site occurred in the undeveloped mountainous terrain to the east of the project site within the Berkeley Hills. As discussed in the WPP, wildfires in the project vicinity have resulted in the loss of life, property, and billions of dollars in financial loss. A recent fire near the UC Berkeley campus is the Grizzly Fire in 2017, which started on the UC Hill Campus West and burned up to and across Grizzly Peak Blvd. The Grizzly fire burned approximately 20 acres and required evacuations and endangered the continuity of electrical power to the campus (Appendix C).

4.7.1.3 WILDFIRE HAZARDS

Fuels, weather, and topography are the primary factors that are used to evaluate the wildfire hazard of a particular area. CALFIRE has mapped Fire Hazard Severity Zones (FHSZ) across California's State Responsibility Areas (SRA) and Local Responsibility Areas (LRA), which designates varying levels of fire hazard based on vegetation, topography, weather, and human-made structures. As shown in Figure 4.7-2, the project site and surrounding area is designated as within a Very High FHSZ within a Local Responsibility Area by CALFIRE and designated as a Berkeley Hazardous Fire Zone by the City of Berkeley (CALFIRE 2023, City of Berkeley 2019). As described in the City of Berkeley Local Hazard Mitigation Plan (LHMP), the City is vulnerable to wind-driven fires starting along the slopes of East Bay Hills, compounded by the mountainous topography, limited water supply, limited ingress and egress routes through the hills, and the location directly over the Hayward Fault, which increases the risks of fires induced by earthquake damage. The City's flatlands, densely packed with many old wooden buildings, are exposed to a fire spreading west from the hills (City of Berkeley 2019).

[1] Based on polygon geographic information system data from CALFIRE's FRAP, which includes data from CALFIRE, the U.S. Department of Agriculture's Forest Service Region 5, BLM, the National Park Service, contract counties and other agencies. The dataset is a comprehensive fire perimeter geographic information system layer for public and private lands throughout the state and covers fires 10 acres and greater between 1878 and 2018.

TOPOGRAPHY AND LANDCOVER

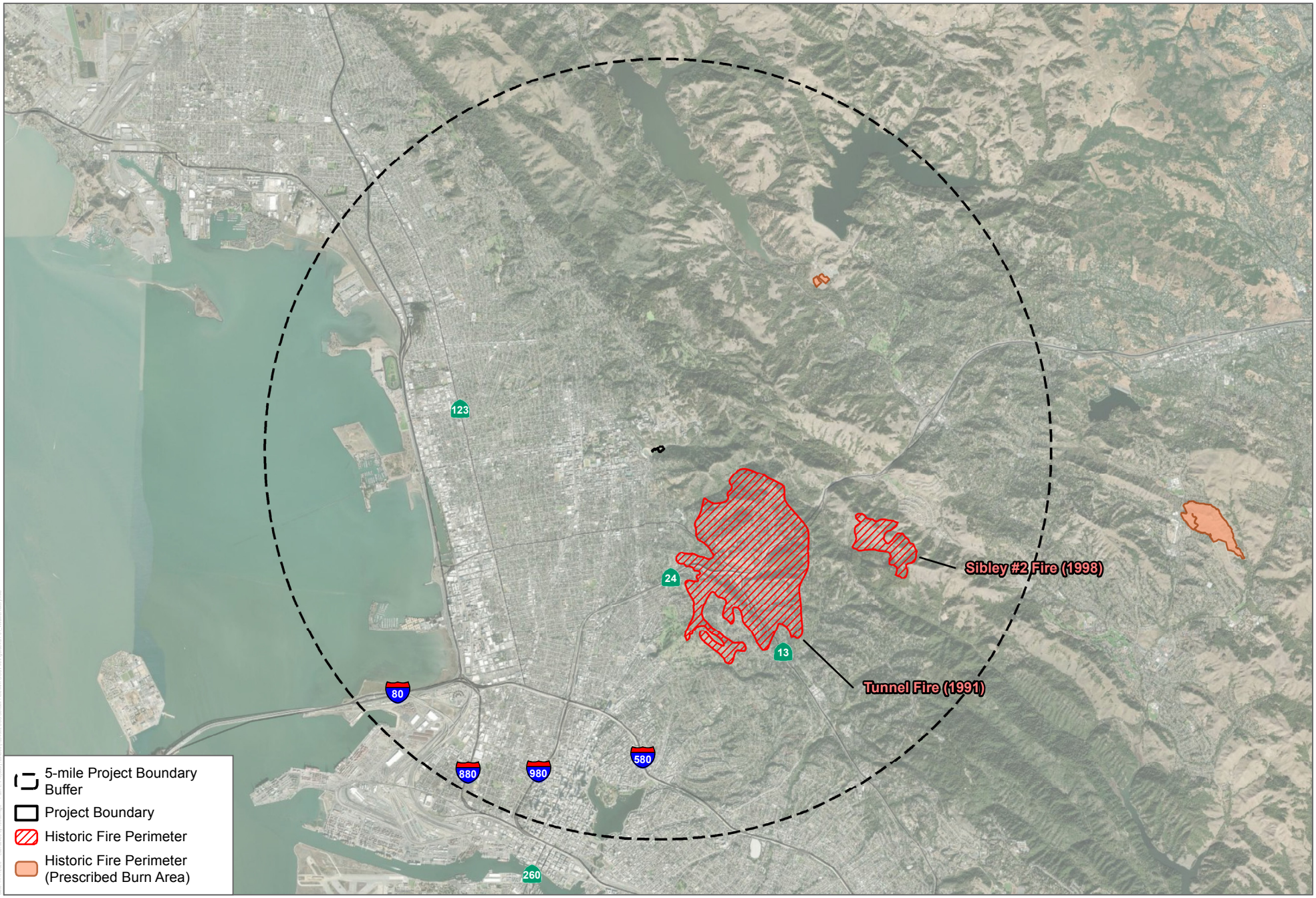
Topographic features, such as slope, aspect (orientation with respect to sun and wind), and the overall form of the land, influence wildfire behavior. Topography affects a wildfire's intensity, burn rate (consumption of fuels), direction, and rate of spread. Additionally, the topography of an area influences local winds through the alteration of speed, regularity, and direction of winds, which can directly influence the direction of wildfire spread and the shape of the flame front. Topography of the project site is relatively flat, with little to no topographic variation. Elevations on the project site range from roughly 488 feet above mean sea level (amsl) at the southeast corner to 496 feet amsl in the northeast corner. The ground surface slopes up steeply immediately north of Centennial Drive, and grades slope up steeply beyond the south border of the site within the undeveloped hillsides adjacent to the project site.

The entire project site is primarily composed of urban/developed land cover. Most of the site is paved with impermeable surfaces that cannot support vegetation and have limited habitat value for wildlife, although trees and shrubs planted for ornamental landscaping are present onsite including several coast redwoods planted along Centennial Drive northwest of the Strawberry Canyon Recreation and Pool and around the perimeter of the softball field. Vegetation on surrounding hillsides consists of a dense mix of native and non-native grasses, shrubs, and trees within the 800-acre Ecological Study Area in the Hill Campus East area and beyond. The terrain and vegetation in the surrounding hills east of the project present a wildfire risk to the project site and surrounding community.

CLIMATE AND WEATHER

Weather conditions significantly impact both the potential for fire ignition and the rate, intensity, and direction in which fires burn. The most important weather variables used to predict fire behavior are wind, temperature, and humidity. The San Francisco Bay area has a Mediterranean-like climate with a rainy season during the winter and dry season during the summer. The National Weather Service issues “red flag” weather day warnings when certain weather elements could lead to increased wildfire risk, such as low relative humidity, strong winds, and warm temperatures (Diablo Fire Safe Council 2015). The number of red flag warning days each year can vary, typically ranging from fewer than three days up to ten in recent years. The winds when red flag warnings are in place are particularly noticeable on the ridgetops east of the plan area (such as near Grizzly Peak Blvd). Precipitation occurs primarily in the fall and winter (mid-October to mid-April) and averages about 30 inches of precipitation a year. Therefore, May through October are considered the dry months and are considered fire season for the City of Berkeley (City of Berkeley 2023a).

Winds can influence wildfire behaviors through the removal of moisture of fuels, influencing the direction of wildfire spread, increasing the rate of spread of wildfire, and can carry embers and firebrands downwind. Gusty winds can cause a fire to burn erratically and make it more difficult to contain. Strong, hot, dry offshore winds, referred to in the San Francisco Bay area as “Diablo Winds” create the most severe fire danger in the area. These winds carry dry air at high velocity and are especially dangerous during the drier months of the year in late summer and fall. Days associated with relative humidity below 20 are generally associated with Diablo wind events (Appendix C). The warmer weather, lower humidity, and presence of these winds make wildfires more likely during this time of year (Diablo Fire Safe Council 2015). Diablo winds create the most severe fire danger in the area, and typically blow from the northeast. The overall weather pattern of this area characterized by high temperatures, low relative humidity, and high winds, increase the possibility of ignition and extreme fire behavior and rapid spread of wildfire.



SOURCE: Bing Maps 2022

DUDEK

0 4,375 8,750 Feet

FIGURE 4.7-1

Wildfire History

UC Berkeley Cal Softball Field Renovation Project

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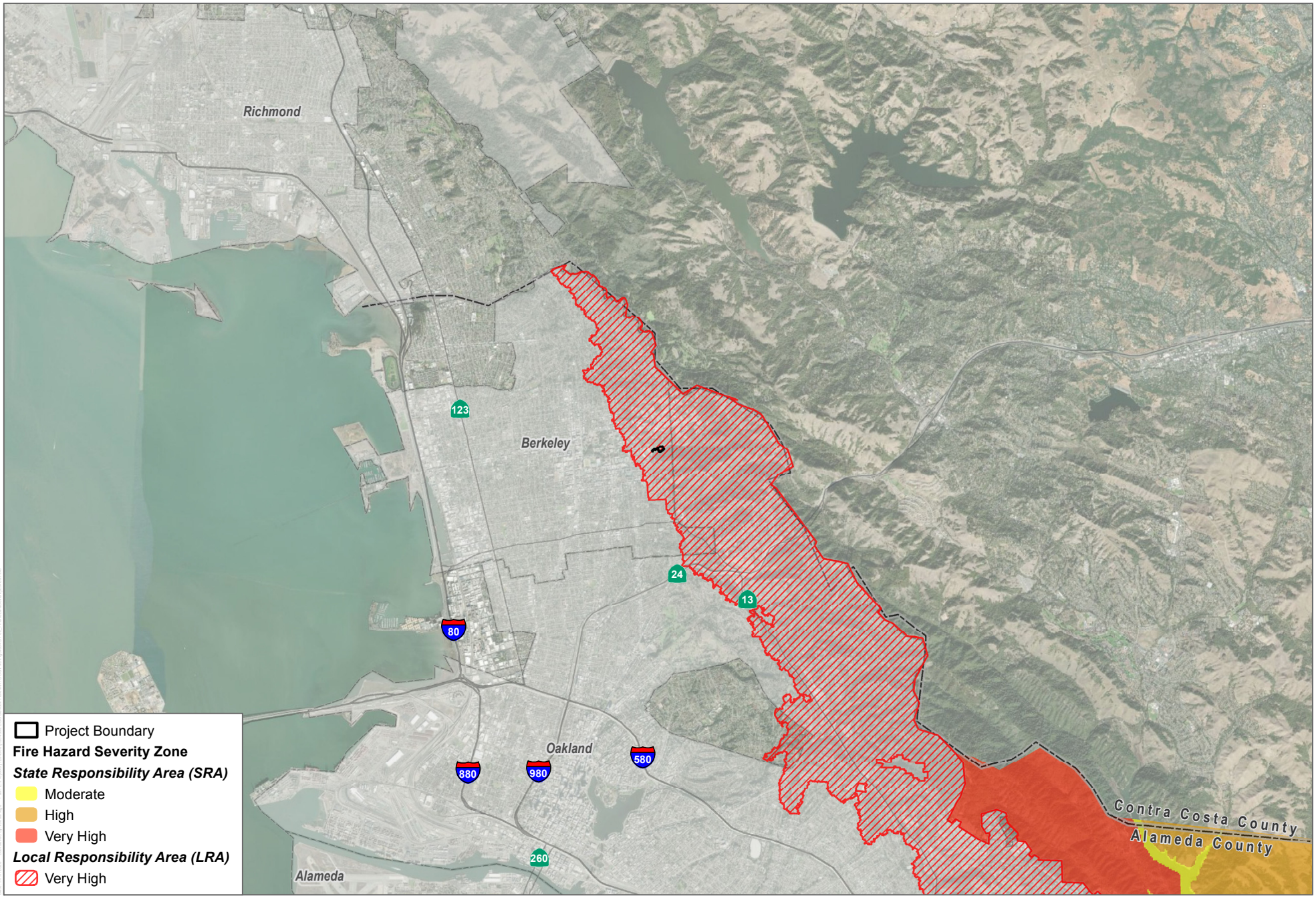

SOURCE: Bing Maps 2022, CALFIRE 2007

DUDEK

0 4,375 8,750 Feet

FIGURE 4.7-2

Fire Hazard Severity Zones

UC Berkeley Cal Softball Field Renovation Project

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4.7.1.4 FIRE PROTECTION RESOURCES

UC Berkeley's Emergency Management Office coordinates activities necessary for preparing for and responding to emergencies such as wildfires. Each UC Berkeley building has a building emergency plan that is updated annually and is made available for all department personnel. In addition, all faculty and staff are required to have necessary health and safety training, such as how to evacuate when necessary. UC Berkeley works closely with external and internal fire management partners related to regional wildfire prevention, including Diablo Firesafe Council, various neighborhood groups, and internal interdisciplinary planning teams. UC Berkeley also partners with Hills Emergency Forum, which consists of multiple local agencies, including UC Berkeley; the cities of Berkeley, El Cerrito, and Oakland; CALFIRE; East Bay Municipal Utility District; East Bay Regional Park District; Lawrence Berkeley National Laboratory (LBNL); and the Moraga-Orinda Fire District. Its mission is to coordinate and share information on the East Bay hills fire hazards (Hills Emergency Forum 2019).

Local fire protection resources include the Berkeley Fire Department, the Oakland Fire Department, and the Alameda County Fire Department. Initial wildfire response to the campus is provided by the Berkeley Fire Department. The nearest fire station is Alameda County Fire Station No. 19, located on Lawrence Road in the LBNL, 1.2 road miles from the project site. The second-nearest fire station is Berkeley Fire Station No. 3, located at 2710 Russell Street in Berkeley, 1.3 road miles from the project site.

4.7.1.5 EXISTING EVACUATION CONDITIONS

A fire evacuation analysis (Appendix H) was performed to determine how long it would take for users and spectators of the Cal Softball Field under existing conditions, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. The evacuation analysis assumed simultaneous evacuation of all residents, researchers/staff, visitors, athletes, etc., as the worst-case scenario, which is referred to as a mass evacuation. It is likely that in an actual evacuation scenario, the Incident Commander would direct a focused evacuation of zones situated near the area that is at higher risk, such as areas in the wildland urban interface. Areas that are not in immediate danger would likely be instructed to remain in place to prioritize the evacuation of vehicles from areas under direct threat. As such, the evacuation analysis in Appendix H represent a worst-case condition and likely overestimates evacuation times. Additional details regarding the specific methodology used to perform the evacuation analysis are included in Section 4.7.3.2, Analytical Methods and Appendix H. Table 4.7-1 below includes the worst-case scenario of modeled evacuation times from selected evacuation areas under existing conditions. The evacuation areas are shown in Figure 4.7-3 and encompass all land use types near the project site that could potentially share the same evacuation route network as project vehicles and that are within the High and Very High FHSZ. As shown in Table 4.7-1, the time to evacuate existing land uses in the surrounding area ranges from approximately 23 minutes to 2 hours and 8 minutes depending on the time of the week and the location of the area evacuating.

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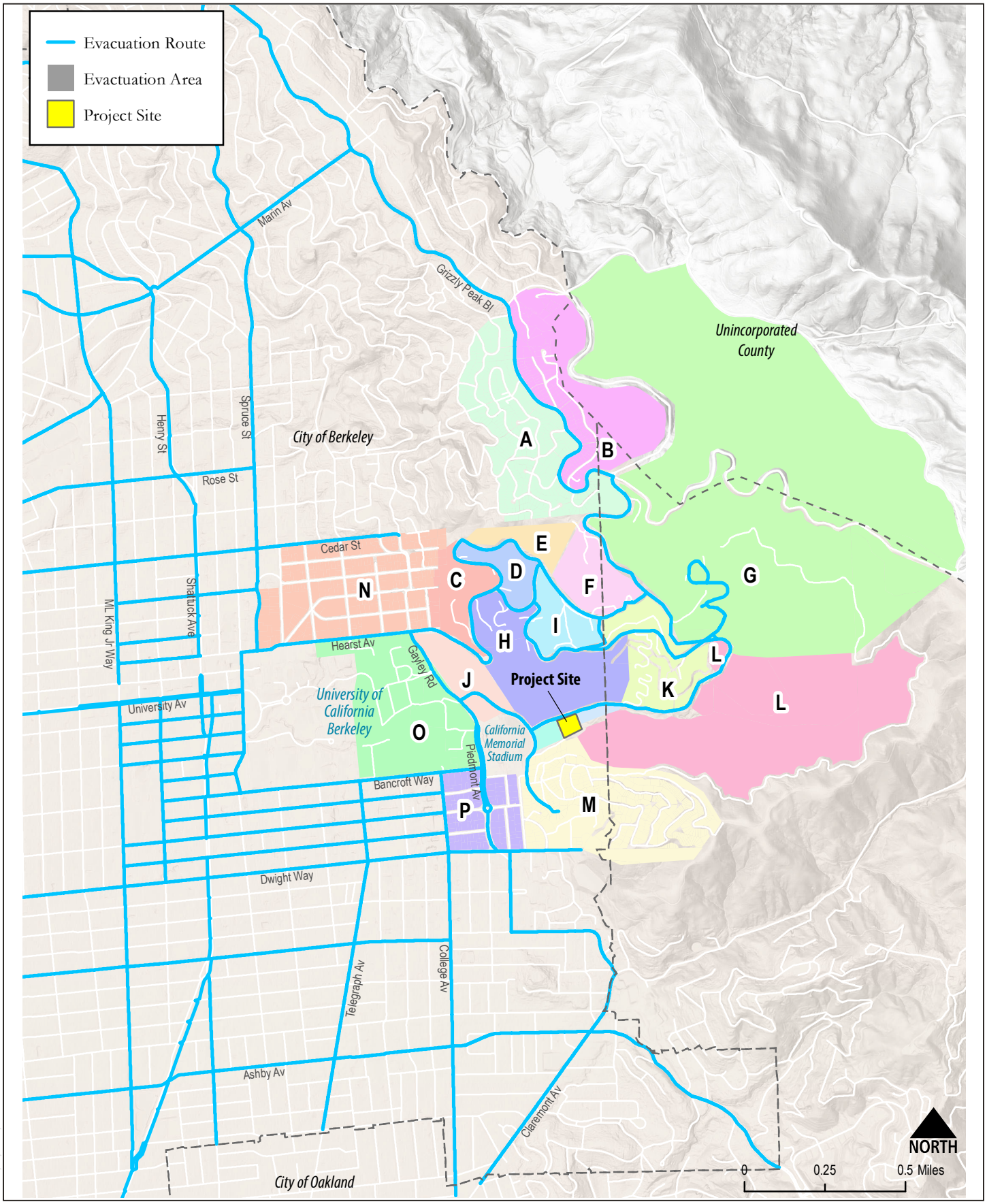

Source: CR Associates 2023

FIGURE 4.7-3

Fire Evacuation Areas

UC Berkeley Cal Softball Field Renovation Project

DUDEK

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TABLE 4.7-1 EXISTING EVACUATION TIMES

Scenario	Evacuating Vehicles			Zone Evacuation Time														
	Nearby Land Uses	Project Site1	Total	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Existing Weekday (Average)	7,429	173	7,602	0:46:56	1:18:24	0:35:09	0:45:30	0:43:09	0:55:54	1:21:57	0:40:22	0:50:59	1:20:24	0:58:18	0:42:50	0:55:18	2:08:39	0:25:50	0:53:05
Existing Weekend (Average)	7,151	173	7,324	0:46:56	1:13:26	0:32:28	0:40:57	0:38:30	0:50:02	1:19:34	0:37:10	0:46:34	1:19:21	0:57:39	0:41:01	0:55:46	2:06:51	0:23:48	0:55:38

Source: Appendix H
Notes:
[1] Evacuating vehicles from the project site under existing conditions are based on the existing average game event. See "Daily No. of Vehicles" from Section 4.6, Transportation (Table 4.6-3) and Appendix H (Attachment B).

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4.7.2 REGULATORY FRAMEWORK

Applicable federal, state, UC, and local regulations related to wildfire hazards are provided in this section.

4.7.2.1 STATE

FIRE HAZARD SEVERITY ZONES AND RESPONSIBILITY AREAS

The CALFIRE publishes maps identifying FHSZs throughout the state and provides these maps through the FRAP database pursuant to Public Resources Code (PRC) Sections 4201–4204. Geographic areas of the state are designated as either Very High, High, or Moderate FHSZs that are determined by a region's land cover, vegetation, terrain, climate, fire history, and several other factors that contribute to the fire environment. The maps identify lands in California as falling within one of the following management areas: LRA, SRA, or federal responsibility area (FRA). Within each of these areas, a single agency has financial responsibility: in LRAs, local fire departments or fire protection districts are responsible; in SRAs, CALFIRE is responsible; in FRAs, federal agencies, such as the United States Forest Service, National Park Service, Bureau of Land Management, United States Department of Defense, United States Fish and Wildlife Service, or Department of the Interior, are responsible.

Within the LRAs, CAL FIRE designates recommended Very High FHSZs for adoption by local jurisdictions. Within the SRA, CALFIRE designates Moderate FHSZs, High FHSZs, and Very High FHSZs. This information is provided to the public and local agencies to incorporate the fire hazard mapping into local planning efforts. FHSZs in the project area are presented in Figure 4.7-2.

CALIFORNIA BUILDING CODE

The California Building Code (CBC), contained in Part 2 of Title 24 of the California Code of Regulations, identifies building design standards, including those for fire safety. Typical fire safety requirements of the CBC include the installation of fire sprinklers in all new high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

Chapter 7A of the CBC, Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a FHSZ. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures.

CALIFORNIA FIRE CODE

The California Fire Code (CFC) incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. The CFC includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. Chapter 49 of the CFC, Requirements for WUI Fire Areas, prescribes construction materials and methods in FHSZs. These requirements generally parallel CBC Chapter 7A.

CFC Section 4903 (California Fire Code 2022) authorizes the fire code official to require the development of a fire protection plan for specific project or development proposed located in the WUI, to be prepared by a qualified specialist who will analyze the wildfire risk of the building, project, premises or region to recommend necessary changes. CFC Section 4903 specifically requires maps of boundaries, terrain, building footprints and fuel modification zones as well as natural vegetation and restoration plans. For fuel modification zones, details regarding the plant type, size and irrigation demands must be included. Also required are legally binding statements regarding both property owner responsibilities for vegetation maintenance and community responsibility for maintenance of fuel modification zones.

The wildfire protection plan prepared as part of the proposed project satisfies the requirements of California Fire Code Section 4903 (see Appendix C). The wildfire protection plan includes a project-specific wildfire hazard assessment that considers the project location, topography, aspect, and climatic and fire history, and indicates that the plan conforms with all applicable fire safety regulations. The plan addresses fuel reduction and building methods and materials required by state codes, as well as fire department access, egress, road and signage, and water supply.

CALIFORNIA PUBLIC RESOURCES CODE

California PRC Sections 4291 et seq. require that brush, flammable vegetation, or combustible growth be removed within 100 feet of buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials.

California PRC Section 4290 requires the State Board of Forestry and Fire Protection to adopt regulations implementing minimum fire safety standards for defensible space that would be applicable to lands within the SRA and lands within Very High FHSZs.

California PRC Section 4442 regulates the use of internal combustion engines that use hydrocarbon fuels on forest-covered land, brush-covered land, and grass-covered land. Internal combustion engines, like those used in construction, must be equipped with a spark arrester, which is a device used for removing and retaining carbon and other flammable particles from the exhaust flow for engines that use hydrocarbon fuels. These engines must be maintained in effective working order or be constructed, equipped, and maintained for the prevention of fire.

STATE RESPONSIBILITY AREAS FIRE SAFE REGULATIONS

SRA Fire Safe Regulations outline basic wildland fire protection standards and can decrease the risk of wildfire events. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations. The State statute for wildfire protection is PRC Section 4290. Requirements in the PRC include information on:

- Road standards for fire equipment access
- Standards for signs identifying streets, roads, and buildings
- Minimum private water supply reserves for emergency fire use
- Fuel breaks and greenbelts
- Basic emergency access

CALIFORNIA OFFICE OF EMERGENCY SERVICES

The Cal OES was established on January 1, 2009, and created by Assembly Bill (AB) 38, which merged the duties, powers, purposes, and responsibilities of the former Cal OES with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall State agency response to major disasters in support of local government. Cal OES is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, man-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. In 2018, Cal OES completed a State Hazard Mitigation Plan, which designated FHSZs and WUI areas (Cal OES 2018).

2018 STRATEGIC FIRE PLAN FOR CALIFORNIA

The State Board of Forestry and Fire Protection and CALFIRE produced the 2018 Strategic Fire Plan for California, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments. The 2018 Strategic Fire Plan for California focuses on fire prevention and suppression activities to protect lives, property, and ecosystems. In addition, CALFIRE provides regulatory oversight to enforce State fire laws and delivers a land use planning and defensible space inspection program to local governments across the state (State Board of Forestry and Fire Protection and CALFIRE 2018).

4.7.2.2 UNIVERSITY OF CALIFORNIA

EMERGENCY PREPAREDNESS PROGRAM

To facilitate mitigation, preparedness, response, and recovery in the event of any emergency, the University of California (UC) system has adopted the National Standard on Disaster/Emergency Management and Business Continuity Programs. Furthermore, the University of California is required under State law to use the Standardized Emergency Management System (SEMS), an emergency management organizational structure used by all emergency response agencies statewide to coordinate incidents between agencies or jurisdictions. The SEMS also incorporates all of the requirements of the National Incident Management System (NIMS). With this, all UC facilities are required to incorporate the major elements of SEMS into their emergency plans and operations, which provides some consistency between multiple public agencies to facilitate smooth coordination. Among the requirements that UC facilities must incorporate from the SEMS are: adopting the Incident Command System (ICS) that is a standardized emergency response organization structure; establishing local interagency agreements as necessary with law enforcement, fire, and medical services; and providing training to responsible individuals involved in emergency response and recovery (UC Office of the President 2020).

EMERGENCY OPERATIONS PLAN

Each UC campus has a specific emergency operations plan (EOP). These plans include in-depth information for how each UC campus responds to any emergency situation, including fire hazards. The UC Office of Emergency Management works with campus units and leadership to respond to and recover from emergency situations. The current UC Berkeley EOP, which was adopted in 2022, broadly defines the policies, procedures, and organizational structure UC Berkeley will use in response to emergencies that affect the campus community and disrupt normal campus operations.

The EOP addresses any emergency or other event that threatens the health, safety, and security of the campus and the students, faculty, staff, visitors, and general public within the main UC Berkeley campus, as well as other properties owned or leased by the campus. The EOP is designed to provide the UC Berkeley with a management

tool to facilitate a timely, effective, efficient, and coordinated emergency response. The EOP incorporates the components of the SEMS, as described by California Government Code 8607(a); and ICS and the NIMS as described in the Department of Homeland Security document titled, *National Incident Management System*, dated October 10, 2017. The required components of SEMS and NIMS are reflected within the EOP (UC Berkeley 2022).

Given the potential for day-to-day and large-scale hazards that may affect the UC Berkeley campus, a tiered approach has been established in the EOP to define the appropriate response to any campus emergency, including routine responses, limited emergencies, and major emergencies. The EOP establishes delegation authority, procedures for declaration of campus emergencies, and institutional priorities. The EOP also provides the campus emergency response structure, training, and procedures. It provides the location and authority of the Emergency Operation Center as well as crisis communications and alerts for use while preparing for, responding to, and recovering from emergencies that impact the campus and its community.

WILDLAND VEGETATIVE FUEL MANAGEMENT PLAN

In February 2021, UC Berkeley approved a Wildland Vegetative Fuel Management Plan (WVFMP) for the Hill Campus, including the Hill Campus East and Hill Campus West zones (UC Berkeley 2020). UC Berkeley also certified the WVFMP EIR in February 2021 (UC Berkeley 2021e). The WVFMP provides guidance on implementing projects that reduce wildfire risk and minimize potential for harmful effects of wildfire on people, property, and natural resources. The WVFMP proposes treatments of vegetation and associated fuels on approximately 200 acres per year within the 800-acre UC Berkeley Hill Campus to improve public safety and reduce losses/damage from wildland fire. The plan proposes treating vegetation that could become fire fuel according to four treatment types—evacuation support treatments, temporary refuge areas, fuel break treatments, and fire hazard reduction treatments (UC Berkeley 2020). There are four vegetation treatment types including manual treatment, mechanical treatment, prescribed broadcast burning, managed herbivory (livestock grazing), and targeted ground application of herbicides.

As described in the WPP, UC Berkeley Facilities Services has treated vegetation in the Hill Campus for years, and now has an expansive ongoing vegetation treatment and maintenance program in the Hill Campus West, based on the implementation of the WVFMP. Current vegetation treatments take the form of defensible space creation and maintenance, roadside treatments, turnout and signpost treatments, exotic plant removal and maintenance, as well as evacuation support, hazard tree removal, and replanting with fire-resistant vegetation. Generally, treatments occur annually, including maintenance of the evacuation support treatments to improve emergency access and evacuation support within 100 feet of either side of large portions of Centennial Drive, along upper portions of Claremont Avenue and along the Jordan Fire Trail. Environmental impacts associated with implementation of the WVFMP were analyzed in the WVFMP EIR.

UC BERKELEY CAMPUS DESIGN STANDARDS

UC Berkeley created the Campus Design Standards to guide design and construction professionals to complete lasting, high-quality additions to the UC Berkeley built environment. The Campus Design Standards, along with applicable codes, ensure that new construction and renovation projects at UC Berkeley integrate industry best practices and experience with existing UC Berkeley buildings, infrastructure, grounds, and maintenance issues. Relevant sections of the Design Standards are:

Section 21 of the Campus Design Standards provides directions for the design, installation, and maintenance of fire suppression systems in order to ensure systems are built to code and UC Berkeley standards for enhancing life safety and reducing fire risk. Similarly, Section 28 of the Campus Design Standards includes directions for the design, installation, and maintenance of fire alarm systems for all UC Berkeley buildings.

UC BERKELEY CONTINUING BEST PRACTICES

UC Berkeley currently implements continuing best practices (CBPs) to ensure environmental impacts from development and ongoing UC Berkeley operations would be reduced and/or avoided to the greatest extent feasible. CBPs are implemented as part of proposed projects and as part of UC Berkeley's standard, ongoing operations. Relevant project specific CBPs would be implemented as part of the proposed project, as described in Chapter 3, Project Description. Applicable CBPs, which include both those implemented as part of the proposed project and those implemented as part of ongoing operations, are listed where relevant in the impact analyses presented in this section, to illustrate how they would help to reduce and/or avoid environmental impacts from the proposed project. A complete list of CBPs is provided in Appendix B, University Continuing Best Practices, of this Draft EIR.

4.7.2.3 LOCAL

As discussed in Chapter 2, 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 policies, regulations or plans in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly uses a local policy, regulation, or plan 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. The following local plans and regulations are provided for informational purposes only to provide context as they influence regional conditions related to wildfire and related emergency response.

ALAMEDA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

The Alameda County Community Wildfire Protection Plan (CWPP) was most recently updated in 2015 by the Diablo Fire Safe Council in conjunction with the Alameda County Fire Chiefs Association, Hills Emergency Forum, Oakland Wildfire Prevention Assessment District, and stakeholder committee members. It provides an analysis of the WUI areas of Alameda County. The Alameda County CWPP describes the local fire environment, identifies values at risk from wildfires, presents high fire hazard areas, describes measures the community can take to reduce ignitability of structures and prioritize fuel management projects, identifies fuel reduction best management practices, and identifies federal, State, and local resources. The cities of Berkeley and Oakland are described as the most heavily urbanized areas within the county.

The Alameda County CWPP lists recommendations for reducing wildfire risk, including increasing awareness of hazard conditions; restricting certain equipment or work during high fire danger weather; maintaining and enforcing defensible space around buildings and reducing fuel sources adjacent to buildings; planting fire-resistant plants and using fire-resistant building materials; managing vegetation responsibly; and creating collaborative partnerships between local communities, natural resource, and fire response groups.

ALAMEDA COUNTY EMERGENCY OPERATIONS PLAN

The Alameda County Emergency Operations Plan (EOP), dated December 2012 and put together by the Alameda County Sheriff's Office of Homeland Security and Emergency Services, provides an overview of the jurisdiction's approach to emergency operations for the county, including those pertaining to wildfires. The Alameda County EOP gives a description and history of the wildfire threat to the county, among other hazards, and provides an overview of emergency response policies, response and recovery organization, and roles and responsibilities assigned to governmental agencies and community partners. The Alameda County EOP is intended to be used for all types of

emergencies in order to facilitate response and recovery activities. As of 2023, the EOP is being updated by the Alameda Office of Emergency Services and is out for public comment.

CITY OF BERKELEY GENERAL PLAN

Fire hazards are discussed in the disaster preparedness and safety element of the 2002 Berkeley General Plan. One of the Disaster Preparedness and Safety Element's main objectives is to reduce the potential for loss of life, injury, and economic damage resulting from urban and wildland fire. Policy S-1, Response Planning, is meant to ensure that Berkeley's emergency response plans incorporate the latest information and establish clear coordination of roles with other local jurisdictions and agencies, including UC Berkeley.

BERKELEY LOCAL HAZARD MITIGATION PLAN

The 2019 Berkeley LHMP evaluates risks that different hazards pose to Berkeley and associated mitigation measures. The Berkeley LHMP documents current understanding of hazards and the City of Berkeley's vulnerabilities to them; presents a mitigation strategy for a time period of five years; and fulfills requirements of the federal Disaster Mitigation Act of 2000, which requires all communities to prepare mitigation plans. The Berkeley LHMP highlights that the City is vulnerable to wildfires, particularly in the WUI, and lists this as one of the City's hazards of greatest concern. Notable mitigation strategies discussed in the Berkeley LHMP include prevention through development regulations; natural resource protection through vegetation management; improvement of access and egress routes; and infrastructure maintenance and improvements to support first responders' efforts in reducing fire spread.

BERKELEY MUNICIPAL CODE

Chapter 19.28 of the Berkeley Municipal Code is the Berkeley Building Code, which adopts with amendments the CBC. Section 19.28.030 adopts with modifications CBC Chapter 7A, Materials and Construction Methods for Exterior Wildlife Exposure. This section defines three fire zones for the City of Berkeley, in order of fire risk, with 3 being most at risk. Fire Zone 1 encompasses the entire City except for those under Fire Zones 2 and 3. Fire Zone 2 encompasses areas zoned as Combined Hillside Districts and areas designated as Very High FHSZs by CALFIRE (including the eastern section of the UC Berkeley Campus Park to the east city line, all of the Clark Kerr Campus to the east city line, and all of block number 7680 and portions of block number 1702 in the Alameda County Assessor's parcel number system). Fire Zone 3 encompasses areas zoned as Environmental Safety – Residential Districts, which includes the Panoramic Hill Neighborhood in southeast Berkeley.

Chapter 19.48 of the Berkeley Municipal Code is the Berkeley Fire Code, which adopts the CFC with amendments. Section 19.48.020 defines WUI fire area as "a geographical area identified by the State as a Fire Hazard Severity Zone in accordance with PRC Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires." This section identifies the City's WUI as Berkeley Fire Zones 2 and 3.

4.7.3 IMPACTS AND MITIGATION MEASURES

4.7.3.1 STANDARDS OF SIGNIFICANCE

The standards of significance used to evaluate the impacts of the proposed project related to wildfire and related to hazards are based on Appendix G of the CEQA Guidelines, as listed below. The proposed project would result in

a significant impact if it were located in or near state responsibility areas of lands classified as very high fire hazard severity zone and would:

A. Substantially impair an adopted emergency response plan or emergency evacuation plan. (The standard of significance from Appendix G of the CEQA Guidelines for Hazards and Hazardous Materials is substantially the same as this standard as it states, "Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan." Therefore, both standards will be addressed as Standard of Significance A).
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.
E. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.
F. Result in a cumulatively considerable impact with regard to wildfire.

The study of evacuation timeframes and potential increases in evacuation time with a proposed project are relatively new CEQA focus areas. Public safety, not time, is generally the guiding consideration for evaluating impacts related to emergency evacuation. Consistent Standard of Significance A above, a project's impact on evacuation is significant if the project would significantly impair or physically interfere with implementation of an adopted emergency response or evacuation plan.

In any populated area, safely undertaking large-scale evacuations may take several hours or more and require moving people long distances to designated areas. Further, evacuations are fluid and timeframes may vary widely depending on numerous factors, including, among other things, the number of vehicles evacuating, the road capacity to accommodate those vehicles, residents' awareness and preparedness, evacuation messaging and direction, and on-site law enforcement control. The "Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act" guidance from the California Office of the Attorney General suggests that jurisdictions set benchmarks of significance based on past successful evacuations or on those from communities in similar situations.

A recent study titled "Review of California Wildfire Evacuation from 2017 to 2019" provides more insights on the topic. This research involved interviews with 553 individuals (297 evacuees affected by various fires) including the Creek Fire (Fresno and Madera Counties), Rye Fire (Santa Clarita Valley region of Los Angeles County), Skirball Fire (Los Angeles County), and Thomas Fire (Ventura and Los Angeles Counties). The study aimed to understand the decision-making processes of these individuals during the fires, such as whether to evacuate or stay, when to leave, the paths taken, chosen shelters, destinations, and modes of transportation. According to this research, the time it took for evacuations ranged from under 30 minutes to over 10 hours. From this dataset, the average evacuation time for the Creek Fire was found to be 3 hours and 40 minutes, involving 115,000 people. For the Thomas Fire, the average time was 4 hours and 25 minutes, impacting 104,607 individuals.

California fire and law enforcement agencies have integrated training, experience, and technology to assist in successful evacuations, which focus on moving persons at risk to safer areas before a wildfire encroaches on a populated area. Timeframes for moving people vary by site specifics, population, road capacities and other factors

and there is no one significance threshold that would be appropriate to all locations. This is primarily because every location and fire scenario are unique. While it may take one community 20 minutes to evacuate safely, it is not a valid assumption to consider a 3-hour evacuation for another community as unsafe. The 3-hour evacuation can be very safe while the 20-minute evacuation may be unsafe due to the conditions and exposures along the evacuation routes. Therefore, there are no established significance thresholds for evacuation times for this project or at the time of this EIR's preparation, for any California community.

4.7.3.2 ANALYTICAL METHODS

The standards listed in Section 4.7.3.1, Standards of Significance, apply to projects that are in or near a SRA or a Very High FHSZ. As shown in Figure 4.7-2, the project site is not within a SRA; however, the project site is within the Very High FHSZ in the LRA. Therefore, the standards of significance in Section 4.7.3.1 apply to the proposed project.

The analysis of potential impacts related to wildfire was based on review of the existing setting described in Section 4.7.1, Environmental Setting. Changes to wildfire risks and associated conditions resulting from implementation of the proposed project are identified and qualitatively evaluated (generally) based on the proposed modifications to the existing setting from the proposed project, as described in Chapter 3, Project Description, as well as based on review of the wildfire protection plan (Appendix C) and the fire evacuation analysis (Appendix H), both of which were prepared for the proposed project. The fire evacuation analysis assesses the time required for emergency evacuation under several scenarios, assuming a wind-driven fire that results in an evacuation affecting the project site and surrounding community. This analysis reports on the results of evacuation traffic simulations that provide vehicle travel times in simulated evacuation scenarios. The scenarios evaluated included: existing weekday and existing weekend, cumulative weekday and cumulative weekend,[2] and hillside evacuation only[3]. Each of these scenarios addressed existing conditions and existing plus project conditions for both the average game event and the maximum game event. These event types are further described below.

The scenarios analyzed represent worst-case evacuation scenarios based on conservative assumptions of factors that could affect the evacuation analysis. For example, the scenarios assumed either an early evening or weekend (Saturday) evacuation when all surrounding community residents would likely be home. The analysis further assumes a total evacuation of all persons in the study area, as well as a mass evacuation that presumes that everyone leaves simultaneously. Evacuating everyone at once places extra burdens and pressures on the transportation network, thereby prolonging the time needed for a complete evacuation. In a real-world evacuation situation, the Incident Commander, consistent with best practices, would likely focus on high-risk areas, enabling a more staggered and targeted evacuation approach. The results of the fire evacuation analysis related to the proposed project are reported in Impact WF-1 and Impact WF-6.

As reported in Chapter 3, Project Description, the five-year game average attendance between 2016 to 2022 during the regular season was approximately 500 spectators. Additionally, a typical Cal Softball game has an average of 92 game participants (including players, coaches, and staff) totaling 592 persons at the Cal Softball Field. The average attendance with the implementation of the proposed project is estimated to increase the average attendance to 1,000 spectators, resulting in a net increase of 500 spectators. In comparison, the maximum event

[2] The cumulative scenarios assumed a complete implementation of the UC Berkeley Long Range Development Plan (LRDP), a 10% increase in evacuating vehicles for non-residential land uses located outside of the LRDP area, and an increase of 5% in the number of vehicles evacuating from residential areas. This 5% increase for residential land use was chosen as a conservative approach to factor in possible residential developments such as conversions into condos, extensions to existing residences, the addition of accessory dwelling units, and other minor enhancements (Appendix H).

[3] The hillside evacuation only scenarios provide a more accurate depiction of potential evacuation conditions, as the hillside communities are situated within the Wildland-Urban Interface, making them more vulnerable to risk. As a result, these areas are more likely to receive evacuation orders earlier than other parts of the study area (Appendix H).

is based on a "sell-out" event at the softball field, which would increase from 1,340 spectators under existing conditions to 1,511 spectators with the implementation of the proposed project, for a net increase of 171 spectators, based on the increase in the number of seats with the proposed project. The 92 game participants (including players, coaches, and staff) would remain unchanged with the proposed project. The fire evacuation analysis (Appendix H) includes both the maximum and average scenarios, however the focus of the fire evacuation analysis is on the results of the average scenarios, given that these scenarios represent the greatest increase in the number of evacuating vehicles with the proposed project. The results from the maximum scenario are included in Appendix H. Therefore, the impact analysis provided in Section 4.7.3.3, Impact Analysis, presents the evacuation results for the average scenarios presented in the fire evacuation analysis (Appendix H). The daily number of vehicles associated with both the average and maximum scenarios from Section 4.6, Transportation (Table 4.6-3 and Table 4.6-4), is used where relevant in Appendix H.

4.7.3.3 IMPACT ANALYSIS

Impact WF-1 Impairment of Emergency Response or Evacuation Plan (Significance Standard A). The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. *(Less than Significant)*

As described above, the project site is located within a Very High FHSZ in LRA. This section analyzes the project impacts to the City of Berkeley Emergency Operation Plan, the Alameda County Emergency Operation Plan, and the UC Berkeley Emergency Operation Plan. As described in Chapter 3, Project Description, the proposed project includes the renovation of the existing Cal Softball Field, implementation of project specific CBPs related to wildfire (CBP PS-2 and CBP WF-3), and implementation of the wildfire protection plan (see Appendix C). The project specific and campus wide wildfire CBPs relevant to emergency response are listed here (see Appendix B for all CBPs) and the wildfire protection plan measures are listed in Table 3-3 of Chapter 3, Project Description:

- **CBP WF-4:** UC Berkeley will continue to plan and collaborate with other agencies through participation in the Hills Emergency Forum.
- **CBP PS-2:** UC Berkeley will continue its partnership with the Lawrence Berkeley National Laboratory, Alameda County Fire Department, Oakland Fire Department, and Berkeley Fire Department to ensure adequate fire and emergency service levels to UC Berkeley facilities. This partnership will include consultation on the adequacy of emergency access routes to all new UC Berkeley buildings. UC Berkeley will also continue to work closely with external fire management partners related to regional wildfire prevention, including the Hills Emergency Forum, Diablo Firesafe Council, and various neighborhood groups and internal interdisciplinary planning teams.

Uses at the project site are expected to remain the same, as the Cal Softball Field would continue to be used as a softball field by UC Berkeley's Intercollegiate Athletic (IA) Women's Softball Program and by Rec Sports. There would be an increased capacity for spectators from 1,340 seats under existing conditions to 1,511 seats and improved facilities under project conditions. It is expected that there would be an increase of competitive games from 15 to 20 games under existing conditions to up to 25 with the proposed project. As described in Section 4.7.3.2, Analytical Methods, under existing conditions a typical Cal Softball game has an average spectator crowd of approximately 500 persons and 92 game participants (including players, coaches, and staff) totaling 592 persons and 173 daily vehicles, with a maximum existing capacity of 1,340 spectators and 92 participants totaling 1,432 total persons and 439 daily vehicles. For the proposed project, it is expected that the average spectator crowd would increase to approximately 1,000 persons and the number of game participants would remain the same, totaling 1,092 persons and 331 daily vehicles. The maximum spectator crowd would increase to approximately 1,511 persons and the

number of game participants would remain the same, totaling 1,603 persons and 493 daily vehicles with the proposed project. The daily vehicles used in the evacuation analysis are provided in Section 4.6, Transportation (Table 4.6-3 and Table 4.6-4). A fire evacuation analysis was prepared for the proposed project (see Appendix H to this EIR) and the conclusions of this analysis are described herein, where relevant.

CONSTRUCTION

Vehicles and personnel at the project site would be limited to construction vehicles and construction workers. Overall, there would be a decrease in people occupying the project site during the construction period compared to existing operational uses. While construction work may require temporary sidewalk or parking lane closures, these temporary changes would be coordinated and would follow campus CBPs (see Appendix B). Consistent with CBP TRAN-5, CBP TRAN-6, and CBP TRAN-7, the construction traffic management plan for the proposed project would describe standards and protocols to protect bicyclists and pedestrians, provide for emergency vehicle access, and provide a point of contact on campus for construction-related complaints (see Section 4.6, Transportation, for additional information about these CBPs). Thus, project construction would not substantially burden existing evacuation routes. While construction could temporarily disrupt adjacent traffic patterns, implementation of construction traffic management plans, pursuant to the above CBPs would prevent temporary impairment of emergency response or emergency evacuation procedures. In the event of a wildfire emergency requiring evacuation and emergency vehicle access, project occupants would comply with all evacuation orders. As such, with adherence to the CBPs, project construction would not require modifications to an existing EOP or evacuation plan, project construction would not substantially impair an emergency operations plan or evacuation plan, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

Operation of the proposed project could impact an emergency operations plan or evacuation plan if it would involve physical changes that would impede emergency response to the project site or the immediate vicinity, or if it would otherwise interfere with emergency evacuation plans. Centennial Drive provides fire and emergency access to the project site. As described in Appendix H and Section 4.6, Transportation, project operation is assumed to increase the average attendance of a game by 500 users and 158 daily vehicles at the project site, with an assumed maximum attendance increasing by 171 users and 54 daily vehicles. As indicated in Chapter 3, Project Description, the project includes game-day transportation demand management (TDM) measures that would reduce trip generation and associated automobile congestion, increase pedestrian and bicycle use, and encourage transit with the implementation of the proposed project. The TDM measures include the following:

- Continued use of Bear Transit H Shuttle to provide weekday shuttle service to the project site, connecting the site to the Main Campus Park and the Botanical Garden and Lawrence Hall of Science.
- Managing signed and designated pick-up/drop-off areas for passenger loading, including users that access the site via rideshare vehicles. See Section 3.5.5.1, Site Access, for details.
- Visiting team's athletes and associated staff will arrive via bus to the field, where they will be dropped off. The bus will then be routed to the Foothill parking lot or the Southwest Crescent. Each school is responsible for its own travel.
- Publicize and continue communication on game day transportation-related information to promote non-driving options:
    - IA will advertise transit and parking information for game day events on their website.

- UC Berkeley Parking and Transportation lists all parking and transit options on their website, pt.berkeley.edu. Visitors will find details on getting to and from the BART station through this website.

However, it is not possible to accurately assess the trip reduction associated with these TDM measures and therefore they were not considered in the trip generation estimates (see Tables 4.6-3 and 4.6-4 in Section 4.6, Transportation, for additional information about project trip generation).

Emergency evacuation from the site and surrounding area is assumed to occur on local streets. Note that the City of Berkeley's 2019 Local Hazard Mitigation Plan outlines alternate evacuation paths for residents of the hillside, featuring a wide-ranging network of trails that facilitate more direct exits from the area during emergencies (City of Berkeley 2019). However, the current analysis intentionally does not factor in these trail networks, aiming for a more conservative assessment. The fire evacuation analysis conducted for the proposed project assesses the time required for emergency evacuation under several scenarios, assuming a wind-driven fire that results in an evacuation affecting the project site and surrounding community (see Section 4.7.3.2, Analytical Methods, and Appendix H for information about modeling assumptions and the scenarios evaluated). The greatest increases in evacuations times with the proposed project would occur under the average event scenarios, given that these scenarios would result in a greater net increase in daily vehicles than the maximum event scenarios. Therefore, the evacuation results for the average scenarios presented in the fire evacuation analysis are presented in Table 4.7-2 and summarized herein (see Figure 4.7-3 for the referenced evacuation areas):

- Existing With Project (Weekday) - The greatest increases in evacuation time with the project for existing weekday scenarios are observed in areas J (7 minutes 9 seconds) and P (10 minutes 25 seconds). These areas include parking structures, resulting in a longer exit time for the project's traffic. The largest increase in evacuation time for a non-parking structure area is seen in area G, with an increase of 4 minutes and 54 seconds.
- Existing With Project (Weekend) - For the weekend scenarios, the greatest changes in evacuation time with the project are also seen in areas J (3 minutes 16 seconds) and P (5 minutes 18 seconds). Again, these are areas with parking structures, meaning it would take a more extended period for the project's traffic to vacate the structures. The greatest increase in evacuation time for a non-parking structure area with the project would happen in area G, at 2 minutes and 41 seconds.
- Hillside Only with Project (Weekday) - As described in Section 4.7.3.2, Analytical Methods, and Appendix H, the hillside evacuation only scenarios provide a more accurate depiction of potential evacuation conditions, as the hillside communities are situated within the Wildland-Urban Interface, making them more vulnerable to risk. As a result, these areas are more likely to receive evacuation orders earlier than other parts of the study area. The greatest changes in evacuation time with the project under the hillside only scenario are seen in areas L (4 minutes 38 seconds) and P (7 minutes 22 seconds). Again, these are areas with parking structures, meaning it would take a more extended period for the project's traffic to vacate the structures. The greatest increase in evacuation time for a non-parking structure area with the project in the hillside only scenario would happen in area G, at 3 minutes and 37 seconds.

The results of the modeling of the cumulative scenario presented in Table 4.7-2 are described in the cumulative impact analysis in Impact WF-6.

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TABLE 4.7-2 – EVACUATION TIME BY AREA BY SCENARIO

Scenario	Name	Evacuating Vehicles			Zone Evacuation Time														
		Nearby Land Uses	Project[1]	Total	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Existing Weekday (Average)	7,429	173	7,602	0:46:56	1:18:24	0:35:09	0:45:30	0:43:09	0:55:54	1:21:57	0:40:22	0:50:59	1:20:24	0:58:18	0:42:50	0:55:18	2:08:39	0:25:50	0:53:05
2	Existing Weekday (Average) with Project	7,429	331	7,760	0:46:56	1:18:24	0:35:09	0:45:30	0:43:09	0:55:54	1:26:51	0:40:22	0:50:59	1:27:33	1:01:36	0:42:50	0:55:34	2:08:40	0:25:50	1:03:30
Change in Evacuation Time		–	**158**	**158**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:04:54**	**0:00:00**	**0:00:00**	**0:07:09**	**0:03:17**	**0:00:00**	**0:00:16**	**0:00:01**	**0:00:00**	**0:10:25**
5	Existing Weekend (Average)	7,151	173	7,324	0:46:56	1:13:26	0:32:28	0:40:57	0:38:30	0:50:02	1:19:34	0:37:10	0:46:34	1:19:21	0:57:39	0:41:01	0:55:46	2:06:51	0:23:48	0:55:38
6	Existing Weekend (Average) with Project	7,151	331	7,482	0:46:56	1:13:26	0:32:28	0:40:57	0:38:30	0:50:02	1:22:15	0:37:10	0:46:34	1:22:37	0:59:49	0:41:08	0:55:46	2:06:51	0:23:48	1:00:56
Change in Evacuation Time		–	**158**	**158**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:02:41**	**0:00:00**	**0:00:00**	**0:03:16**	**0:02:10**	**0:00:08**	**0:00:00**	**0:00:00**	**0:00:00**	**0:05:18**
9	Cumulative Weekday (Average)	8,238	173	8,411	0:48:44	1:42:31	0:46:43	1:12:18	1:04:26	1:25:54	1:30:02	0:59:37	1:19:28	1:32:01	1:01:28	0:43:39	0:57:41	2:16:49	1:14:37	0:58:28
10	Cumulative Weekday (Average) with Project	8,238	331	8,569	0:48:44	1:42:31	0:46:43	1:12:18	1:04:26	1:25:54	1:35:36	0:59:37	1:19:28	1:42:27	1:04:50	0:43:39	0:58:26	2:16:49	1:14:37	1:09:39
Change in Evacuation Time		–	**158**	**158**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:05:34**	**0:00:00**	**0:00:00**	**0:10:26**	**0:03:22**	**0:00:00**	**0:00:45**	**0:00:00**	**0:00:00**	**0:11:11**
13	Cumulative Weekend (Average)	7,889	173	8,062	0:48:44	1:38:41	0:43:42	1:04:08	1:00:13	1:16:23	1:23:36	0:54:09	1:11:51	1:26:55	0:59:26	0:42:11	0:58:04	2:14:23	1:06:39	0:57:25
14	Cumulative Weekend (Average) with Project	7,889	331	8,220	0:48:44	1:38:41	0:43:42	1:04:08	1:00:13	1:16:23	1:28:49	0:54:09	1:11:51	1:33:15	1:01:42	0:42:11	0:58:04	2:14:23	1:06:39	1:03:22
Change in Evacuation Time		–	**158**	**158**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:05:13**	**0:00:00**	**0:00:00**	**0:06:19**	**0:02:16**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:05:57**
17	Existing Weekday (Average) – Hillside Evacuation Only	1,437	173	1,610	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:21:00	0:38:05	0:00:00	0:00:00	0:00:00	0:29:10	0:23:15	0:54:36	0:00:00	0:00:00	0:22:42
18	Existing Weekday (Average) with Project – Hillside Evacuation Only	1,437	331	1,768	0:00:00	0:00:00	0:00:00	0:00:00	0:00:00	0:21:00	0:41:42	0:00:00	0:00:00	0:00:00	0:32:59	0:27:53	0:55:19	0:00:00	0:00:00	0:30:04
Change in Evacuation Time		–	**158**	**158**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:00:00**	**0:03:37**	**0:00:00**	**0:00:00**	**0:00:00**	**0:03:49**	**0:04:38**	**0:00:43**	**0:00:00**	**0:00:00**	**0:07:22**

Source: Appendix H

Notes:

1 Evacuating vehicles from the project site under project conditions are based on the project average game event. See "Daily No. of Vehicles" from Section 4.6, Transportation (Table 4.6-3) and Appendix H (Attachment B).

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The proposed project incorporates several elements that would provide for efficient and safe evacuation, as provided in the wildfire protection plan. However, these elements are conservatively not included in the evacuation time results. Such features include preparedness for evacuation, fuel modification along roadways near the project site being conducted under the adopted WVFMP, a roundabout for emergency vehicles, reduction in project site parking and implementation of the project specific TDM plan to reduce vehicle travel to the site, described above. Additionally, Section 4.6, Transportation, includes a mitigation measure (MM TRA-1) requiring pedestrian safety improvements between the project site and the adjacent access routes along Stadium Rim Way and Canyon Road to improve pedestrian access between the project site and adjacent parking lots. While these project elements and improvements could minimize the possibility of evacuation friction or interruption, the traffic evacuation model and the evacuation times presented above do not aptly represent them (Appendix H).

Additionally, the evacuation times presented above are based on mass evacuation scenarios to provide a worst-case scenario; however, mass evacuation scenarios are avoided with the technology in use today. Technological advancements and improved evacuation strategies learned from prior wildfire evacuation events have resulted in a system that is many times more capable of managing evacuations. With the technology in use today, evacuations are more strategic and surgical than in the past, evacuating smaller areas at highest risk and phasing evacuation traffic so that it flows more evenly and minimizes the surges that may slow an evacuation. Mass evacuation scenarios where large populations are all directed to leave simultaneously, resulting in traffic delays, are thereby avoided, and those populations most at risk are able to safely evacuate (Appendix H).

Lastly, most of the competitive softball season transpires outside of fire season. The softball season commences in February and concludes in late May. Examination of the Cal Softball schedule from 2018 to 2022 (excluding 2020 due to the pandemic) shows that the final softball game ends in late May. Looking at the fire history from 2013 to 2023, as per the CALFIRE database, only a minimal five percent (5%) of the fires in Alameda County occurred during the softball season, specifically in the month of May.[4] Therefore, while the project would potentially increase the number of people and vehicles evacuating the project site and surrounding area, the increase in evacuation times would not be substantial.

As described under Impact TRA-4 in Section 4.6, Transportation, the project would provide sufficient emergency access to the project site and would not impede emergency access to surrounding areas. The project would not result in substantial changes to circulation patterns or emergency access routes and would not cut off, block, or otherwise modify existing evacuation routes. It would, instead, implement certain parking, roadway and sidewalk improvements that would improve evacuation from the site. Additionally, the project would not induce substantial population growth that could impede emergency response or evacuation procedures. In the event of a wildfire emergency requiring evacuation and emergency vehicle access, project occupants would comply with all evacuation orders. Therefore, the operation of the project would not interfere with UC Berkeley's and other local agencies' emergency response and evacuation plans and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to emergency response and evacuation plans, and therefore, no mitigation measures are required.

[4] While fall softball practice games do lead to an overall increase in users with the project, this increase is lower than the increase in users that would occur during the spring competitive season with the project, which is the basis for the evacuation analysis conducted in Appendix H.

Impact WF-2 Exacerbate Wildfire Risks (Significance Standard B). The proposed project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, or other factors. *(Less than Significant)*

As described in Section 4.7.1, Environmental Setting, the project site is within a WUI location and Very High FHSZ in an LRA. The project would include the renovation of an existing softball field, associated improvements, and implementation of a wildfire protection plan (see Appendix C). Factors that influence the wildfire environment at the project site include Diablo winds (prevailing winds), a dry climate, steep slopes, and vegetation (fuel).

The proposed project includes project specific and campus wide CBPs relevant to emergency response listed in Impact WF-1 (CBP WF-4 and PS-2). Additionally, campus wide measures related to reducing fire risk are being implemented on an ongoing basis (CBP WF-1 and WF-2) and the proposed project includes the implementation of a project specific CBPs related to reducing wildfire risk (CBP WF-3), all of which are provided below (see Appendix B for all CBPs):

- **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.

The proposed project also includes the implementation of wildfire protection plan and associated measures listed in Table 3-3 of Chapter 3. These measures include proposed conditions related to water, electrical, and drainage infrastructure; access for emergency responders and evacuation; ignition prevention measures; fire reduction measures; and monitoring measures.

CONSTRUCTION

As described in Chapter 3, Project Description, construction activities for the project would entail the following phases: 1) demolition of some existing facilities, grading and excavation, tree removal, trenching for utilities, construction of stormwater facilities, and site preparation; 2) construction of the new field, concourse, and circulation and utility improvements; and 3) finishing of the field, building interior, circulation and signage, and installation of landscaping and fencing. During construction, the project would introduce new potential sources of ignition to the project site, including the use of heavy machinery and the potential for sparks during welding activities or other hot work. However, as outlined in the WPP best practices would be implemented to avoid accidental ignitions such as continued vegetation treatments under the WVFMP, and the development of a plan for contingencies when fire danger is high and events are held concurrently. Additionally, the following precautions are outlined as part of the construction fire prevention plan included as part of Appendix C:

- The site will be assessed by the contract administrator for wildland fire risk prior to beginning operations at the site.
- Hazard reduction inside and around the perimeter of the site will be performed in accordance with the ignitions and fuels reduction.

- Other fire prevention measures may include regular watering to reduce fire potential danger.
- Smoking, welding, and fueling of equipment will be done only in designated areas with appropriate fire protection measures as described in (Appendix C, Table 9).
- Parking will be permitted in areas absent of vegetation.
- Each site will have a minimum of one fire box/cache with tools with 3 shovels and 2 Pulaski's (a specialty hand tool used in fighting fires). Additional tools and equipment may be required as determined by the contract administrator in addition to what is carried on vehicles.
- Additional tools, equipment, and requirements identified during inspections will be documented and communicated to crew leaders.

The project would be required to comply with local and state requirements for construction activities in a fire hazard zone. Further, the project would comply with Berkeley Fire Department requirements, such as limiting or ceasing construction work during high-wind weather events. As concluded in the WPP, while construction activities (mechanical use, vehicles, and smoking) could increase risk of ignitions, the reductions in risk provided by replacement of approximately 0.7 acres of fuel (grassland) with less flammable vegetation as part of ongoing implementation of the WVFMP,[5] improved access, water supply, and water delivery systems; and informational signage and awareness regarding red flag days would more than offset whatever increased risk may be associated with construction. Further, a construction fire prevention plan has been developed and included as Appendix C.2, as described above. This plan requires that construction activities be modified to reduce chance of ignition during times of elevated fire danger and cease when a red flag warning is in place. With adherence to local and state requirements for fire safety during construction, Berkeley Fire Department requirements, and implementation of the construction fire prevention plan prepared for the project, project construction would not exacerbate wildfire risks and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

The project site, including the Cal Softball Field, is relatively flat but is located at the base of Strawberry Canyon, which is characterized by natural vegetation and steep slopes. Ignitions in this location could travel uphill, to the north and south, assisted by topography since fires travel faster when advancing uphill. As described in the WPP, Diablo winds are likely to flow down Strawberry Canyon, channeled toward the project site. However, if fire were to occur in the surrounding area, the path of the wildfire would likely to be interrupted by and would move around the non-burnable area of Memorial Stadium to the southwest.

The Cal Softball Field, Memorial Stadium, and other nearby athletic fields provide a large physical obstruction that can act as a fuel break to the potential spread of wildfire downslope to adjacent public and private properties. The concrete walls that form Memorial Stadium are likely to deflect and slow wind. Embers generated from a wildfire would fall on non-combustible areas within the athletic fields and parking areas, thus limiting fire spread, and reducing the energy of the fire in the area downwind of the project site.

Additionally, vegetation within Strawberry Canyon and the surrounding area have been managed by UC Berkeley for decades. The vegetation treatments that have been implemented in recent years include the removal of dead trees

[5] Vegetative fuel treatments are taking place as part of ongoing implementation of the WVFMP. This entails creating and/or maintaining defensible space for 100 feet from the Cal Softball Field and other Athletics facilities in Strawberry Canyon, including the Witter Rugby Field to the west and Strawberry Canyon Recreation Center to the east, and the vegetated slope south of the project site.

and limbs, vegetation removal along roadways, providing defensible space within 100 feet of structures, and vegetation removal along roadways. Vegetative fuel treatments would continue consistent with the WVFMP and per CBP WF-1 and CBP WF-2, described above. This will entrail creating and/or maintaining defensible space for 100 feet from the project boundary, which extends into the other Athletics facilities in Strawberry Canyon, including the Witter Rugby Field to the west and Strawberry Canyon Recreation and Pool to the east, and the vegetated slope south of the project site. Treating the vegetation, as is planned with the ongoing implementation of the WVFMP, would reduce flammable vegetation adjacent to the project site.

Proposed landscaping on the project site, including the types of plants selected and their placement, spacing, and density, are all compatible with fire-resistant landscaping. The project would remove much of the untended and flammable vegetation on the project site, and the remaining vegetation would be treated and maintained to prevent ignition and torching. Newly installed landscaping would be irrigated and tended to be kept relatively free of dead material, and spacing would be maintained. Because of these characteristics, replacement landscaping would not be likely to contribute to wildfire spread.

As described in the WPP, the project would not significantly alter the predicted fire behavior at the site compared to existing conditions. Based on the results of the wildfire behavior analysis presented in the WPP, the project combined with vegetation treatments being implemented under the WVFMP would result in slightly reduced flame lengths and reduce rates of fire spread in the surrounding vegetation. The analysis indicates that under proposed project conditions, little would change with the predicted fuel and fire behavior within the project site, as much of the area is non-burnable, and fire behavior on the valley floor and project site would remain benign. Outside the project site, flames, rates of fire spread and crown fire potential continue to be moderate to hazardous. The project is not expected to exacerbate wildfire risks based on predicted fire behavior. Additionally, the project site is relatively flat, and given the project construction would not involve altering any slopes or creating any new wind patterns, the project would not exacerbate wildfire spread due to slopes.

Proposed structures on the project site would not increase wildfire risk as they would be built to ignition-resistant construction standards in accordance with Chapter 7A of the CBC, and would not be expected to contribute to fire spread. Additionally, the project would include pavement and hardscaping that would present inflammable areas. Additionally, as indicated above, the proposed project includes the implementation of a wildfire protection plan and associated measures including proposed conditions related to water, electrical, and drainage infrastructure; access for emergency responders and evacuation; ignition prevention measures; fire reduction measures; and monitoring measures, which would reduce wildfire risks.

Pollutant concentrations or exposure from a wildfire event near the project site could occur if a wildfire is not suppressed immediately after it starts. As described above, the project site and surrounding areas are designated as Very High FHSZ. The project would not result in a significant increase in use of the project facilities compared to existing uses; however, visitors to the project site could be exposed to pollutant concentrations from a wildfire event. In areas where the public might be experiencing wildfire smoke, the U.S. Environmental Protection Agency recommends that public health and air quality agencies provide advice on strategies to limit exposure including staying indoors, limiting physical activity, reducing indoor air pollution sources, effectively using air conditioners and air filters or cleaners, creating cleaner air shelters, and using respiratory protection appropriately. The most common advisory during a smoke episode is to stay indoors, where people can better control their environment. Whether at home or in a public space, indoor environments that have filtered air and climate control can provide relief from smoke and heat (EPA 2019). Additionally, because the competitive season for the Cal Softball Field ends in May, there is relatively little overlap with times of high fire danger and increased field usage, as described in Impact WF-1.

As such, the project is not expected to exacerbate wildfire risks, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, or other factors and therefore impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts due to exacerbating wildfire risks, and therefore, no mitigation measures are required.

Impact WF-3 Fire Risk Associated with Infrastructure (Significance Standard C). The proposed project would not exacerbate fire risk or cause temporary or ongoing impacts to the environment due to the installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities). *(Less than Significant)*

CONSTRUCTION

As part of the renovation of the Cal Softball Field, the project would include the installation of water infrastructure, electrical infrastructure, and drainage infrastructure, improved sidewalks, a roundabout, an emergency vehicle access point, and a new fire access gate. Construction of utility lines would temporarily increase fire risk due to the use of heavy machinery. As shown in Chapter 3, Project Description, Figure 3-2 and Figure 3-6, the limits of work would occur within areas having existing infrastructure. As described in Impact WF-2, an increased risk of ignitions during project construction could occur, due to the use of heavy machinery and the potential for sparks during welding activities or other hot work. However, best practices identified under Impact WF-2 would be implemented to reduce risk of ignition. Additionally, the project would be required to comply with local and state requirements for construction activities in a fire hazard zone. Further, the project would be subject to additional requirements, as required by the Berkeley Fire Department, such as limiting or ceasing construction work during high-wind weather events. Construction would be limited to a developed area and the project would be required to comply with all fire code requirements associated with trenching, grading, site work, and the use of heavy machinery. Further, a construction fire prevention plan has been developed for project construction and is included as part of the WPP. The construction fire prevention plan requires that construction activities be modified to reduce chance of ignition during times of elevated fire danger and cease when a red flag warning is in place. With compliance of the proposed project with applicable fire code requirements and the additional measures required by the construction fire prevention plan, construction impacts related to fire risk associated with the installation of project infrastructure would be less than significant.

Significance without Mitigation: Less than significant.

OPERATION

The proposed project would be served with electricity, water and wastewater by the University's existing distribution systems. Connections to existing facilities would be installed in compliance with current codes. Electrical infrastructure and the new telecommunication services associated with the project would be installed underground. Subgrade electrical lines would run from the at-grade electrical cabinet at the corner of Centennial Drive and Stadium Rim Way beneath the Witter Lot. Compared to the existing above ground electrical and telecommunication infrastructure, which have the potential to cause ignitions, the installation of the infrastructure underground would reduce potential ignition risk at the site, and therefore reduce the overall fire risk.

Domestic water lines would run underground from the existing main beneath Centennial Drive beneath the proposed parking lot drive aisle and fire water lines would run underground from the existing main beneath the proposed parking lot drive aisle and the proposed turnaround. A fire hydrant is proposed at the hammerhead turnaround, and a second fire department connection is proposed in the northeast corner of the site. The proposed project would also expand the current storm drain system within the parking area including installing a storm drain system within the fire truck turnaround area and the landscape area northeast of the proposed field, and installing a storm drain system within the synthetic turf field and concourse area. Maintenance of these proposed drainage and water infrastructure would not exacerbate wildfire risk and would not result in an impact relating to increased fire risk.

Any temporary or ongoing impacts to the environment associated with installation and maintenance of associated infrastructure have been disclosed and appropriate mitigated throughout this EIR, and the operation and maintenance of proposed project utilities would not result in further impacts related to wildfire. With compliance of applicable fire code requirements and implementation of CBPs, impacts related to fire risk associated with the installation and maintenance of project infrastructure would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to wildfire risks due to the installation and maintenance of infrastructure, and therefore, no mitigation measures are required.

Impact WF-4 Expose People or Structures to Significant Environmental Risks (Significance Standard D). The proposed project would not 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. ***(Less than Significant)***

As described above, the project would include the renovation of an existing softball field, associated infrastructure improvements, and landscaping. As described above, there is an increased potential for ignition during construction activities; however, the overall fire risk would be reduced with compliance of applicable fire code requirements, the implementation of additional measures required by the construction fire prevention plan, the wildfire protection plan, and CBPs. Additionally, as described in Chapter 5, Other CEQA Considerations, the project site is not located within a landslide hazard zone and the overall likelihood of landsliding to occur below the project site affecting planned structures is very low to negligible. Additionally, the project site is not located within a flood zone and impacts of the proposed project related to flooding were determined to be less than significant.

Vegetation plays a vital role in maintaining existing drainage patterns and the stability of soils. Plant roots stabilize the soil, and leaves, stems, and branches intercept and slow water, allowing it to more effectively percolate into the soil. Removal of surface vegetation reduces the ability of the soil surface to absorb rainwater, and can allow for increased runoff that may include large amounts of debris and mud flows. If hydrophobic conditions exist post-fire, the rate of surface water runoff is increased since water percolation into the soil is reduced. The potential for surface runoff and debris flows therefore increases significantly for areas recently burned by wildfires (Moench and Fusaro 2012). Based on fire history data, the most recent fire to have burned in the project vicinity occurred in 2017. Since that time, vegetation has regrown to restabilize soils.

Given that fire risk would be reduced with implementation of CBPs and applicable codes, and that the project site has low risk of landslide and flood hazards, impacts related to exposure of people or structures to downslope or

downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to risks from downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and therefore, no mitigation measures are required.

Impact WF-5 Expose People or Structures to Significant Risks from Wildfire (Significance Standard E). The proposed project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires *(Less than Significant)*

CONSTRUCTION

During project construction, people on the project site would be limited to construction workers, and softball game attendees and participants would not be present at the site during construction. As described under Impact WF-2, project construction would introduce new potential sources of ignition to the project site, with the use of heavy machinery and the potential for sparks during welding activities or other hot work. If ignition were to occur, risks related to the exposure of people or structures to wildfire would not only occur for people and structures onsite, but people and structures in the surrounding area. A construction fire prevention plan has been developed for the proposed project and included as Appendix C.2. As described in Impact WF-2, this plan requires that construction activities be modified to reduce chance of ignition during times of elevated fire danger and cease when a red flag warning is in place. Further, the plan identifies best management practices that would be implemented to avoid accidental ignitions such as site assessment by the contract administrator, hazard reduction, regular watering, designated areas for smoking, welding, and fueling of equipment, parking limitations to avoid vegetation, and specifications about tools and equipment available to crew leaders. These practices would not only reduce the potential for ignition to occur onsite, but would reduce the likelihood of the fire to spread if ignition were to occur. With adherence to local and state requirements for fire safety during construction and implementation of the construction fire prevention plan prepared for the project, direct and indirect impacts from project construction would not expose people to a significant risk of loss, injury or death involving wildland fires and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

OPERATION

As described under Impact WF-2, the project would include the renovation of an existing softball field, associated improvements, and implementation of a wildfire protection plan within a WUI location and Very High FHSZ in an LRA. With the renovated Cal Softball Field, it is expected that the maximum spectator crowd would increase to approximately 1,511 persons and the number of game participants would remain the same, therefore totaling 1,603 persons, as compared to 1,432 persons onsite under existing conditions. The factors that influence the wildfire environment at the project site include Diablo winds (prevailing winds), a dry climate, steep slopes, and vegetation (fuel), as well as the potential for natural or human caused ignitions. Further, the proposed project includes certain project specific wildfire CBPs (CBPs PS-2 and WF-3) and other campus wide CBPs being

implemented on an ongoing basis also reduce fire risks (CBPs WF-1, WF-2, and WF-4), as described in Impacts WF-1 and WF-2.

As described above, the topography of the Cal Softball Field is relatively flat; however, its location at the base of Strawberry Canyon, which is characterized by natural vegetation and steep slopes, presents the greatest wildfire risk in proximity to the project site. Therefore, there is the potential for fire to travel uphill should a fire ignite on the project site based on the topography. The proposed project would not change this topography and would not increase the risk of fire to travel uphill. Additionally, Diablo winds are likely to flow down Strawberry Canyon, channeled toward the project site, which could funnel a wildfire from offsite toward the project site. However, the Cal Softball Field, Memorial Stadium, and other nearby athletic fields provide a large physical obstruction that can act as a fuel break to the potential spread of wildfire downslope to adjacent public and private properties. Potential embers generated from a wildfire would fall on non-combustible areas within the athletic fields and parking areas, thus limiting fire spread, and reducing the energy of the fire in the area downwind of the project site.

Additionally, the WVFMP vegetation management within Strawberry Canyon and the surrounding area described in Impact WF-2, would further reduce fuel load adjacent the project site and surrounding area. Specifics of the vegetation treatments performed are detailed under Impact WF-2. Treating the vegetation, as is planned with the ongoing implementation of the WVFMP, would reduce flammable vegetation adjacent to the project site and the surrounding area. Further, proposed landscaping on the project site, including the types of plants selected and their placement, spacing, and density, are all compatible with fire-resistant landscaping. Newly installed landscaping would be irrigated and tended to be kept relatively free of dead material, and spacing would be maintained. Because of these characteristics, replacement landscaping would not be likely to contribute to wildfire spread.

As described above, based on the results of the wildfire behavior analysis presented in the WPP, the project combined with vegetation treatments being implemented under the WVFMP would result in slightly reduced flame lengths and reduce rates of fire spread in the surrounding vegetation and the project is not expected to exacerbate wildfire risks based on predicted fire behavior. Additionally, the project site is relatively flat, and given that project construction would not involve altering any slopes or creating any new wind patterns, the project would not exacerbate wildfire spread due to slopes.

Proposed structures on the project site would not increase wildfire risk as they would be built to ignition-resistant construction standards in accordance with Chapter 7A of the CBC, and would not be expected to contribute to fire spread. Additionally, as indicated above, the proposed project includes the implementation of a wildfire protection plan and associated measures including proposed conditions related to water, electrical, and drainage infrastructure; access for emergency responders and evacuation; ignition prevention measures; fire reduction measures; and monitoring measures, which would reduce wildfire risks.

The project would not result in a significant increase in use of the project facilities compared to existing uses. Additionally, because the competitive season for the Cal Softball Field ends in May, there is relatively little overlap with times of high fire danger and increased field usage, as described in Impact WF-1. Furthermore, as also described in Impact WF-1, the project would provide sufficient emergency access to the project site; would not impede emergency access to surrounding areas; would not result in substantial changes to circulation patterns or emergency access routes and would not cut off, block, or otherwise modify existing evacuation routes; would not induce substantial population growth that could impede emergency response or evacuation procedures; and would not interfere with UC Berkeley's and other local agencies' emergency response and evacuation plans. Therefore, the project is not expected to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires and therefore impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

MITIGATION MEASURES

As described above, the proposed project would not result in significant impacts related to exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires and therefore, no mitigation measures are required.

Impact WF-6 Cumulative Wildfire Impacts (Significance Standard F). The proposed project would not result in a cumulatively considerable impact regarding wildfire. *(Less than Significant)*

This section provides an evaluation of cumulative wildfire impacts associated with the proposed project and past, present, and reasonably foreseeable future projects, as identified in Table 4.1-1 in Section 4.1, Introduction to Analysis, and as relevant to this topic.

CONSTRUCTION

The geographic area potentially affected by construction-related impacts of the proposed project would be limited to the area near the existing Cal Softball Field. There are no cumulative projects in Table 4.1-1 in the immediate vicinity of the project site; however, there are projects occurring within the Hills Campus East area that may impact evacuation and wildfire risk during construction.

The Centennial Bridge crossing project would potentially require the closure of a travel lane from Centennial Drive to Stadium Rim Way. The project, which is currently under construction, is expected to be completed in the Winter of 2024 and would overlap with the construction of the proposed project. Several other LBNL projects occurring within the Hills Campus East area may also potentially bring additional construction traffic onto Centennial Drive and Stadium Rim Way; however, implementation of CBP TRAN-5, CBP TRAN-6, and CBP TRAN-7 would require the preparation of construction traffic management plans, as described in Section 4.6, Transportation. Per these CBPs, the construction traffic management plans for these projects would account for any potential overlap and associated conflicts with circulation patterns on surrounding roadways. Therefore, the project would not contribute to potentially significant cumulative construction-related evacuation or emergency response impacts that may arise from implementation of the cumulative projects. As such, the cumulative construction evacuation or emergency response impact of the project would be *less than significant*.

Similar to the proposed project, the Centennial Bridge crossing project has the potential to increase risk of ignitions during project construction activities in the Hills Campus East area. Both projects would be required to implement UC Berkeley CBPs and fire code requirements, as applicable. Additionally, the project would avoid construction activities during extreme fire weather, per the construction fire prevention plan for the proposed project (see Impact WF-2) and therefore would not cumulatively contribute to wildfire risk related to construction. As such, the cumulative wildfire risks associated with construction impact of the project would be *less than significant*.

OPERATIONS

The fire evacuation analysis (see Appendix H) conducted for the proposed project, as described in Impact WF-1, also assessed the time required for emergency evacuation under several cumulative scenarios. As indicated in Section 4.7.3.2, Analytical Methods, the cumulative scenarios assumed a complete implementation of the UC Berkeley Long Range Development Plan (LRDP), a 10% increase in evacuating vehicles for non-residential land uses located outside of the LRDP area, and an increase of 5% in the number of vehicles evacuating from residential areas. As shown in Table

4.7-2, under the cumulative scenarios for average events, the largest changes in evacuation times occurred in areas with parking structures, which take longer to evacuate, and ranged between approximately 6 to 11 minutes. The largest changes in evacuation times in areas without parking structures ranged from approximately 2 to 3 minutes. While the project and cumulative development would potentially increase the number of people and vehicles evacuating from the project site and surrounding area, the increase in evacuation times would not be substantial for similar reasons, as described for the proposed project in Impact WF-1. Namely, the increased evacuation times presented above are based on mass evacuation scenarios, but such scenarios are avoided with the technology in use today, the proposed project elements (e.g., wildfire protection plan, roundabout, emergency vehicle access, reduced parking, TDM plan) cannot be quantitatively accounted for in the evacuation analysis, and most of the competitive softball season transpires outside of fire season. Additionally, evacuation of the project site and surrounding projects on campus would follow the guidelines of the UCB Emergency Operation Plan. Therefore, cumulative impacts related to evacuation during operation of the project would be *less than significant*.

Only two projects identified within Table 4.1-1 would be located in the vicinity of the project site that would have potential to influence fire risk in the area of the project site: the WVFMP and the Centennial Bridge crossing project (under construction). The WVFMP includes the vegetation management within the UC Berkeley Hill Campus, which includes the hillslopes north and south of the project site (see Section 4.7.2.2, for additional details about the WVFMP). Similar to the proposed project, the WVFMP and Centennial bridge crossing project would implement UC's CBPs including the maintenance of 100-foot firebreaks (CBP-WF1), and vegetation management (CBP-WF-2). Methods of vegetation management include mowing grasses; pruning lower limbs of trees; and removing understory shrubs. While maintenance activities associated with the vegetation treatments of the WVFMP could result in a temporary increase in fire risk, as the use of vehicles and hand tools during vegetation treatment activities could result in an accidental ignition, vegetation management activities would not occur during extreme fire danger conditions, as outlined in the BMPs in the WVFMP. Further, with the inclusion of vegetation management on the project site, as well as vegetation management in the surrounding area with ongoing implementation of the WVFMP, overall fire risk would be reduced at the project site and surrounding area. Given that these projects would not result in the increase of vegetative fuels and would result in the overall reduction of fuels in the area, and that maintenance activities that could increase fire risk would be avoided during extreme fire risk days, impacts related to cumulative wildfire risk associated with the installation and maintenance of project infrastructure would be *less than significant*.

The WVFMP vegetation management activities could result in soil erosion, downslope or downstream flooding or landslides, drainage changes and slope destabilization in the project area. Impacts associated with the vegetation management activities from soil erosion, downslope or downstream flooding or landslides, drainage changes and slope destabilization on and surrounding the project site were addressed in the WVFMP EIR. Further, impacts associated with vegetation management activities would be minimized through the implementation of CBPs. As described above, impacts related to exposure of people or structures to downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes would be less than significant. Given that the project does not propose any additional vegetation management that would result in additional potential soil erosion or slope destabilization, cumulative impacts would be *less than significant*.

5. Other CEQA Considerations

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. The environmental impact report (EIR) must discuss (1) significant environmental effects of the proposed project and mitigation measures proposed to minimize the significant effects, (2) significant environmental effects that cannot be avoided if the proposed project is implemented, (3) significant irreversible environmental changes that would result from implementation of the proposed project, (4) growth-inducing impacts of the proposed project, and (5) alternatives to the proposed project.

The topics covered in this chapter include impacts found to be significant and unavoidable, significant irreversible changes to the environment, and growth-inducing impacts that would occur if the UC Berkeley Cal Softball Field Renovation Project (project or proposed project) is implemented. An evaluation of the significant environmental effects of the proposed project, applicable mitigation measures, the level of impact significance before and after mitigation, and evaluation of cumulative impacts, is provided in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. Chapter 6, Alternatives, addresses alternatives to the proposed project.

5.1 IMPACTS FOUND NOT TO BE SIGNIFICANT

An Initial Study was prepared and released with the Notice of Preparation (NOP) for the proposed project (see Appendix A-1, Notice of Preparation and Initial Study). The initial study indicates that the proposed project would result in no impacts or less-than-significant impacts in the following environmental resource topics: agriculture and forestry resources, air quality, biological resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, mineral resources, population and housing, public services, recreation, utilities and service systems, and wildfire. Given these conclusions, these topics are not evaluated in detail in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. This section summarizes the results of the Initial Study and further elaborates on these results where needed to respond to scoping comments.

5.1.1 AGRICULTURE AND FORESTRY RESOURCES

As discussed in Section 2.2, Agriculture and Forestry Resources, of the Initial Study, the project site is not located in an area designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the California Department of Conservation Farmland Mapping and Monitoring Program. Additionally, no land zoned for agricultural use or enrolled in a Williamson Act contract is located on or near the project site. Therefore, the proposed project would not convert farmland to a non-agricultural use, would not impact on agricultural zoning or Williamson Act contracts and there would be *no impact*.

While the slope to the south of the project site is wooded, this land is not designated for forest land uses. As there is no forest land or timberland located on or near the project site, the proposed project would not conflict with land zoned as forest land or timberland or result in the conversion of forest land to non-forest use, and *no impact* would occur.

5.1.2 AIR QUALITY

Section 2.3, Air Quality, of the Initial Study determined that the proposed project would not conflict with or obstruct the Bay Area Air Quality Management District (BAAQMD) adopted *Spare the Air: Cool the Climate Final 2017 Clean*

Air Plan (2017 Clean Air Plan), as the project would support the goals of the plan, would not conflict with applicable control measures from the plan, and would not hinder implementation of any control measures from the plan. Therefore, the impact of the proposed project with respect to conflicting with or obstructing implementation of an applicable air quality plan would be *less than significant*.

The increase in construction and operational emissions of reactive organic gases (ROG), oxides of nitrogen (NO_x), particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM_{10}), particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less ($PM_{2.5}$) resulting from development of the proposed project would be minimal and would not exceed the daily or annual BAAQMD significance thresholds, as demonstrated by Initial Study Table 2.3-2, Table 2.3-3, and Table 2.3-4. Therefore, project impacts associated with construction and operational emissions of criteria air pollutants would be *less than significant*.

Construction emissions of diesel particulate matter (DPM), which is considered a toxic air contaminant (TAC), would not exceed cancer risks and hazard indices at proximate sensitive receptors, as demonstrated by Initial Study Table 2.3-5 and Table 2.3-6. Regarding operations, since the proposed project would consist of softball field improvements, the project would not result in new sources of TACs that could expose sensitive receptors to substantial concentrations. Therefore, construction and operational health risk impacts with the proposed project would be *less than significant*.

5.1.3 ENERGY

Section 2.6, Energy, of the Initial Study determined that the proposed project would not result in potentially significant environmental impacts due to energy consumption or potential conflict with state or local plans related to energy efficiency. Table 2.6-1 provides the proposed project's estimated construction petroleum demand. Tables 2.6-2 and 2.6-3 provide the proposed project's annual operational electricity demand and increase in annual operation petroleum demand, respectively. As described in the Initial Study, considering these estimates, the proposed project would not be unusual as compared to overall local and regional demand for energy resources; the project would not involve characteristics that require equipment or vehicles that would be less energy efficient than at comparable sites in the region or state, and would include a game-day transportation demand management (TDM) plan encouraging transit and shuttle use. Therefore, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operations, and impacts would be *less than significant*.

As discussed in the Initial Study, based upon its constitutional autonomy, UC Berkeley is not subject to local regulations related to energy usage. However, it is subject to State regulations and plans; for instance, the project would be subject to Title 24 of the California Code of Regulations that contain energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. The proposed project would also be required to meet the green facility standards in the UC Sustainable Practices Policy, the UC Berkeley Energy Use Policy, and the UC Berkeley Campus Design Standards, including being constructed to LEED Silver Certification at a minimum. For these reasons, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the project would be *less than significant*.

5.1.4 GEOLOGY AND SOILS

Section 2.7, Geology and Soils, of the Initial Study determined that the proposed project would not result in potentially significant environmental impacts related to geology and soils. Specifically, the Initial Study concluded

less than significant project impacts regarding potential earthquake rupture, seismic shaking, liquefaction, landslides, soil erosion, loss of topsoil, expansive soils, or use of septic or alternative wastewater disposal systems. These impacts are discussed below.

The project site is not within an Alquist-Priolo Earthquake Fault Zone. The active trace of the Hayward fault is located about 800 feet west-southwest of the project site. The geotechnical report anticipates that a large earthquake occurring on the nearby Hayward Fault may result in co-seismic deformations and/or displacement within the project site. Nonetheless, the structures proposed as part of the project would comply with the University Policy on Seismic Safety and would incorporate geotechnical recommendations that reduce seismic hazards, including implementing seismic design parameters per the California Building Code, as reported on in the project geotechnical report. Furthermore, they would incorporate the applicable continuing best practices (CBPs) listed in Section 2.7.2 of the Initial Study and in Appendix B. As noted in the geotechnical investigation for the project, the Strawberry Canyon Fault, located within the project site, is considered inactive. Therefore, impacts related to fault rupture would be *less than significant*.

Based on the general nature of soils observed in the test borings conducted for the geotechnical investigation at the project site, soils at the site are generally too dense, too clayey, and/or too plastic to liquefy. Further, groundwater was not observed in any of the recent or historic test borings, indicating that the conditions to trigger liquefaction are likely absent. Given the general conditions observed at the site, the possibility of widespread, large-scale liquefaction settlement is very low. In addition to adhering to all recommendations of the geotechnical investigation prepared for the project including but not limited to a deep foundation, the project would comply with the California Building Code, University of California Seismic Safety Policy, including review by the Seismic Review Committee, and University CBPs, wherever relevant. Therefore, impacts related to liquefaction would be *less than significant*.

The project site is not located within a landslide hazard zone. However, an earthquake-induced landslide zone lies beyond the project site's southern boundary. Previous geologic mapping by Herzog Associates in 1992 identified the presence of a probable landslide just beyond the south boundary of the project site. At the time of the 1992 study, the landslide was assumed to be dormant; however, it is conceivable that an earthquake could trigger this slide to move again, or could trigger landslides or slumps elsewhere in the hills to the north and south of the project site. However, as determined in the geotechnical investigation, the overall likelihood of landsliding to occur below the project site affecting planned structures is very low to negligible. Therefore, impacts related to landslides would be *less than significant*.

In response to the NOP, the Panoramic Hill Association submitted a comment letter in November 2022 during the NOP comment period. The letter asked about the likelihood of a landslide at the intersection of Centennial Drive and Stadium Rim Way near California Memorial Stadium on the west-facing and south-facing hillside above this intersection, and relatedly what the ancillary impacts on evacuation would be in the event of a landslide at this intersection.

The 2021 UC Berkeley Long Range Development Plan EIR (UC Berkeley 2021b and 2021c) evaluated the potential for landslides across the campus, including in the Hill Campus West (where the project site is located) and in the adjacent Hill Campus East. The LRDP EIR indicates that small, localized slides could occur in the Strawberry Creek bank areas (in portions of the creek that are not culverted to the east of the project site) or the eastern edges of the Hill Campus West and the Clark Kerr Campus. The LRDP EIR indicates that the major area that may be subject to landslides is the Hill Campus East. LRDP EIR Figure 5.6-5 (Landslide Map) map shows a number of landslides in the Hill Campus East area, although nearly all are considered dormant. It should be noted that these landslides may fail in the future during large earthquakes, and LRDP EIR Figure 5.6-4 (Geologic Hazards), illustrates areas that may be susceptible to earthquake-induced landslides. The LRDP EIR indicates that this is a significant geologic hazard in the LRDP EIR Study Area, but it is only a concern in the Hill Campus East. Since no potential future building

areas are in this landslide-prone area, the LRDP EIR indicates that LRDP development would not exacerbate any existing landslide hazards or create new landslides.

The project site for the Cal Softball Field is not located in an area that is subject landslide hazards and the overall likelihood of landsliding to occur affecting planned structures is very low to negligible, as described above and in the Initial Study. The intersection of Stadium Rim Way and Centennial Drive, however, is located below an area identified in LRDP EIR Figure 5.6-4 as an earthquake fault zone that overlaps with an earthquake-induced landslide zone. The proposed project would not exacerbate the potential for an earthquake-induced landslide in this area above the intersection of Stadium Rim Way and Centennial Drive given that it would not result in ground disturbance or development on the slopes above this intersection. As explained above, the impacts of the proposed project related to landslides would be *less than significant*.

With regards to soil erosion or the loss of topsoil, the Initial Study indicates that because the proposed project footprint is greater than 1 acre, it would be subject to the National Pollutant Discharge Elimination System (NPDES) permit requirements for construction site stormwater discharges. A Storm Water Pollution Prevention Plan (SWPPP) is required to be prepared and implemented under these requirements, which includes appropriate erosion-control and water-quality-control measures during site preparation, grading, construction, and post-construction. Implementation of the SWPPP for the proposed project would minimize short-term erosion impacts. Long-term impacts of the proposed project would not result in substantial erosion, as the soils would be covered by buildings, pavement, vegetation, and landscaping. Therefore, proposed project impacts related to erosion and loss of topsoil would be *less than significant*.

Adhering to all recommendations of the geotechnical investigation prepared for the project, including but not limited to the proposed deep foundation for the project, would address potential subsidence. The geotechnical investigation also states that the soil condition on site is generally non-expansive. In addition to adhering to all recommendations of the geotechnical investigation prepared for the project, the project would comply with the California Building Code, University of California Seismic Safety Policy, where relevant, which would further reduce potential risks related to soil instability. Therefore, associated impacts related to unstable or expansive soils would be *less than significant*.

The proposed project would connect to existing sewer facilities and would not include septic tanks or alternative wastewater disposal systems. Therefore, *no impact* related to septic tanks or alternative wastewater disposal systems would occur.

5.1.5 GREENHOUSE GAS EMISSIONS

Section 2.8, Greenhouse Gas (GHG) Emissions, of the Initial Study determined that the project would not generate GHG emissions that may have a significant impact on the environment. The analysis within this section also determined that the project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The estimated project-generated GHG emissions from construction activities are provided in Initial Study Table 2.8-1. The estimated total operational project-generated GHG emissions from area sources, energy usage, motor vehicles, solid waste generation, and water usage are also provided in Initial Study Table 2.8-2. Operational emissions plus amortized construction emissions are also shown in Initial Study Table 2.8-2. As noted in the Initial Study analysis, pursuant to the 2020 UC Sustainable Practices Policy, UC Berkeley is required to obtain 100% clean electricity by 2025. The Initial Study also indicated that UC Berkeley will implement the 2020 UC Sustainable Practices Policy to meet the 2020 policy requirement of carbon neutrality for Scope 1 and 2 emissions by 2025

and carbon neutrality for Scope 3 emissions by 2045, which would be tracked in the context of the UC Berkeley campus wide annual GHG inventory. The Initial Study further indicated that the proposed project would be subject to these sustainability policies, including the requirement that electricity be procured from 100 percent renewable sources, that other UC Berkeley sustainability initiatives be implemented, and that purchase of carbon offsets be implemented, if needed to reach the GHG emissions reduction targets outlined in the policy and above. The Initial Study itemizes the options to reduce GHG emissions to achieve net zero GHG emissions, including the purchase of offsets and concludes that GHG impacts of the proposed project would be *less than significant* with the implementation of the UC 2020 Sustainable Practices Policy.

Following completion of the Initial Study in November 2022, UC Berkeley updated its Sustainable Practices Policy. The 2023 UC Sustainable Practices Policy (UCOP 2023) revised the Clean Energy section to indicate that the UC Clean Power Program is already achieving the Clean Electricity goals and to update the goals and timelines around centrally purchased biomethane to reflect current plans. The 2023 UC Sustainable Practices Policy also replaced the former goal of achieving carbon neutrality for scopes 1 and 2 by 2025 with a goal that is aligned with State goals in the 2022 California Air Resources Board (CARB) Scoping Plan (CARB 2022) of achieving carbon neutrality for all scopes of emissions by 2045. The 2023 UC Sustainable Practices Policy reflects the University's desire to prioritize direct, total emissions reductions to support achievement of the State's updated reduction targets established in AB 1279, signed into law in September 2022, that requires that statewide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels. The 2023 UC Sustainable Practices Policy sets a new long-term reduction target of 90% below 2019 levels by 2045 for all scopes, which is more aggressive than the reduction targets established in AB 1279.[1] After 2045, the 2023 UC Sustainable Practices Policy requires that any residual emissions beyond the 90% reduction will be negated by carbon removal to achieve complete carbon neutrality in alignment with the State's goals in the 2022 CARB Scoping Plan. As part of the update to its Sustainable Practices Policy, UC Berkeley is required to prepare a decarbonization study by January 1, 2025, that will be used to establish new interim reduction targets for 2030, 2035, and 2040. The decarbonization study will specifically address replacing the natural gas-powered cogeneration plant with a new, clean and green resilient energy system.[2] New interim targets have not been set and these planning efforts are not yet complete.

Under its 2020 and 2023 UC Sustainable Practices Policies, UC Berkeley has the option to purchase carbon offsets to ensure the campus achieves carbon neutrality by 2045, provided the offsets meet the policy's standards and evaluation guidance to ensure they represent real, additional, quantifiable, durable, and enforceable emissions reduction or carbon removal, and have undergone third-party verification, as described in the Initial Study. Implementation of the UC Sustainable Practices Policy at the campus level, including the option to purchase carbon offsets, would ensure a net zero increase in GHG emissions with the proposed project. For these reasons, GHG emission impacts of the proposed project would continue to be *less than significant*.

5.1.6 HAZARDS AND HAZARDOUS MATERIALS

Section 2.9, Hazards and Hazardous Materials, of the Initial Study determined that the project would not create a significant hazard to the public or environment through the routine transport, use, disposal, or potential release of hazardous materials. As discussed in the Initial Study, the proposed project would result in a slight increase in the

[1] The 2023 UC Sustainability Practices Policy reduction target is more aggressive than the reduction target established in AB 1279, as UC's target aims to achieve a 90% reduction relative to 2019 GHG emission levels, verses an 85% reduction relative to 1990 GHG emission levels established by AB 1279. Additionally, the greater percentage reduction in the 2023 policy is relative to 2019 GHG emissions levels that are higher at UC Berkeley, compared to 1990 emission levels (UCOP 2023), resulting in a greater total GHG emission reduction compared to a target based on 1990 levels.

[2] UC Berkeley received a $249 million capital investment from the State of California for this new energy system and is in the technical planning stages for this project (UCOP 2023).

routine use of hazardous materials, particularly during construction. These activities have the potential to create incidental spills; however, they would likely be minor and would be minimized through implementation of standard best management practices (BMPs) included in a NPDES-mandated SWPPP during construction. Some hazardous materials use would continue to occur in association with proposed project operations, including fertilizers, cleaning supplies, etc. However, the use of hazardous materials would be required to meet all applicable regulations related to the transport, use, and storage of such materials.

Prior to demolition of the existing softball facility, the campus would test and remove potential hazardous materials intrinsic to the softball field structure, including asbestos and, where required, lead. Removal of hazardous materials would be completed by a licensed hazardous materials contractor, under the oversight of the UC Berkeley Office of Environment, Health and Safety. Furthermore, project construction would be required to comply with applicable state regulations regarding lead-based paint work practices, including testing and abatement. The removal of asbestos containing materials would be subject to the Asbestos Demolition and Renovation Program administered by the BAAQMD, which protects the public from uncontrolled emissions of asbestos through enforcement of the Federal Asbestos Standard. Additionally, as part of the proposed project and to minimize the potential for release of hazardous materials, UC Berkeley would implement CBPs related to the management of hazardous materials. For these reasons, proposed project impacts associated with routine transport, use, disposal, and removal of hazardous materials would be *less than significant*.

Also, as discussed in Section 2.9 of the Initial Study, no existing or proposed schools are present within one-quarter mile of the project site; the project site is not on the list of hazardous material sites compiled pursuant to Government Code Section 65962.5; and the project site is not located in close proximity to an airport or within an airport land use plan. For these reasons, the project would not emit hazardous emissions or handle hazardous materials within one-quarter mile of a school, would not be located on a site that would create a significant hazard to the public or the environment, and would not result in a safety hazard or excessive noise impacts as related to an airport land use; these impacts would be *less than significant*.

Initial Study Section 2.9 includes a question related to adopted emergency response or emergency evacuation plans (question f) and a question related to wildfire risks (question g). As indicated in the Initial Study, these questions are addressed in the Wildfire section of this EIR (Section 4.7).

5.1.7 HYDROLOGY AND WATER QUALITY

Section 2.10, Hydrology and Water Quality, of the Initial Study determined that impacts related to hydrology and water quality would be less than significant. As noted in the Initial Study, construction of the proposed project would result in short-term soil-disturbing activities that could lead to increased erosion and sedimentation. However, the project would comply with the NPDES Construction General Permit, including the development and implementation of a SWPPP, which describes BMPs that UC Berkeley would use to protect stormwater runoff. The SWPPP would include appropriate erosion-control and water-quality-control measures during site preparation, grading, construction, and post-construction. The project would also comply with the Phase II Small MS4 Permit and incorporate low-impact development (LID) treatment controls and BMPs to address post-construction stormwater runoff to meet waste discharge requirements, such as biotreatment facilities and other hydromodification features. For these reasons, the proposed project would minimize erosion and related impacts on water quality, such that construction and operational impacts would be *less than significant*.

The East Bay Municipal Utility District (EBMUD) supplies water to the project site and would continue to serve the project site. EBMUD's Urban Water Management Plan anticipates future growth in the region that includes the proposed project, as allowed under existing land use and zoning designations. No incremental increase in demand

on groundwater supplies would occur as a result of the proposed project, as EBMUD does not use groundwater as a source of water. As described in the Initial Study, the proposed project would not interfere substantially with groundwater recharge as it would result in a net increase in the amount of pervious surface by approximately 8,200 square feet compared to existing conditions, due to the increased size of the field. Because the proposed project would be served by a water utility with sufficient supply that does not extract groundwater, and would not interfere substantially with groundwater recharge, the impact of the proposed project related to groundwater would be *less than significant*.

Construction activities would include grading, excavation, and other ground-disturbing activities, which could temporarily alter surface drainage patterns and increase the potential for flooding, erosion, or siltation. Once operational, the proposed project would increase the pervious surface area on the project site by approximately 8,200 square feet. New drainage infrastructure would be included in the proposed project to accommodate stormwater flows and connect the project to existing storm drain infrastructure. In combination with on-site retention and stormwater collection, or a localized stormwater management system, implementation of the project would decrease the rate and volume of surface runoff. An alternative compliance method may involve a stormwater treatment at a campuswide level. Stormwater hardscape runoff would be treated on site prior to release into the existing stormwater system, which would continue to discharge into Strawberry Creek. The proposed project and project site would comply with UC Berkeley's policy for no net new stormwater runoff.

As discussed above, the proposed project would also be required to comply with the NPDES Construction General Permit and Phase II MS4 Permit, which would require implementation of BMPs, erosion control measures, and LID treatment controls, thereby reducing the effects of project construction and operation on erosion and drainage patterns. Additionally, the proposed project would not modify or otherwise affect subsurface culverts under or adjacent to the project site, including the 48-inch Strawberry Creek storm drain located in Centennial Drive approximately 15 feet below existing grade and the 60-inch storm drain that runs beneath the existing Strawberry Canyon Recreation Center, Cal Softball Field, Witter Rugby Field, and California Memorial Stadium and is approximately 35 feet below existing grade. The proposed project would implement all geotechnical and structural engineering recommendations related to avoidance of such subsurface culverts. For these reasons, the proposed project impact related to alteration of drainage patterns would be *less than significant*. Compliance with NPDES regulations would also ensure that the proposed project impact related to exceeding capacity of stormwater drainage systems and contributing additional sources of polluted runoff would be *less than significant*.

The project site is not located within a flood zone. The project site is located within an area of minimal flood hazard (Zone X). Therefore, the proposed project impact related to flooding would be less than significant. The project site is not within a flood zone or the inundation zone of any dams or tsunamis and there are no large bodies of water in the vicinity that could pose a seiche hazard. Therefore, the proposed project would also result in *no impacts* related to flood hazards, tsunamis, or seiches.

The Sustainable Groundwater Management Act of 2014 requires local public agencies and Groundwater Sustainability Agencies (GSAs) in high- and medium-priority basins to develop and implement Groundwater Sustainability Plans (GSPs). The East Bay Plain Subbasin (EBP Subbasin) GSP was prepared and released by EBMUD and the City of Hayward in September 2021 for review and finalized and released in January of 2022. As concluded in the Initial Study, the proposed project would not conflict with or obstruct implementation of the EBP Subbasin GSP, as the proposed project would be served by EBMUD, one of the GSAs overseeing this GSP, and as conditions in the EBP Subbasin are sustainable. Therefore, the proposed project impact related to conflicts with, or obstruction of water quality control plans or groundwater management plans would be *less than significant*.

5.1.8 LAND USE AND PLANNING

Section 2.11, Land Use and Planning, of the Initial Study determined that the project would not physically divide an established community or cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation. As described in the Initial Study, changes resulting from the project would only occur in the existing softball field, parking lot, and areas immediately surrounding the field; the project would not introduce a new linear element. Therefore, the project would create *no impacts* with respect to physically dividing an established community.

The project would be constructed entirely on UC Berkeley property and therefore would be under the land use jurisdiction of the University of California and the Regents. The university is constitutionally exempt from local land use regulations, such as city and county general plans, land use policies, and zoning regulations when using its property in furtherance of its educational mission. The project would not alter any existing land use associated with the project site and would be consistent with the Hill Campus West land use zone designation as identified in the UC Berkeley Long Range Development Plan (2021 LRDP). The existing and proposed land use would fall under the athletics and recreation land use definition within the LRDP: "Uses that support athletics and recreation programs and activities, such as indoor and outdoor general recreation facilities, and athletics practice and competition venues." The athletics and recreation land use type is specifically identified as a "priority use" in the 2021 LRDP Hill Campus West land use zone under the Land Use Element (see LRDP Table 3.2) (UC Berkeley 2021a). For these reasons, proposed project impacts would be less than significant related to conflicts with adopted plans or policies from the implementation of the project.

5.1.9 MINERAL RESOURCES

Section 2.12, Mineral Resources, of the Initial Study determined that the project would result in no impacts regarding mineral resources. The campus, which includes the project site, does not contain mineral resources where there is adequate information indicating significant mineral deposits or the high likelihood of significant mineral deposits. Therefore, the proposed project would have *no impact* on known or locally important mineral resources.

5.1.10 POPULATION AND HOUSING

Section 2.14, Population and Housing, of the Initial Study determined that the project would not have a significant impact related to the inducement of unplanned population growth or displacement of people or housing. As noted in the Initial Study, the proposed project would serve the existing level of UC Berkeley student enrollment and would not result in the hiring of new faculty or staff. The project does not include any residential uses or improvements to off-site infrastructure such as a roadways or utilities that could indirectly induce population growth. The project site does not contain existing housing units. For these reasons, impacts related to population and housing would be *less than significant*.

5.1.11 PUBLIC SERVICES

Section 2.15, Public Services, of the Initial Study determined that impacts related to public services would be less than significant; the project would not result in substantial adverse physical impacts associated with the provision of new or physical altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objective for public services. The proposed project would not substantially increase the overall use of the project site for recreational uses. Given that the proposed project would not result in population growth and would result in similar operations as under existing conditions, it would not result in increased demand for fire or police protection

services on the campus and would not result in the need for new or physically altered fire or police protection facilities; therefore, the impact related to fire and police protection facilities would be *less than significant*.

The proposed project includes the preparation and implementation of a wildfire protection plan (see Appendix C) Additionally, as described in Section 4.7, Wildfire, all wildfire-related impacts of the proposed project were determined to be less than significant. Therefore, the conclusions of the wildfire-related analyses of the proposed project contained in this EIR do not change the impact conclusions above about fire protection facilities.

Because the proposed project would serve the existing UC Berkeley enrollment levels and would not result in the generation of new students or the hiring of new employees, the project would not result in the need for new or physically altered schools, parks, or other public facilities and *no impact* would occur.

5.1.12 RECREATION

Section 2.16, Recreation, of the Initial Study determined that impacts related to the deterioration of recreational facilities would be less than significant. The proposed project does not include residential land uses and would not increase population and, hence, demand for parks and recreational facilities would not increase. As the project would involve renovation of the existing Cal Softball Field, which currently is used for softball practice, softball games, and other sports activities, it would not create increased demand for recreational facilities outside the project area. UC Berkeley IA and Rec Sports would coordinate scheduling to ensure access to the softball field and facilities is available to the students in an efficient manner. Therefore, implementation of the proposed project would not result in significant use of off-campus parks or recreational facilities or generate the need for new or expanded recreational facilities and the impact would be *less than significant*.

5.1.13 UTILITIES AND SERVICE SYSTEMS

Section 2.19, Utilities and Service Systems, of the Initial Study determined that project impacts related to new utility connections, water supply, wastewater, and solid waste generation would be less than significant. The project would be connected through new service connections to existing electrical, water, sewer, storm drainage, and telecommunications systems and infrastructure located near the project site. In comparison to the existing use, the proposed project, which includes an improved softball field facility, would generate a marginal increase in the demand for water supply, wastewater treatment, electric power, and telecommunications facilities. New drainage infrastructure would be included in the proposed project to accommodate stormwater flows and connect the project to existing storm drain infrastructure. While the proposed project would require new service connections, it would not require new or expanded off-site water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities to adequately serve the project.

The proposed project would be served by the existing EBMUD water supply and distribution system. No new water sources or entitlements would be required for the proposed project. As detailed in the Initial Study, water demand would not substantially increase with the proposed project. The proposed project would also implement UC Berkeley CBPs related to the conservation of water supplies. Therefore, the capacity of EBMUD's system is adequate to serve the project and the impact to water supply would be *less than significant*.

EBMUD also provides wastewater collection and treatment for UC Berkeley. The proposed project would generate wastewater associated with the improved concourse building, which would be treated by the EBMUD Main Wastewater Treatment Plant (MWWTP) in the City of Oakland. The proposed new concourse building would be larger than the existing Cal Softball Field structure and attendance would somewhat increase. Although the size of the

structure and attendance would increase, wastewater generation would not substantially increase with the proposed project. In addition, as part of the proposed project, UC Berkeley would implement CBPs related to sewer services, including CBP USS-5 that allows for payments to service providers to help fund wastewater treatment or collection facilities improvements, under Section 54999 of the California Government Code, if such improvements are required to serve individual projects or campus growth overall. Therefore, the proposed project would not generate wastewater exceeding the capacity of the EBMUD MWWTP. Because the wastewater generation is not expected to substantially increase with the project, modification or expansion of the EBMUD wastewater distribution and treatment system would not be required. For these reasons, the proposed project impact related to wastewater treatment capacity would be *less than significant*.

It should be noted that EBMUD submitted a comment letter in January of 2020 during the public review of an Addendum to the 2020 LRDP EIR for the proposed project (EBMUD 2020). The letter indicated that EBMUD's MWWTP and interceptor system are anticipated to have adequate dry weather capacity to accommodate and treat the wastewater flows from the proposed project; however, concerns were expressed about wet weather flows. The letter indicates that the East Bay regional wastewater collection system experiences exceptionally high peak flows during storms due to excessive stormwater infiltration and inflow (I/I) that enters the system through cracks and misconnections in both public and private sewer lines. Discharges from three Wet Weather Facilities that have been historically operated to provide primary treatment and disinfection for peak wet weather flows that exceed the capacity of the MWWTP need to be eliminated by 2036, which requires actions be taken over time to reduce I/I in the system.

The EBMUD comment letter states that the lead agency should require the following mitigation measures to contribute to I/I reductions: (1) replace or rehabilitate any existing sanitary sewer collection systems, including sewer lateral lines to ensure that such systems and line are free from defects or, alternatively, disconnected from the sanitary sewer collection systems, including sewer lateral lines to ensure that such systems and lines are free from defects or, alternatively, disconnected from the sanitary sewer system, and (2) ensure any new wastewater collection systems, including sewer lateral lines, for the project are constructed to prevent I/I to the maximum extent feasible while meeting all requirements contained in the Regional Private Sewer Lateral Ordinance and applicable municipal codes or Satellite Agency ordinances.

The University acknowledges the above comments from EBMUD. The University is located in Berkeley and is not covered by EBMUD's Regional Private Sewer Lateral Program. The UC Berkeley is not subject to the Regional Private Sewer Lateral Ordinance because it is a state agency. However, UC Berkeley understands the importance of minimizing stormwater I/I into the sanitary sewer and addressing sewer lateral rehabilitation. For example, the University recently completed a Centennial Sewer project in summer 2023. The 8-inch sewer main on Centennial from Strawberry Canyon Recreation and Pool to the intersection of Stadium Rim and Canyon Road was replaced. Previously there were several damaged sections that restricted flow prior to the replacement work. The University had installed a level meter in a sewer manhole at Stadium Rim Way, which is downgradient of the project site. After replacement, the level meter shows consistent flows that are well within the sewer capacity. As explained above, wastewater generation is not expected to substantially increase with the project improvements and therefore modification or expansion of the EBMUD wastewater distribution and treatment system would not be required to serve the project. Additionally, new sewer connections installed to serve the proposed project would be constructed to prevent or minimize stormwater I/I into the sanitary sewer to the maximum extent feasible. As indicated previously, project impacts related to wastewater would be *less than significant*.

In response to the NOP, EBMUD submitted an additional comment letter in November 2022 during the NOP comment period. The letter contained the same information as described in the 2020 comment letter related to its capacity, infrastructure, and requested mitigation measures related to I/I reductions. However, the 2022 letter also

included information related to its non-domestic recycled water policies and planning. Specifically, the letter requests that UC Berkeley coordinate with EBMUD, providing estimated expected water irrigation demand for potential recycled water. The University acknowledges this comment from EBMUD about potential demand for recycled water from irrigation and will coordinate with EBMUD to provide such information.

Project construction and demolition activities would generate debris materials that would need to be removed from the site and recycled or disposed of. Project operation would generate a nominal amount of solid waste associated with practice and games. As discussed in the Initial Study, implementation of the proposed project would not generate solid waste in excess of existing standards, the capacity of local infrastructure, or otherwise impact the attainment of solid waste reduction goals. While the proposed project would result in an increase in solid waste generation over existing conditions, the Keller Canyon Landfill, which serves the project area, is expected to have capacity until 2050. The amount of solid waste generated by the proposed project would constitute a negligible portion of the remaining available capacity of the Keller Canyon Landfill through 2050. The proposed project would also comply with all applicable regulations related to solid waste. For these reasons, the proposed project impacts related to landfill capacity and solid waste would be *less than significant*.

5.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

The CEQA Guidelines require a description of any significant impacts, including those that can be mitigated but not reduced to a level of insignificance (Section 15126.2[c]). Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described. As described in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, the Proposed Project would result in the following significant unavoidable impacts that can be reduced through implementation of mitigation measures identified in Chapter 4 but not to less than significant. The significant and unavoidable impacts of the Proposed Project include:

- **Impact NOI-1: Temporary or Permanent Increase in Ambient Noise.** The proposed project could generate a substantial temporary 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, but would not generate a substantial permanent increase in such ambient noise levels.

  As described in Section 4.5, Noise, this impact would be significant and unavoidable for construction (temporary) noise only. Implementation of Mitigation Measure (MM) NOI-1 would reduce construction noise impacts by: restricting noise construction activities to daytime hours, equipping construction equipment with mufflers and noise suppressors, siting support equipment as far away as possible from sensitive receptors, installing a temporary noise barrier, and limiting idling of equipment. Due to the proximity of the closest residences, the elevation of such residences above the construction site elevations, and the stringent construction noise standards adopted by the City of Berkeley, a perimeter construction noise barrier and other noise control methods, while included in MM NOI-1, would not likely be sufficient to reduce construction noise exposure levels at nearby Berkeley residences to below the applicable standard. Therefore, even with the implementation of MM NOI-1, construction noise impacts would remain *significant and unavoidable*.
- **Impact TRA-2: Vehicle Miles Traveled.** The proposed project could conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b).

  As described in Section 4.6, Transportation, this is a conservative impact finding given that the proposed project is located in a transit priority area and includes gameday TDM measures that would be implemented to potentially reduce automobile congestion, increase pedestrian and bicycle use, and encourage transit. However,

the travel mode survey indicates that 98 percent of spectators drive to games, and the TDM measures included as part of the project cannot be accurately assessed for their reduction in trip generation.

The increase in spectators during typical events would occur on up to only 25 games during the competitive spring season. If daily vehicle trips were annualized, the project in total would meet the small project screening threshold and would be screened out of further vehicle miles traveled (VMT) analysis because VMT impacts would be assumed to be less than significant, based on the OPR Technical Advisory (OPR 2018). VMT as a transportation metric and associated VMT thresholds are intended to reduce GHG emissions on an annual basis. As provided in Chapter 5, CEQA Considerations, the impact of the proposed project related to GHG emissions would be less than significant with the implementation of the UC Sustainable Practices Policy at the campus level, including the option to purchase carbon offsets, which would ensure a net zero increase in GHG emissions with the proposed project. However, as indicated above the VMT impact is conservatively determined to be *potentially significant*.

There are no feasible mitigation measures to reduce the number of spectators for typical events, without either reducing the overall attendance at the proposed Cal Softball Field or restricting ticket sales to lower the average number of spectators per year. Such reduction in attendance is not feasible to implement, as a facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament, as indicated in the project objectives provided in Chapter 3, Project Description. Therefore, the VMT impact associated with typical events would remain *significant and unavoidable*.

- Impact TRA-5: Cumulative Transportation Impacts. The proposed project, in combination with past, present, and reasonably foreseeable projects, could result in a significant cumulative impact related to transportation from vehicle miles traveled.

  As described in Section 4.6, Transportation, this is a conservative impact finding for the same reasons described in Impact TRA-2 with no feasible mitigation measures. Therefore, the cumulative VMT impact would remain *significant and unavoidable*.

5.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The CEQA Guidelines require a discussion of significant irreversible environmental changes with project implementation, including uses of nonrenewable resources during the initial and continued phases of the project (Section 15126.2[d]). However, CEQA Guidelines Section 15127 indicates that information concerning irreversible changes needs to be included only in EIRs prepared in connection with:

(a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;

(b) The adoption by a Local Agency Formation Commission of a resolution making determinations; or

(c) A project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 United States Code Sections 4321–4347.

As the proposed project is not one of the above project types, this EIR is not required to include an analysis of significant irreversible environmental changes.

5.4 GROWTH-INDUCING IMPACTS

Section 15126.2(e) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the surrounding environment, either directly or indirectly. Typical growth-inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or underserved area, or the removal of major barriers to development.

This section evaluates the proposed project's potential to create such growth inducements. As Section 15126.2(e) requires, "It must not be assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment." In other words, negative impacts associated with growth inducement occur only where the projected growth would cause significant adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Indirect, or secondary, growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by or attracted to a new project.

Implementation of the proposed project would not induce direct growth as it would not increase student enrollment or require the hiring of campus faculty or staff. The project does not provide urban services to a previously unserved or underserved area, housing, or new businesses. Additionally, the project would not induce indirect growth as it would not cause population growth that would require additional demands for housing, goods, and services. Although the project would require employees for construction, it is anticipated that this workforce would commute each day from within the region. It is also anticipated that this workforce would come from the existing labor pool of regional construction workers and would not require additional construction workers to move to the area. Therefore, the direct and indirect growth-inducing effects associated with the proposed project would not represent a significant impact.

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6. Alternatives

This chapter describes alternatives to the proposed UC Berkeley Cal Softball Field Renovation Project (proposed project or project), consistent with California Environmental Quality Act (CEQA) Guidelines Section 15126.6. This chapter presents the objectives of the proposed project, a summary of its significant environmental impacts, and a description of the alternatives that were considered but eliminated from further consideration, followed by an analysis of the four alternatives evaluated, including the No Project Alternative. A comparison of four alternatives to the proposed project is provided and the environmentally superior alternative is identified.

According to CEQA Guidelines Section 15126.6, an environmental impact report (EIR) shall describe a range of reasonable alternatives to the project or to the location of the project, that would feasibly attain most of the basic objectives of the project and could avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. Section 15126.6 further requires that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project or reducing them to a level of insignificance even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly. The alternatives analysis also should identify any significant effects that may result from a given alternative.

The lead agency is responsible for selecting a reasonable range of potentially feasible project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. The range of alternatives is governed by a "rule of reason" that requires the EIR to set forth only those potentially feasible alternatives necessary to permit a reasoned choice. The alternatives shall be limited to those that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only those that the lead agency determines could feasibly attain most of the basic objectives of the project while substantially lessening any of the significant effects of the project. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

An EIR is not required to consider alternatives which are infeasible. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines Section 15364). Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or already owns the alternative site). None of these factors establishes a fixed limit on the scope of reasonable alternatives. Under CEQA case law, the concept of feasibility also "encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, and technological factors." (*City of Del Mar v. City of San Diego* [1982] 133 Cal.App.3d 410, 417; *California Native Plant Society v. City of Santa Cruz* [2009] 177 Cal.App.4th 957.) In assessing the feasibility of alternatives, agency decisionmakers may also take account of the extent to which the alternatives meet or further the agency's fundamental purpose or objectives in considering a proposed project. (*Sierra Club v. County of Napa* [2004] 121 Cal.App.4th 1490, 1506-1509; *Citizens for Open Government v. City of Lodi* [2012] 296 Cal.App.4th 296, 314-315; *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* [2008] 43 Cal.4th 1143, 1165, 1166; *Yerba Buena Neighborhood Consortium, LLC v. Regents of University of California* (2023) 95 Cal.App.5th 779, 795-799.

6.1 PROJECT OBJECTIVES

The fundamental purpose of the UC Berkeley Cal Softball Field Renovation Project is to provide an equitable facility for women's softball. As such, as described in Chapter 3, Project Description, the university's objectives for the UC Berkeley Cal Softball Field Renovation Project are to:

1. Support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports and improving the training and competition facilities provided to female student athletes who participate in the Cal women's softball program.
2. Ensure the women's softball field is in a location with walkable access to campus academic and athletic resources.
3. Meet National Collegiate Athletic Association Division I (NCAA) design requirements for softball fields to accommodate the need for the Cal women's softball team to practice and compete, including evening games, on a NCAA compliant field and to host home playoff games on campus, consistent with the facilities and opportunities provided to university male student athletes. NCAA design requirements include:
    a. Minimum field dimensions - The outfield fences need to be 190 feet down the right and left field baselines, and 220 feet to the centerfield.
    b. Seating capacity - A facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament. The women's softball team would have to qualify for post-season play for the NCAA to consider UC Berkeley as a host for a playoff game.
    c. Competition-grade lighting - Lighting must meet NCAA best lighting practices for standard intercollegiate play. In accordance with the NCAA Best Lighting Practices for Softball, for Regional and National Broadcasts (NCAA 2011), lighting specifications include:
        i. Horizontal light levels: 100 footcandles infield/70 footcandles outfield.
        ii. Vertical light levels:
            1. 70 footcandles infield/40 footcandles outfield to high home plate camera.
            2. 70 footcandles infield/40 footcandles outfield to 1st baseline camera.
            3. 70 footcandles infield/40 footcandles outfield to 3rd baseline camera.
        iii. Grid spacing: 20 feet x 20 feet.
4. Improve the existing recreational facility at the Cal Softball Field to meet the needs, and enhance the experience, of the current student body and the community. This aligns with Berkeley campuswide land use objective to "Modernize and adapt existing buildings through strategic renovation projects that support current and future needs and pedagogies, and to improve space utilization and efficiency. Take advantage of these opportunities to maximize long-term flexibility."
5. Upgrade existing infrastructure surrounding Cal Softball Field, including Americans with Disabilities Act (ADA) access, sidewalks, transit stops, and utilities, in a cost-effective manner as project site acreage and other site constraints allow.
6. Prioritize renovation of existing recreational facilities to ensure adequate land remains available in the central campus for academic or research buildings. This aligns with the Berkeley campuswide land use objective to "Make the highest and best use of each site to employ limited land resources most efficiently. To the extent possible, prioritize utilization of infill or undeveloped sites for facility development to accommodate program needs, taking into consideration site setting and context, adjacent uses, and coordination with existing landscape, infrastructure, and mobility systems."

6.2 PROJECT IMPACT SUMMARY

The range of alternatives studied in the EIR must be broad enough to permit a reasoned choice by decision-makers when considering the merits of the project. The analysis should focus on alternatives that are potentially feasible. Under CEQA, alternatives that are remote or speculative should not be discussed in the analysis of alternatives. Furthermore, alternatives should focus on reducing or avoiding significant environmental impacts associated with the project as proposed. This section provides a summary of the proposed project impacts and highlights those impacts determined to be significant.

6.2.1 SUMMARY OF PROJECT IMPACTS

6.2.1.1 AESTHETICS

As described in Section 4.2, Aesthetics, proposed project impacts related to scenic vistas, scenic quality, and light and glare would be less than significant (see Impacts AES-1 through AES-3). Cumulative aesthetic impacts would also be less than significant (see Impact AES-4). The proposed project would have no impacts related to scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

6.2.1.2 BIOLOGICAL RESOURCES

As described in Section 4.3, Biological Resources, proposed project impacts related to special-status species, specifically San Francisco dusky-footed woodrat, would be reduced to less than significant with the implementation of a mitigation measure (MM) BIO-1 that provides for preconstruction surveys for San Francisco dusky-footed woodrat stick houses and measures to implement if such houses cannot be avoided during construction (see Impact BIO-1). Other impacts to special-status species would be less than significant with the implementation of relevant CBPs requiring preconstruction surveys for nesting birds and bats. Proposed project impacts related to riparian habitat and other sensitive natural communities, state or federally protected wetlands, and wildlife movement and native wildlife nursery sites would also be less than significant (see Impacts BIO-2, BIO-3, and BIO-4,). Cumulative biological resource impacts would also be less than significant (see Impact BIO-5). The proposed project would have no impacts related to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan, and related to conflicts with local policies protecting biological resources.

6.2.1.3 CULTURAL AND TRIBAL RESOURCES

As described in Section 4.4, Cultural and Tribal Cultural Resources, proposed project impacts related to built environment historical resources would be less than significant (see Impact CUL-1). Proposed project impacts related to archaeological and tribal cultural resources would be reduced to less than significant with the implementation of MM CUL-2 that requires the implementation of measures during construction to provide for the appropriate treatment of resources if found during construction (see Impact CUL-2 and Impact CUL-4). Proposed project impacts related to human remains would be less than significant with the implementation of a relevant CBP that provides procedures to follow if human remains are discovered during construction (see Impact CUL-3). Cumulative cultural resource impacts would also be less than significant (see Impact CUL-5).

6.2.1.4 NOISE

As described in Section 4.5, Noise, relevant university CBPs would be implemented as part of the proposed project to reduce construction (temporary) and operational (permanent) noise. Proposed project impacts related to the

generation of substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance would be significant and unavoidable due to construction activities even with the implementation MM NOI-1 (Impact NOI-1). While MM NOI-1 would reduce the impact, due to the proximity of the closest residences, the elevation of such residences above the construction site elevations, and the stringent construction noise standards adopted by the City of Berkeley, a perimeter construction noise barrier and other noise control methods called for in MM NOI-1 would not be sufficient to reduce construction noise exposure levels at nearby Berkeley residences to below the applicable standard for construction. Proposed project impacts related to the generation of substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards due to noise from the public address (PA) system and spectator noise would be less than significant (Impact NOI-1), as the relative noise increase at adjacent receiver locations would be less than the identified significance threshold. Proposed project impacts related to construction and operational vibration would be less than significant (see Impacts NOI-2). Cumulative noise impacts would also be less than significant (see Impact NOI-3).

6.2.1.5 TRANSPORTATION

As described in Section 4.6, Transportation, proposed project impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle facilities would be less than significant (Impact TRA-1). Proposed project impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system related to pedestrian facilities would be reduced to less than significant with the implementation of MM TRA-1 that requires the implementation of measures to improve pedestrian safety and connectivity along Stadium Rim Way, Centennial Drive, and portions of Canyon Road leading to the Cal Softball Field, in order facilitate safe egress and ingress of spectators before and after typical and maximum events (Impact TRA-1). Proposed project impacts related to hazards due to geometric design features or incompatible uses, and emergency access would be less than significant (see Impacts TRA-3 and TRA-4). Relevant university CBPs would be implemented as part of the proposed project to reduce both construction and operational transportation impacts.

Proposed project impacts related to vehicle miles traveled (VMT) under both project and cumulative conditions would be significant and unavoidable (see Impacts TRA-2 and TRA-5). This is a conservative impact finding given that the proposed project includes gameday transportation demand management (TDM) measures that cannot be accurately assessed for their reduction in trip generation, the increase in spectators during typical events would occur on up to only 25 games during the competitive spring season, and if vehicle trips were annualized the project would meet the small project screening threshold and would be screened out of further VMT analysis because VMT impacts would be assumed to be less than significant. There are no feasible mitigation measures to reduce the number of spectators for typical events and still meet the required seating to host a post-season NCAA women's softball game or tournament. Therefore, the VMT impact associated with typical events under project and cumulative conditions would remain significant and unavoidable.

6.2.1.6 WILDFIRE

As described in Section 4.7, Wildfire, proposed project impacts related to impairment of emergency response or evacuation plan, exacerbation of wildfire risks, fire risks associated with installation or maintenance of infrastructure, and exposure of people or structures to significant environmental risks would be less than significant with compliance with applicable fire code and building code requirements, implementation of applicable CBPs, and implementation of the wildfire protection plan prepared for the proposed project (see impacts WF-1 through WF-6).

6.2.1.7 OTHER IMPACTS

The Initial Study (Appendix A) indicates that the proposed project would result in no impacts or less-than-significant impacts in the following environmental resource topics: agriculture and forestry resources, air quality, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems. Chapter 5, Other CEQA Considerations, summarizes the results of the Initial Study and further elaborates on these results where needed to respond to scoping comments or for other reasons.

6.3 ALTERNATIVES CONSIDERED BUT ELIMINATED

This section discusses alternatives that were considered during project planning or during the preparation of this Draft EIR but were eliminated from detailed consideration because they did not meet most of the basic project objectives; were found to be infeasible for technical, environmental, or social reasons; or they did not avoid or substantially lessen significant environmental impacts of the proposed project. Section 15126.6(c) of CEQA Guidelines indicates that the range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible, and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (1) failure to meet most of the project objectives, (2) infeasibility, or (3) inability to avoid significant environmental impacts (see introduction to this Chapter).

The university considered 10 alternatives, 6 of which were eliminated from further consideration as explained below. In developing the alternatives, the comments received in response to the EIR Notice of Preparation (NOP) were reviewed. As a result of the scoping comments received for the proposed project and UC Berkeley's ongoing project planning process, the university considered the following alternatives, which were eliminated from further consideration as alternatives to the proposed project, as explained below:

1. Existing Project Site Orientation Alternative
2. Cal Softball Field Siting Alternatives
    a. Richmond Field Station
    b. Evans Diamond
    c. Downtown Berkeley
    d. Athletic Quadrant
    e. North Field

6.3.1 EXISTING PROJECT SITE ORIENTATION ALTERNATIVE

During the planning and design of the proposed project, UC Berkeley considered a different orientation for the proposed Cal Softball Field and facilities. With this orientation, the buildings, bleachers, and homebase would be located along Centennial Drive and the facility would be facing toward the south and the adjacent Panoramic Hill Neighborhood. This alternative includes all proposed project components, as described in Chapter 3, Project Description. Given the orientation of this alternative toward the adjacent residential neighborhood, noise and lighting impacts would be increased as compared to the proposed project. Given that the alternative would not

reduce any of the potentially significant impacts of the proposed project, this alternative was eliminated from further consideration as an alternative to the proposed project.

6.3.2 CAL SOFTBALL FIELD SITING ALTERNATIVES

6.3.2.1 RICHMOND FIELD STATION

UC Berkeley considered the use of Richmond Field Station because of the availability of space to build a new softball athletic facility. However, this siting alternative was eliminated from further considerations as the site is approximately 7.5 miles away from the main Campus Park, is not accessible from the main campus via transit and shuttle, and does not have proximity to existing parking lots or garages. Therefore, this siting alternative would not meet the project objective to place the softball field close enough to provide the student athletes with walkable access to campus academic and athletic resources. Additionally, environmental impacts associated with constructing and operating a new softball athletic facility at this distance to the main Campus Park could result in greater environmental impacts as compared to renovating the existing Cal Softball Field.

6.3.2.2 EVANS DIAMOND

The use of the existing Evans Diamond Baseball Field at the west side of Campus Park for the intercollegiate softball program was determined not to be a viable siting alternative for multiple reasons: (1) the intercollegiate softball and baseball programs require fields of different dimensions and therefore this field is not appropriately sized to serve the IA Women's Softball Program (Cal women's softball), (2) per NCAA guidelines, softball infields are grass while baseball infields are dirt, and (3) there would be limitations for use of the field for practice and games by the Cal women's softball team due to competing scheduling with the baseball program. More importantly, having the women play on the men's baseball field would put the university in violation of Title IX requirements and would not conform to the university's agreement with U.S. Department of Education's Office for Civil Rights. Therefore, this siting alternative would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX.

6.3.2.3 DOWNTOWN BERKELEY

This siting alternative considered underutilized sites off campus in downtown Berkeley. This alternative was eliminated from further consideration as no sites were large enough to accommodate a softball field with the dimensions required by NCAA. Therefore, this siting alternative would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX.

6.3.2.4 ATHLETIC QUADRANT

This siting alternative considered the Athletic Quadrant in the southwest area of the main Campus Park. This alternative was eliminated from further consideration as there is no sufficient land available within this area to accommodate construction of a softball field with its associated improvements such as team rooms, lounges and coach's room that are required to provide equitable facilities in compliance with Title IX. Therefore, this siting alternative would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX.

6.3.2.5 NORTH FIELD

This siting alternative considered the North Field in the main Campus Park. This alternative was eliminated from further consideration, as the North Field is currently planned for a new clean energy thermal plant. Planning and analysis has already been completed to identify all infrastructure improvements required in order to connect the new plant to the adjacent campus buildings.

6.4 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

This section describes the alternatives to the proposed project that were selected and analyzed according to CEQA Guidelines Section 15126.6(a) after elimination of some considered alternatives as explained in Section 6.3, Alternatives Considered but Eliminated. The analyzed alternatives, including the No Project Alternative, represent a range of reasonable alternatives to the proposed project that would feasibly attain at least some of the proposed project's basic objectives, and would avoid or substantially lessen the significant adverse environmental effects of the proposed project, as listed in Section 6.2, Overview of Significant Project Impacts, and described in detail in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures.

The following four alternatives were selected for comparative analysis in this EIR:

- **Alternative 1: No Project Alternative** – The No Project Alternative consists of the circumstances under which the proposed project does not proceed. Under this alternative, the existing softball field would remain on the site and would continue to be used, as under existing conditions.
- **Alternative 2: Reduced Project Alternative** – Alternative 2 consists of the renovation of the existing Cal Softball Field with all proposed project components with the exception that the seating capacity would be reduced, as compared to both existing conditions and the proposed project.
- **Alternative 3: No Games After Dark Alternative** – Alternative 3 consists of the renovation of the existing Cal Softball Field with all proposed project components with the exception that no games after dark would be allowed and therefore no new field lighting would be provided and the use of the existing temporary field lighting would be eliminated.
- **Alternative 4: Comprehensive Project Alternative at University Village Albany** – Alternative 4 consists of the development of the proposed project at the University Village Albany on the site of an existing softball field. Alternative 4 would include all proposed project components with the exception that a wildfire protection plan under the Long Range Development Plan (LRDP) EIR Mitigation Measure WF-2a would not be required, as the site is located outside of the Very High Fire Hazard Severity Zone.

These alternatives are summarized in Table 6-1 and described in detail and evaluated in the subsequent sections.

TABLE 6-1. COMPONENTS OF THE PROPOSED PROJECT AND ALTERNATIVES

Project Component	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project	Alternative 3 No Games After Dark	Alternative 4 Comprehensive Project at University Village Albany
Field	Meet NCAA field dimensions	No	Yes	Yes	Yes
Fencing	Improve fencing	No	Yes	Yes	Yes
Dugouts	Improve dugouts	No	Yes	Yes	Yes

TABLE 6-1. COMPONENTS OF THE PROPOSED PROJECT AND ALTERNATIVES

Project Component	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project	Alternative 3 No Games After Dark	Alternative 4 Comprehensive Project at University Village Albany
Seating	Provide 1,511 permanent seats to meet NCAA requirements	No	No; limited to 1,000 seats	Yes	Yes
Team Rooms	New home and visiting team rooms with lockers	No	Yes	Yes	Yes
Restrooms	Improve restrooms	No	Yes	Yes	Yes
Batting Cages	Improve batting cages and pitching area	No	Yes	Yes	Yes
Concourse	New elevated concourse	No	Yes	Yes	Yes
Press Box	New press box	No	Yes	Yes	Yes
Lighting	Provide NCAA competition-grade field lighting	No	Yes	No	Yes
PA System	Replace speakers for field use during games and practice	No	Yes	Yes	Yes
Power and Data	Provide power and data throughout to avoid need for generator	No	Yes	Yes	Yes
TDM Plan	Implement a Transportation Demand Management Plan	No	Yes	Yes	Yes
WPP	Implement a wildfire protection plan	No	Yes	Yes	No
CBPs	Implement relevant University continuing best practices	NA	Yes	Yes	Yes
SWPPP	Implement Stormwater Pollution Prevention Plan	No	Yes	Yes	Yes

Notes: NCAA = National Collegiate Athletic Association Division I; PA = public address; TDM = Transportation Demand Management; CBP = Continuing Best Practices; SWPPP = Storm Water Pollution Prevention Plan; NA = Not applicable

6.4.1 ASSUMPTIONS AND METHODOLOGY

The alternatives analysis is presented as a comparative analysis to the proposed project. The alternatives analysis assumes that all applicable mitigation measures (MM) recommended for the proposed project would also apply to potentially significant environmental impacts of each alternative, where relevant, except for Alternative 1, No Project Alternative. The following analysis compares the potentially significant environmental impacts of the four alternatives with those of the proposed project for the environmental topics analyzed in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. The four alternatives are also reviewed for their ability to meet the project objectives provided in Section 6.1, Project Objectives. A summary of the alternatives analysis conclusions is provided in Section 6.5, Environmentally Superior Alternative and shown in Tables 6-2 and 6-3.

6.4.2 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

6.4.2.1 DESCRIPTION OF ALTERNATIVE 1

CEQA Guidelines Section 15126.6(e) generally provides that "[t]he 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published, … as well as what would be reasonably expected to

occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." Section 15126(e)(3)(B) provides that, where, as here, a proposed project is something "other than a land use or regulatory plan," the "No Project" Alternative is "the circumstance under which the project does not proceed." The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the project (CEQA Guidelines Section 15126.6[e][1]). "[W]here failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." (CEQA Guidelines Section 15126.6[e][3][B]).

Given the above, Alternative 1 would not result in the renovation and improvement of the existing Cal Softball Field to meet modern safety and NCAA competition standards for Cal women's softball and would not support campus compliance with Title IX[1] of the Education Amendments of 1972 (20 USC 1681 et seq.). The existing uses at the project site on the existing Cal Softball Field would be retained and no site improvements would be pursued. All conditions on the project site are generally based on those existing in 2022 when the NOP was released. As a NCAA and Title IX compliant Cal women's softball field would still be needed, the university would likely continue to pursue the development of such a field in the future at another site.

6.4.2.2 IMPACT ANALYSIS

Under Alternative 1, the proposed project would not be implemented, and the project would not be constructed. The Cal Softball Field at the existing site would continue to be used for Cal women's softball. Therefore, the significant and potentially significant impacts associated with constructing and/or operating the proposed project identified in this Draft EIR would not occur (see Table 6-2) including impacts related to: biological resources (Impacts BIO-1), cultural resources related to archaeological and tribal cultural resources (Impact CUL-2 and Impact CUL-4), temporary construction noise (Impact NOI-1), and transportation related to pedestrian safety and conflicts with related policies (Impact TRA-1) and related to VMT (Impact TRA-2 and TRA-5). In particular, the significant unavoidable impact related to temporary construction noise impacts (Impacts NOI-1) and related to project and cumulative VMT impacts (TRA-2 and TRA-5) would not occur with Alternative 1, as no construction or operation of a renovated Cal Softball Field would occur under this alternative. In addition, none of the other impacts related to the proposed project identified as less than significant would occur as shown in Table 6-2.

While Alternative 1 would not result in new impacts as compared to existing conditions, ongoing use and operations at the existing Cal Softball Field would continue, resulting in operational noise, lighting, vehicle trips, etc. Additionally, as indicated above, a NCAA and Title IX compliant Cal women's softball field would still be needed, and the university would likely continue to pursue the development of such a field in the future at another site. Therefore, the impacts associated with the proposed project may result in the future, even under the Alternative 1.

6.4.2.3 ABILITY TO MEET PROJECT OBJECTIVES

Alternative 1 would not meet most of the identified project objectives (see Table 6-3). Specifically, Alternative 1 would not support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports, as it would not improve the training and competition facilities provided to female student athletes who participate in the Cal women's softball program (Objective 1). Therefore, Alternative 1 would not meet the project's fundamental purpose

[1] Title IX is a portion of the United States Education Amendments of 1972 that makes it illegal to discriminate against a person on the basis of sex in any federally funded activity and applies to all aspects of education, including athletics programs. As it relates to athletics, one of the requirements of Title IX is that women and men be provided equitable opportunities to participate in sports.

to provide an equitable facility for women's softball in order to ensure compliance with Title IX. Regarding Objective 3, Alternative 1 would not meet NCAA design requirements related to seating capacity and therefore would not allow the woman's softball team to practice and compete on a NCAA compliant field.

As the existing Cal Softball Field would continue to be used, Alternative 1 would not improve the existing recreational facility at the Cal Softball Field to meet the needs, and enhance the experience, of the current student body and the community (Objective 4), would not upgrade existing infrastructure surrounding Cal Softball Field, including ADA access, sidewalks, transit stops, and utilities (Objective 5), and would not prioritize renovation of existing recreational facilities, as the university would likely continue to pursue the development of such a field in the future at another site (Objective 6).

Alternative 1 would meet Objective 2, as it would avoid siting a new softball field in or near the central campus and the existing field would continue to be close enough to provide student athletes with walkable access to campus academic and athletic resources.

6.4.3 ALTERNATIVE 2: REDUCED PROJECT ALTERNATIVE

6.4.3.1 DESCRIPTION OF ALTERNATIVE 2

Alternative 2 consists of the renovation and improvement of the existing Cal Softball Field with most proposed project components. As shown in Table 6-1, Alternative 2 would include an improved field with NCAA field dimensions, improved fencing and dugouts, new home and visiting team rooms and lockers, improved restrooms, improved batting cages and pitching area, new elevated concourse, new press box, NCAA competition-grade field lighting, new PA system, power and data throughout, and implementation of a TDM plan, wildfire protection plan, and university CBPs, similar to the proposed project. However, the seating capacity would be reduced, as compared to both existing conditions and the proposed project (see Table 6-1). Specifically, under Alternative 2, permanent seating would be provided for 1,000 spectators, which is a reduction from the existing 1,340 seats provided under existing conditions and the 1,511 seats proposed with the project. The reduction in spectator seating capacity with Alternative 2 would reduce the "sell-out" event size at the softball field as compared to both existing conditions and proposed project conditions. However, the typical event based on the average game attendance would still increase somewhat with Alternative 2 (from 500 spectators under existing conditions to 660 spectators under Alternative 2), as there is a potential for an increase in attendance due to the draw of a renovated facility with updated amenities.

The spectator capacity for Alternative 2 is designed to reduce the pedestrian safety and VMT impacts of the proposed project, as further described in the impact analysis below. Given the reduced seating under Alternative 2, the footprint of the facility would be reduced in size.

6.4.3.2 IMPACT ANALYSIS

AESTHETICS

Like the proposed project, Alternative 2 impacts related to scenic vistas, scenic quality, and light and glare would also be less than significant. Alternative 2 impacts related to scenic vistas and scenic quality would be somewhat reduced as compared to the proposed project given that the facility would have a smaller footprint due to the reduced seating (*less than significant; lesser impact*). Light and glare impacts of Alternative 2 would be the same as the proposed project given that the competition-grade lighting for this alternative would be the same as for the proposed project (*less than significant; similar impact*). Similar to the proposed project, Alternative 2 would also be subject to UC Berkeley's Design Review, Physical Design Framework, Campus Design Standards, and relevant CBPs,

as described in Section 4.2, Aesthetics. These requirements would help reduce impacts to visual resources as part of the design review process.

BIOLOGICAL RESOURCES

Alternative 2 impacts related to special-status species, specifically San Francisco dusky-footed woodrat, would be reduced as compared to the proposed project given the smaller facility footprint and reduced spectator size and associated noise with this alternative (even though operational impacts related to lighting would be the same), but would still require the implementation of MM BIO-1 to reduce the impact to less than significant (*less than significant with mitigation; lesser impact*). Similar to the proposed project, Alternative 2 would also be subject to UC Berkeley's relevant CBPs requiring preconstruction surveys for nesting birds and bats. Alternative 2 impacts related to riparian habitat and other sensitive natural communities, state or federally protected wetlands, and wildlife movement and native wildlife nursery sites would also be less than significant but would be somewhat reduced with this alternative given the smaller facility footprint and reduced spectator size and associated noise (*less than significant; lesser impact*).

CULTURAL AND TRIBAL RESOURCES

Alternative 2 impacts related to built environment historic resources would be less than significant and would be similar to the proposed project, given that the competition-grade lighting would be the same under this alternative (*less than significant; similar impact*). Similar to the proposed project, Alternative 2 impacts related to archaeological resources and tribal cultural resources would also be reduced to less than significant with the implementation of MM CUL-2 but would be somewhat reduced with this alternative given the smaller facility footprint (*less than significant with mitigation; lesser impact*). Alternative 2 impacts related to human remains would be less than significant with the implementation of the relevant CBP described above but this impact would also be somewhat reduced with this alternative given the smaller facility footprint (*less than significant; lesser impact*).

NOISE

Alternative 2 impacts related to the generation of substantial temporary increase in ambient noise levels during construction would be reduced given the smaller footprint of the facility. However, the construction noise impact would remain significant and unavoidable with the implementation of MM NOI-1, as it is expected that this measure would not reduce construction noise levels below the applicable standard (*significant and unavoidable; lesser impact*). Alternative 2 impacts related to the generation of substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards due to noise from the PA system and spectator noise would be less than significant (Impact NOI-1); however, the impact would be reduced compared to the proposed project given the reduced capacity of the facility and therefore smaller spectator size and related noise (*less than significant; lesser impact*). Similar to the proposed project, Alternative 2 would also be subject to relevant CBPs. These requirements help reduce impacts associated with temporary and permanent noise generation from proposed projects.

Alternative 2 impacts related to construction and operational vibration would be less than significant but would be somewhat reduced as compared to the proposed project, given the smaller footprint of the facility under this alternative (*less than significant; lesser impact*).

TRANSPORTATION

Alternative 2 impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle facilities would also be less than significant and the impact would

be reduced compared to the proposed project, given that Alternative 2 would reduce spectator seating compared to the proposed project and compared to existing conditions and therefore use of transit, roadway, and bicycle facilities would be reduced (*less than significant; lesser impact*).

Alternative 2 would have no impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system related to pedestrian facilities during a maximum event, as spectator seating capacity with Alternative 2 would reduce the "sell-out" event size at the softball field as compared to existing conditions and therefore pedestrians associated with game events at the softball field would not contribute to existing pedestrian safety and connectivity issues (*no impact; lesser impact*). However, average attendance at the typical event would still increase somewhat as compared to existing conditions with Alternative 2, as there is a potential for an increase in average attendance due to the draw of a renovated facility with updated amenities. Therefore, similar to the proposed project, Alternative 2 would have a less than significant impact related to pedestrian safety with the implementation of MM TRA-1; however, the impact would be reduced compared to the proposed project given the reduced capacity of this alternative (*less than significant with mitigation; lesser impact*).

Alternative 2 would avoid the significant and unavoidable impact of the proposed project related to VMT, as Alternative 2 would generate or attract fewer than 110 trips per day in the average scenario with 660 spectators and would meet the small projects screening criteria and therefore the VMT impact would be assumed be less than significant. The reduction in spectator seating capacity with Alternative 2 would reduce the "sell-out" event size at the softball field as compared to both existing conditions and proposed project conditions. While the typical event based on the average game attendance would still increase somewhat with Alternative 2, the vehicle trip generation associated with this event type would be less than 110 trips per day (*less than significant impact*).

Alternative 2 impacts related to hazards from geometric design features or incompatible uses and related to emergency access would be less than significant but would be somewhat reduced with this alternative compared to the proposed project given the reduced seating capacity (*less than significant; lesser impact*). Relevant university CBPs would be implemented as part of Alternative 2 to reduce both construction and operational transportation impacts.

WILDFIRE

Alternative 2 impacts related to impairment of emergency response or evacuation plan, exacerbation of wildfire risks, fire risks associated with installation or maintenance of infrastructure, and exposure of people or structures to significant environmental risks would be less than significant. Alternative 2 impacts would be somewhat reduced as compared to the proposed project given that the facility would have a smaller footprint due to the reduced seating and would result in fewer spectators and vehicle trips (*less than significant; lesser impact*). Similar to the proposed project, Alternative 2 would also be subject to relevant fire and building codes, CBPs, and the wildfire protection plan for the project, as described in Section 4.7, Wildfire. These requirements would help reduce impacts related to wildfire risk.

6.4.3.3 ABILITY TO MEET PROJECT OBJECTIVES

Alternative 2 would not meet or would partially meet the identified project objectives (see Table 6-3). Specifically, Alternative 2 would not support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports, as it would not improve to NCAA standards the training and competition facilities provided to female student athletes who participate in the Cal women's softball program (Objective 1). Therefore, Alternative 2 would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX. Regarding Objective 3, Alternative 2 would not meet NCAA design

requirements related to seating capacity and therefore would not allow the woman's softball team to practice and compete at a NCAA compliant facility.

While Alternative 2 would improve the existing recreational facility at the Cal Softball Field, it would not fully meet the needs, and enhance the experience, of the current student body and the community, as the seating capacity would be reduced as compared to existing conditions (Objective 4). While Alternative 2 would renovate an existing recreational facility, the university would likely continue to pursue the development of a NCAA and Title IX compliant field in the future at another site and therefore Alternative 2 would not meet Objective 6, as it would not make the highest and best use of the project site such that limited land resources are used most efficiently.

Alternative 2 would meet Objective 2, as it would avoid siting a new softball field in or near the central campus and the renovated field on the existing site would continue to be close enough to provide student athletes with walkable access to campus academic and athletic resources. Alternative 2 would also meet Objective 5 as it would upgrade existing infrastructure surrounding the Cal Softball Field, including ADA access, sidewalks, transit stops, and utilities.

6.4.4 ALTERNATIVE 3: NO GAMES AFTER DARK ALTERNATIVE

6.4.4.1 DESCRIPTION OF ALTERNATIVE 3

Alternative 3 consists of the renovation and improvement of the existing Cal Softball Field with all proposed project components with the exception that no games after dark would be allowed and therefore no new competition-grade field lighting would be provided and existing field lighting would be removed. As shown in Table 6-1, Alternative 3 would include an improved field with NCAA field dimensions, improved fencing and dugouts, new home and visiting team rooms and lockers, improved restrooms, improved batting cages and pitching area, new elevated concourse, new press box, new PA system, power and data throughout, and implementation of a TDM plan, wildfire protection plan, and university CBPs, similar to the proposed project.

Existing and proposed project softball field hours of operations are Monday through Sunday 8:00 a.m. to 10:00 p.m. With the removal of the field lighting under Alternative 3, the existing hours of operation would change and be limited to daytime hours, which would vary depending on the time of year and whether Pacific Standard Time or Daylight-Saving Time is in place. Given this limitation, practice and competition games may extend over more days than currently anticipated with the proposed project.

6.4.4.2 IMPACT ANALYSIS

AESTHETICS

Like the proposed project, Alternative 3 impacts related to scenic vistas, scenic quality, and light and glare would be less than significant but would be reduced compared to the proposed project, given that competition-grade field lighting would not be installed and existing field lighting would be removed with this alternative and consequently no games after dark would be held (*less than significant; lesser impact*). Alternative 3 would be subject to UC Berkeley's Design Review, Physical Design Framework, Campus Design Standards, and relevant CBPs, as described in Section 4.2, Aesthetics. These requirements would help reduce impacts to visual resources as part of the design review process.

BIOLOGICAL RESOURCES

As Alternative 3 would result in the same proposed project features, except for competition-grade field lighting, Alternative 3 impacts related to special-status species, specifically San Francisco dusky-footed woodrat, would be somewhat reduced overall compared to the proposed project. While Alternative 3 would still require the implementation of MM BIO-1 to reduce the impact to less than significant, there would be no operational night lighting (dusk to 10 p.m.) and therefore the impacts would be reduced compared to the proposed project (*less than significant with mitigation; lesser impact*). Alternative 3 would be subject to UC Berkeley's relevant CBPs requiring preconstruction surveys for nesting birds and bats. Alternative 3 impacts related to riparian habitat and other sensitive natural communities, state or federally protected wetlands, and wildlife movement and native wildlife nursery sites would also be less than significant but would be somewhat reduced compared to the proposed project given the elimination of operational night lighting (*less than significant; lesser impact*).

CULTURAL RESOURCES

Alternative 3 impacts related to built environment historic resources would also be less than significant. While the competition-grade lighting would be eliminated under this alternative, such proposed project lighting was determined not to materially impair the Panoramic Hill Historic District (*less than significant; similar impact*). Similar to the proposed project, Alternative 3 impacts related to archaeological resources and tribal cultural resources would be reduced to less than significant with the implementation of MM CUL-2 and this impact would be the same with this alternative given that the facility footprint would be identical (*less than significant with mitigation; similar impact*). Alternative 3 impacts related to human remains would be less than significant with the implementation of the relevant CBP described above and this impact would be the same with this alternative given that the facility footprint would be identical (*less than significant; similar impact*).

NOISE

As Alternative 3 would result in the same proposed project features, except for competition-grade lighting, Alternative 3 impacts related to the generation of substantial temporary increase in ambient noise levels during construction would be the same as for the proposed project and would remain significant and unavoidable with the implementation of MM NOI-1, as it is expected that this measure would not reduce construction noise levels below the applicable standard (*significant and unavoidable; similar impact*). Alternative 3 impacts related to the generation of substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards due to noise from the PA system and spectator noise would be less than significant and similar to the proposed project (*less than significant; similar impact*). Similar to the proposed project, Alternative 3 would also be subject to relevant CBPs. These requirements help reduce impacts associated with temporary and permanent noise generation from proposed projects.

Alternative 3 impacts related to construction and operational vibration would be less than significant and would be similar as compared to the proposed project, given that this alternative would have the same proposed project features (*less than significant; similar impact*).

TRANSPORTATION

As Alternative 3 would result in the same proposed project features, except for competition-grade lighting, Alternative 3 impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle facilities would also be less than significant and the impact would be the same compared to the proposed project (*less than significant; similar impact*). Similarly, Alternative 3

impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system related to pedestrian facilities would also be reduced to less than significant with the implementation of MM TRA-1 (*less than significant with mitigation; similar impact*).

Alternative 3 would not avoid the significant and unavoidable impact of the proposed project related to VMT, as Alternative 3 would have the same capacity and features as the proposed project. Similar to the proposed project, this is a conservative impact finding for the same reasons described in Section 6.2.1, Summary of Project Impacts. (*significant and unavoidable; similar impact*).

Alternative 3 impacts related hazards due to geometric design features or incompatible uses, and emergency access would also be less than significant, similar to the proposed project (*less than significant; similar impact*). Relevant university CBPs would be implemented as part of the proposed project to reduce both construction and operational transportation impacts.

WILDFIRE

Alternative 3 impacts related to impairment of emergency response or evacuation plan, exacerbation of wildfire risks, fire risks associated with installation or maintenance of infrastructure, and exposure of people or structures to significant environmental risks would also be less than significant. Alternative 3 impacts would be the same as compared to the proposed project given that the facility would have the same footprint and the same spectator seating and vehicle trips (*less than significant; similar impact*). Similar to the proposed project, Alternative 3 would also be subject to relevant fire and building codes, CBPs, and the wildfire protection plan for the project, as described in Section 4.7, Wildfire. These requirements would help reduce impacts related to wildfire risk.

6.4.4.3 ABILITY TO MEET PROJECT OBJECTIVES

Alternative 3 would meet or partially meet some of the identified project objectives but would not meet other project objectives (see Table 6-3). Specifically, Alternative 3 would not support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports because it would limit the amount of available times the women could hold competitive games given the elimination of competitive-grade field lighting and would therefore not be equitable with men's sports facilities on campus (Objective 1). Therefore, Alternative 3 would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX. Regarding Objective 3, Alternative 3 would not meet NCAA design requirements related to competition-grade field lighting and therefore would not allow the woman's softball team to practice and compete on a NCAA compliant field.

While Alternative 3 would improve the existing recreational facility at the Cal Softball Field, it would not fully meet the needs, and enhance the experience, of the current student body and the community, with the elimination of field lighting that allows for games after dark (Objective 4). While Alternative 3 would renovate an existing recreational facility, the university would likely continue to pursue the development of a NCAA and Title IX compliant field in the future at another site and therefore Alternative 3 would not meet Objective 6, as it would not make the highest and best use of the project site such that limited land resources are used most efficiently.

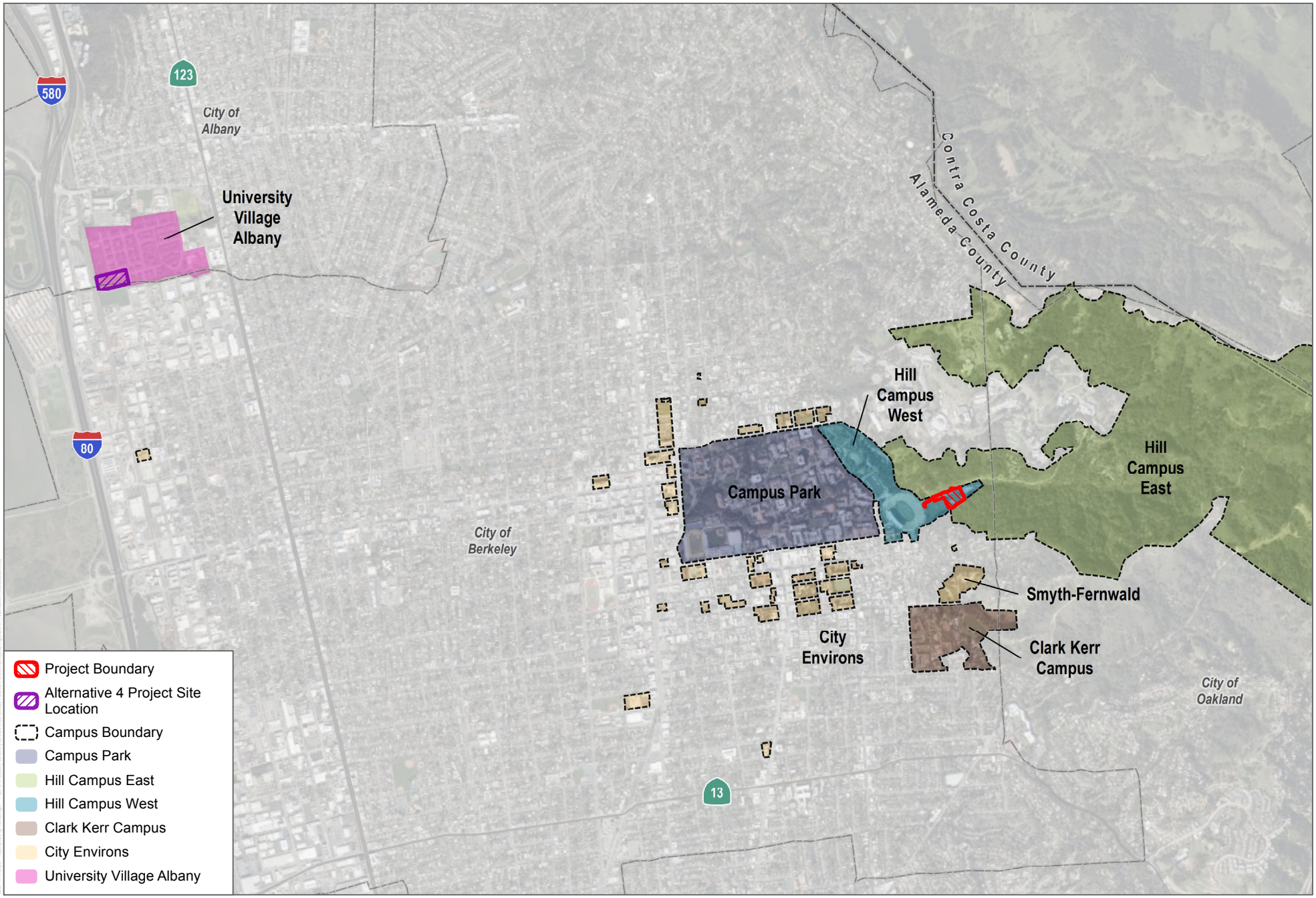
Alternative 3 would meet Objective 2, as it would avoid siting a new softball field in or near the central campus and the renovated field on the existing site would continue to be close enough to provide student athletes with walkable access to campus academic and athletic resources. Alternative 3 would also meet Objective 5 as it would upgrade existing infrastructure surrounding the Cal Softball Field, including ADA access, sidewalks, transit stops, and utilities.

6.4.5 ALTERNATIVE 4: COMPREHENSIVE PROJECT ALTERNATIVE

6.4.5.1 DESCRIPTION OF ALTERNATIVE 4

Alternative 4 consists of the development of the proposed project at the University Village Albany on the site of an existing softball and multi-purpose recreational field. As shown in Figure 6-1, the site is located in the City of Albany, in an area owned by the Regents of the University of California called University Village Albany. The site is located in the southwestern corner of the University Village and is bounded by Red Oak Avenue and the University Village Community Garden on the north, Red Oak Avenue on the east, a Codornices Creek and the Lower Codornices Path on the south, and railroad tracks on the west. The site is fenced and composed of turf grass, a softball infill dirt area with backstop, and a small storage building used for field equipment. The site does not currently have field lighting. Residential development and on-street parking are located to the north and west of the site. Major transit services are located along San Pablo Avenue approximately 2,000 feet to the east of the site with several bus stops with more limited service also provided along Red Oak Avenue within University Village. The North Berkeley BART station is located approximately 2,500 feet to the east of San Pablo Avenue for accessibility to AC Transit services and approximately 1 mile from the Alternative 4 site. Public parking is limited in proximity to the site with the nearest public parking located approximately 1 mile to the south along Fourth Street.

Alternative 4 would involve the development of a competition-grade softball field with all proposed project components with the exception that a wildfire protection plan under the Long Range Development Plan (LRDP) EIR Mitigation Measure WF-2a. A wildfire protection plan would not be implemented under Alternative 4, as the site is located outside of the Very High Fire Hazard Severity Zone. It is assumed that similar access improvements as proposed for the project would be required at this site location, including but not necessarily limited to, drop-off and turn-around location(s), limited new parking, and service and emergency vehicle access. A TDM plan would be implemented under Alternative 4, similar to the proposed project, which could include the implementation of a game-day shuttle service between public parking along Fourth Street and transit stops along San Pablo Avenue and the site. Similar to the proposed project, new connections to surrounding utilities would be required. Stormwater improvements in accordance with the Municipal Separate Storm Sewer System (MS4) stormwater guidelines, would be implemented similar to the proposed project, to provide for the on-site treatment of stormwater from any net increase in impervious surface on the site. The Codornices Creek and the Lower Codornices Path on the south side of the site would be retained and not encroached upon and no new outfalls into the creek would be installed with Alternative 4.



SOURCE: Bing Maps 2022, US Berkeley 2018

DUDEK

0 1,250 2,500 Feet

FIGURE 6-1

Alternative 4 Site Location - University Village Albany

UC Berkeley Cal Softball Field Renovation Project

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6.4.5.2 IMPACT ANALYSIS

The impact analysis provided in this section includes information to establish the environmental setting at the Alternative 4 site at University Village at Albany. This environmental setting supports the assessment of potential environmental impacts associated with Alternative 4.

AESTHETICS

Environmental Setting

The Alternative 4 site, which is currently used for recreational purposes, is visually characterized by surrounding multi-family residential development to the north and east. The site is within University Village Albany that has "master planned" architectural style consisting mostly of three-story apartments and townhomes for UC Berkeley students with families. Views from University Village generally take in Albany Hill, to the north, and the distant East Bay Hills, with filtered views west to the Bay. Albany Hill is identified as visually important not only because it is a major topographic landmark but because the hill itself affords panoramic views across Albany, Berkeley, Richmond, El Cerrito and San Francisco Bay; however, views on the south slopes in the direction of the Alternative 4 site face the Bay, the freeway and racetrack, and points south, and the south side of the hill is mostly urbanized (City of Albany 2015). Given the above, for the purposes of this analysis, Albany Hill is considered a scenic vista.

The City of Berkeley General Plan lists significant views as views toward the Bay, the Berkeley Hills, and significant landmarks such as the Campanile on the University of California Berkeley campus, the Golden Gate Bridge, and Alcatraz Island (City of Berkeley 2002). While views toward the Bay are in the direction of the Alternative 4 site, University Village Focused EIR indicates that University Village is not located within any view corridors or in proximity to scenic resources listed in the West Berkeley Plan (part of the City of Berkeley's General Plan) (City of Berkeley 1993); and is not situated within the viewshed or proximity of any officially designated State scenic highway (UC Berkeley 2004a and 2004b). However, the University Village Focused EIR identifies Codornices Creek, located south of the site, as a potential visual resource, given that the City of Berkeley General Plan identifies it as such (UC Berkeley 2004a and 2004b).

Existing sources of nighttime light in and around Albany, where the Alternative 4 is located, include streetlights, parking lot lighting, building lighting, illuminated signs, vehicle headlamps, and interior lighting visible through windows. Billboard illumination has been an issue in the City in the recent past, with concern about the potential effects on residences near I-80. Existing sources of glare also include those common to urban areas, such as reflection of sunlight and artificial light off of windows, buildings and other surfaces in the day, and glare from inadequately shielded and improperly directed light sources at night. Light and glare levels in the City of Albany are fairly typical of an urban environment (City of Albany 2015).

View protection is addressed in the Albany Municipal Code. The zoning regulations include standards for height and bulk which preserve views, maintain light and air, and protect aesthetic quality. The Zoning Code also includes special provisions for hillsides established to protect scenic beauty and preserve significant ridgeline or bay views from Albany Hill. Performance standards addressing light and glare, including the design of exterior lighting fixtures, have been incorporated into the Municipal Code (City of Albany 2015).

Impacts

Alternative 4 impacts related to scenic vistas would be less than significant, similar to the proposed project. While the proposed Alternative 4 softball field could be visible from Albany Hill, a scenic vista, the proposed softball field

would not block or otherwise degrade views from this vantage point, given that it would be similar in height and bulk as surrounding development at University Village and surrounding areas (*less than significant; similar impact*).

Regarding scenic quality, the Alternative 4 site is considered an urban area given that the City of Albany and the City of Berkeley have a combined population of well over 100,000 persons, based on definitions in Public Resources Code 21071, and therefore impacts on scenic quality are based on whether there would be a conflict with applicable zoning and other regulations governing scenic quality. UC Berkeley is the only agency with land use jurisdiction over programs and projects proposed on UC Berkeley property, including a proposed softball field on the Alternative 4 site at University Village Albany. Therefore, applicable regulations governing scenic quality include UC Berkeley policies and plans, including implementation of UC Berkeley Design Review, Physical Design Framework, Campus Design Standards, and CBPs, as applicable to Alternative 4. Similar to the proposed project, Alternative 4 would be subject to UC Berkeley's Design Review, Physical Design Framework, Campus Design Standards, and relevant CBPs, as described in Section 4.2, Aesthetics. These requirements would help reduce impacts to visual resources as part of the design review process. Additionally, while UC Berkeley is not subject to local plans, policies, and regulations, Alternative 4 would not conflict with local policies related to scenic quality, given that the proposed softball field at this site would maintain and protect Codornices Creek south of the site, maintain the existing recreational land use on the site, include shielded light fixtures, result in less than significant lighting and glare impacts (see below), and avoid new view blockage and/or view interruption from Albany Hill (*less than significant; similar impact*).

Similar to the proposed project, the impacts of Alternative 4 related to light and glare would also be less than significant as light and glare thresholds would not be exceeded given that the same competition field lights evaluated in the lighting analysis for the proposed project (see Appendix D) would be installed with this alternative. However, given that there currently are no field lights of any kind at the Alternative 4 site the impact would be greater compared to the proposed project (*less than significant; greater impact*).

BIOLOGICAL RESOURCES

Environmental Setting

The Alternative 4 site is primarily composed existing recreational fields that are considered urban/developed land cover. The recreational fields have been physically altered to the point where native vegetation is no longer present. Some ornamental trees and shrubs have been planted surrounding the site that have the potential to provide for urban-adapted wildlife. Parking areas to the north and east of the site are paved with impermeable surfaces that cannot support vegetation and have limited habitat value for wildlife. Areas to the west of the site are also disturbed by railway tracks and operations. The site is bordered to the south by Lower Cordonices Path and Cordonices Creek. Codornices Creek is an urbanized stream that flows along the southern border of the property. The creek supports various types of riparian and wetland vegetation along its banks and within its channel, and also qualifies as jurisdictional waters of the United States (UC Berkeley 2004a and 2004b). Special-status wildlife species that could potentially occur in the adjacent Codornices Creek and associated riparian habitat include central coast steelhead, northern harrier, white tailed kite, coopers hawk, and sharp-shinned hawk, and western pond turtle; no special-status plants species are expected to occur (UC Berkeley 2004a and 2004b). Winter colonies of Monarch butterflies have been observed at the Village creek site south of the Gill Tract at the University Village Albany. The site of winter colonies at the Village creek aggregation area is located northeast of the University Village Albany, while the Alternative 4 site is located southwest of the University Village Albany. Large groups of Monarch butterflies have also been observed in the fall and winter in eucalyptus groves near Albany Hill and in Richmond to the northwest (UC Berkeley 2004a and 2004b).

Impacts

Alternative 4 would result in the same proposed project features but these features would be located at the University Village Albany existing softball field, located adjacent to Codornices Creek to the south. Alternative 4 would not encroach upon Cordornices Creek and therefore any potential impacts of Alternative 4 would be indirect impacts.

The impacts of the proposed project on San Francisco dusky-footed woodrat would be avoided, as woodrat is not present on the Alternative 4 site and was not previously identified to Codornices Creek to the south. As Alternative 4 would avoid work within Codornices Creek and would implement a Stormwater Pollution Prevention Plan, it would avoid direct and indirect impacts to central coast steelhead and western pond turtle. Similar to the proposed project, Alternative 4 could result in disturbance to nesting birds in ornamental trees on the Alternative 4 site or within riparian vegetation along Cordornices Creek if construction is initiated during the nesting season. With the implementation of university CBP BIO-1, Alternative 4 would not have a substantial adverse effect on special-status birds, similar to the proposed project. Overall, Alternative 4 impacts related to special-status species would be reduced as compared to the proposed project, as it would avoid impacts to San Francisco dusky-footed woodrat and the need to implement MM BIO-1 (*less than significant*) but would have similar operational night lighting (dusk to 10 p.m.) and noise impacts.

Alternative 4 impacts related to riparian habitat and other sensitive natural communities, state or federally protected wetlands, and wildlife movement and native wildlife nursery sites would also be less than significant, similar to the proposed project, as Alternative 4 would avoid work in Cordornices Creek but would have similar operational night lighting and noise impacts (*less than significant; similar impact*).

CULTURAL RESOURCES

Environmental Setting

Based on archival and on-site reconnaissance, archaeological resources are not expected to exist within University Village Albany (UC Berkeley 2004a and 204b). A prior historic district called the UC Experiment Station District, located on the eastern side of University Village Albany, was eligible for the California Register of Historic Resources (CRHR) (UC Berkeley 2004a and 204b) prior to demolition.

Impacts

Alternative 4 would result in the same proposed project features but these features would be located at the University Village Albany existing softball field. There are no existing built environment historic resources on or adjacent to the Alternative 4 site. Therefore, Alternative 4 impacts related to built environment historic resources would be less than significant and similar to the proposed project (*less than significant; similar impact*).

While archaeological resources are not expected at University Village Albany, there remains a potential that such resources could be discovered during construction. Similar to the proposed project, Alternative 4 impacts related to archaeological resources and tribal cultural resources would be reduced to less than significant with the implementation of MM CUL-2 and this impact would be similar with this alternative given that the facility footprint would be similar (*less than significant with mitigation; similar impact*). Alternative 4 impacts related to human remains would be less than significant with the implementation of the relevant CBP described above and this impact would also be similar with this alternative given that the facility footprint would be similar (*less than significant; similar impact*).

NOISE

Environmental Setting

The Alternative 4 site is surrounded on two sides by University Village Albany multi-family residential uses and residential streets to the north and east, the Lower Codornices Path and Codornices Creek to the south, and a railroad track, industrial and commercial uses, and State Highway 580 to the west. The residences are considered sensitive noise receptors and the closest residences are approximately 85 feet away from the site.

Impacts

Alternative 4 would result in the same proposed project features but these features would be located at the University Village Albany existing softball field. Alternative 4 impacts related to the generation of substantial temporary increase in ambient noise levels during construction would be the same as for the proposed project; however, under Alternative 4 it is expected that the implementation of MM NOI-1 would reduce the construction noise levels below the applicable standard given the flat topography of the site, which would allow for the effective use of a perimeter construction noise barrier and other noise control methods, if needed to reduce construction noise exposure levels (*less than significant with mitigation*). Therefore, Alternative 4 would avoid the significant and unavoidable construction noise impact.

Alternative 4 impacts related to the generation of substantial permanent increase in ambient noise levels in the vicinity in excess of standards due to noise from the PA system and spectator noise would be less than significant, similar to the proposed project. While the existing ambient noise levels may be greater given the urban setting of the Alternative 4 site, the existing site does not have existing spectator seats and therefore the net increase in the PA system and spectator noise could be similar at this site (*less than significant; similar impact*). Similar to the proposed project, Alternative 4 would also be subject to relevant CBPs. These requirements help reduce impacts associated with temporary and permanent noise generation from proposed projects.

Alternative 4 impacts related to construction and operational vibration would be less than significant and would be similar compared to the proposed project, given that this alternative would have the same proposed project features (*less than significant; similar impact*).

TRANSPORTATION

Environmental Setting

The Alternative 4 site is bounded by Red Oak Avenue and the University Village Community Garden on the north, Red Oak Avenue on the east, the Lower Codornices Path on the south, and railroad tracks on the west. Multi-family residential development and on-street parking are located to the north and west of the site. AC Transit services are located along San Pablo Avenue approximately 2,000 feet to the east of the site with several bus stops with more limited service provided along Red Oak Avenue within University Village. The North Berkeley BART station is located approximately 2,500 feet to the east of San Pablo Avenue for accessibility to AC Transit services and approximately 1 mile from the Alternative 4 site. University Village Albany is located within a Transit Priority Area (TPA), as defined in Section 4.6, Transportation. The University Village roadway system is improved with pedestrian sidewalks and bicycle lanes. University Village also contains several pathways that provide pedestrians and bicyclists paths of travel separated from roadways and vehicles. These pathways connect residents and visitors to and from outdoor amenities and parks within University Village. Public parking is available at several lots located less than 1 mile south of the Alternative 4 site on Fourth Street and Fifth Street.

Impacts

Alternative 4 would result in the same proposed project features but these features would be located at the University Village Albany existing softball field. Alternative 4 impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, and bicycle facilities would be less than significant and the impact would be somewhat greater compared to the proposed project. While transit services and bicycle lanes are available near the site and the TDM plan could include a game-day shuttle service between public parking along Fourth Street and Fifth Street and transit stops along San Pablo Avenue and the site, a new facility at Alternative 4 site would result in a greater net increase in spectator attendance than the proposed project, as the site does not currently have spectator seats (*less than significant; greater impact*). Alternative 4 impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system related to pedestrian facilities would be less than significant and would not require implementation of MM TRA-1 or a similar measure to provide for pedestrian safety on access routes to the Alternative 4 site, as University Village Albany is improved with pedestrian sidewalks and contains several pathways that provide pedestrians paths of travel separated from roadways and vehicles (*less than significant*).

Alternative 4 would avoid the significant and unavoidable impact of the proposed project related to VMT, as the Alternative 4 site is located in a TPA and it is expected that spectators would take advantage of available transit services or use other alternative modes of travel given that public parking is limited. Major transit services are located along San Pablo Avenue approximately 2,000 feet to the east of the site with several bus stops with more limited service also provided along Red Oak Avenue within University Village Albany. Public parking is limited in proximity to the site with the nearest public parking located approximately 1 mile to the south along Fourth Street. Therefore, VMT impacts of Alternative 4 are presumed to be less than significant given the location of the Alternative 4 site in a TPA (*less than significant*).

Alternative 4 impacts related to hazards due to geometric design features or incompatible uses, and emergency access would be less than significant, similar to the proposed project, as the proposed softball field at this site would be required to provide for adequate access for emergency vehicles and safe access into the facility for spectators and participants (*less than significant; similar impact*). Relevant university CBPs would be implemented as part of the proposed project to reduce both construction and operational transportation impacts.

WILDFIRE

Environmental Setting

The Alternative 4 site is primarily composed of urban/developed land cover. Most of the site is composed of an existing softball and multi-purpose recreational field. The fields and site are surrounded by landscaped trees and shrubs as well as riparian vegetation associated with Codornices Creek. However, the project site is within a Local Response Area (LRA), designated as a Non-Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CALFIRE 2008). Areas surrounding the site in University Village Albany are developed with residential uses. The project site is relatively flat and located within an urbanized area that does not contain a significant risk of flooding, landslides, slope instability, or drainage changes.

Impacts

Alternative 4 would result in the same proposed project features but these features would be located at the University Village Albany existing softball field. Alternative 4 impacts related to impairment of emergency response or evacuation plan, exacerbation of wildfire risks, fire risks associated with installation or maintenance of

infrastructure, and exposure of people or structures to significant environmental risks would be less than significant. Alternative 4 impacts would be reduced as compared to the proposed project given that the facility would be located in a Non-Very High Fire Hazard Severity Zone and therefore would have reduced risks associated with wildfire (*less than significant; lesser impact*). Similar to the proposed project, Alternative 4 would also be subject to relevant fire and building codes and CBPs but would not require a wildfire protection plan given its location. The applicable requirements, however, would help reduce impacts related to wildfire risk.

6.4.5.3 ABILITY TO MEET PROJECT OBJECTIVES

Alternative 4 would not meet or would partially meet most of the identified project objectives (see Table 6-3). Specifically, Alternative 4 would not support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports, given the distance from the main Campus Park, as such a location would not be equitable with men's sports facilities on campus (Objective 1). Therefore, Alternative 4 would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX.

A softball field at the University Village Albany under Alternative 4 would not be close enough to provide student athletes with walkable access to campus academic and athletic resources and therefore this alternative would not meet Objective 2. While Alternative 4 would improve an existing recreational facility to meet the needs, and enhance the experience, of the current student body and the community, given the distance of the University Village Albany to the main Campus Park, Alternative 4 would only partially meet Objective 4. Alternative 4 would not meet Objective 5 as it would not upgrade existing infrastructure surrounding the Cal Softball Field.

While Alternative 4 would renovate an existing recreational facility and avoid siting a new softball field in or near the central campus, the university would likely continue to pursue the development of a Title IX compliant field in the future at another site and therefore Alternative 4 would not meet Objective 6, as it would not make the highest and best use of the project site such that limited land resources are used most efficiently.

Alternative 4 would meet Objective 3, as the renovated facility would meet all NCAA design requirements, similar to the proposed project.

6.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines (Section 15126.6[a]) requires that an EIR's analysis of alternatives identify the "environmentally superior alternative" among all of those considered. In addition, Section 15126.6(e)(2) states that if the environmentally superior alternative is the No Project Alternative, the EIR must also identify an environmentally superior alternative among the other alternatives. Furthermore, Public Resources Code Sections 21002 and 21081 require lead agencies to adopt feasible mitigation measures or feasible alternatives in order to substantially lessen or avoid otherwise significant adverse environmental effects, unless specific economic, legal, social, technological, or other conditions make such mitigation measures or alternatives infeasible.

Table 6-2 presents a comparison of project impacts between the Proposed Project and the alternatives. Alternative 1 (No Project Alternative) would avoid all identified impacts of the proposed project, including the significant and unavoidable temporary construction noise impact and the significant and unavoidable VMT impact but would not meet any of the project objectives. While Alternative 4 (Comprehensive Project at University Village Albany) would avoid the significant and unavoidable temporary construction noise impact and the significant and unavoidable VMT impact, it would result in increased impacts in some other categories such as aesthetics and

transportation. While Alternative 3 (No Games After Dark Alternative) would reduce some impact categories, it would not avoid the significant and unavoidable temporary construction noise impact and the significant and unavoidable VMT impact. Alternative 2 (Reduced Project Alternative) would have the greatest number of reduced impacts, would reduce but not avoid the significant unavoidable temporary construction noise impact of the proposed project, and would avoid the significant and unavoidable VMT impact. Therefore, Alternative 2 would be the environmentally superior alternative. However, Alternative 2 would not comply with NCAA standards (seating for 1,500 spectators) and would not meet the project's fundamental purpose to provide an equitable facility for women's softball in order to ensure compliance with Title IX and would not meet a number of other project objectives.

TABLE 6-2. COMPARISON OF ENVIRONMENTAL IMPACTS FROM THE ALTERNATIVES

Section # and Topic	Proposed Project	Alternative 1 No Project*	Alternative 2 Reduced Project	Alternative 3 No Games After Dark	Alternative 4 Comprehensive Project at University Village Albany
4.2 Aesthetics (Scenic Vistas and Scenic Quality)	LS	NI	LS↓	LS↓	LS
4.2 Aesthetics (Light and Glare)	LS	NI	LS	LS↓	LS↑
4.3 Biological Resources (Special-Status Species)	LMS	NI	LMS↓	LMS↓	LS
4.3 Biological Resources (Other Impacts)	LS	NI	LS↓	LS↓	LS
4.4 Cultural Resources (Historic Built Environment Resources)	LS	NI	LS	LS	LS
4.4 Cultural Resources (Archaeological and Tribal Cultural Resources)	LSM	NI	LSM↓	LSM	LSM
4.4 Cultural Resources (Human Remains)	LS	NI	LS↓	LS	LS
4.5 Noise (Construction)	SU	NI	SU↓	SU	LSM
4.5 Noise (Operations)	LS	NI	LS↓	LS	LS
4.5 Noise (Vibration)	LS	NI	LS↓	LS	LS
4.6 Transportation (Conflicts with Transportation System Policies; Roadway, Transit, and Bicycle Impacts)	LS	NI	LS↓	LS	LS↑
4.6 Transportation (Conflicts with Transportation System Policies; Pedestrian Impacts – Typical Events)	LSM	NI	LSM↓	LSM	LS
4.6 Transportation (Conflicts with Transportation System Policies; Pedestrian Impacts – Maximum Events)	LSM	NI	NI	LSM	LS
4.6 Transportation (Vehicle Miles Travelled)	SU	NI	LS	SU	LS
4.6 Transportation (Other Impacts)	LS	NI	LS↓	LS	LS
4.7 Wildfire	LS	NI	LS↓	LS	LS↓

Notes: NI = no impact; LS = less than significant; LSM = less than significant with mitigation; SU = significant and unavoidable; ↑ = greater; ↓ = lesser.

* While the No Project Alternative (Alternative 1) would not result in new impacts as compared to existing conditions, ongoing use and operations at the existing Cal Softball Field would continue, resulting in operational noise, lighting, vehicle trips, etc.

TABLE 6-3. ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Project Objectives	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project	Alternative 3 No Games After Dark	Alternative 4 Comprehensive Project at University Village Albany
1. Support UC Berkeley's ongoing Title IX commitment to gender equity by providing equitable facilities for women sports and improving the training and competition facilities provided to female student athletes who participate in the Cal women's softball program.	Meets Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective
2. Ensure the women's softball field is in a location with walkable access to campus academic and athletic resources.	Meets Objective	Meets Objective	Meets Objective	Meets Objective	Does Not Meet Objective
3. Meet NCAA design requirements for softball fields to accommodate the need for the Cal women's softball team to practice and compete, including evening games, on a NCAA compliant field and to host home playoff games on campus, consistent with the facilities and opportunities provided to university male student athletes. NCAA design requirements include: a. Minimum field dimensions - The outfield fences need to be 190 feet down the right and left field baselines, and 220 feet to the centerfield. b. Seating capacity - A facility with a minimum number of 1,500 seats is required to host a post-season NCAA women's softball game or tournament. The women's softball team would have to qualify for post-season play for the NCAA to consider UC Berkeley as a host for a playoff game. c. Competition-grade lighting - Lighting must meet NCAA best lighting practices for standard intercollegiate play. In accordance with the NCAA Best Lighting Practices for Softball, for Regional and National Broadcasts (NCAA 2011), lighting specifications include: i. Horizontal light levels: 100 footcandles infield/70 footcandles outfield. ii. Vertical light levels: 1. 70 footcandles infield/40 footcandles outfield to high home plate camera. 2. 70 footcandles infield/40 footcandles outfield to 1st baseline camera. 3. 70 footcandles infield/40 footcandles outfield to 3rd baseline camera. iii. Grid spacing: 20 feet x 20 feet.	Meets Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective	Meets Objective

TABLE 6-3. ABILITY OF ALTERNATIVES TO MEET PROJECT OBJECTIVES

Project Objectives	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project	Alternative 3 No Games After Dark	Alternative 4 Comprehensive Project at University Village Albany
4. Improve the existing recreational facility at the Cal Softball Field to meet the needs, and enhance the experience, of the current student body and the community. This aligns with Berkeley campuswide land use objective to "Modernize and adapt existing buildings through strategic renovation projects that support current and future needs and pedagogies, and to improve space utilization and efficiency. Take advantage of these opportunities to maximize long-term flexibility."	Meets Objective	Does Not Meet Objective	Partially Meets Objective	Partially Meets Objective	Partially Meets Objective
5. Upgrade existing infrastructure surrounding Cal Softball Field, including ADA access, sidewalks, transit stops, and utilities, in a cost-effective manner as project site acreage and other site constraints allow.	Meets Objective	Does Not Meet Objective	Meets Objective	Meets Objective	Does Not Meet Objective
6. Prioritize renovation of existing recreational facilities to ensure adequate land remains available in the central campus for academic or research buildings. This aligns with the Berkeley campuswide land use objective to "Make the highest and best use of each site to employ limited land resources most efficiently. To the extent possible, prioritize utilization of infill or undeveloped sites for facility development to accommodate program needs, taking into consideration site setting and context, adjacent uses, and coordination with existing landscape, infrastructure, and mobility systems.	Meets Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective	Does Not Meet Objective

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