

Cal Softball Field Renovation Project

Final Environmental Impact Report

June 2024 - State Clearinghouse Number: 2022110035

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1. Introduction

The Board of Regents of the University of California (the Regents), as the lead agency, and in cooperation with the University of California, Berkeley (UC Berkeley or university), prepared this final environmental impact report (Final EIR) in accordance with the requirements of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (Section 15132). This Final EIR presents comments received on the Draft EIR for the proposed UC Berkeley Cal Softball Field Renovation Project (project or proposed project), responses to those comments, and revisions to the Draft EIR resulting from responses to comments. The Draft EIR identifies significant impacts associated with the proposed project, identifies and considers alternatives to the proposed project, and identifies mitigation measures to avoid or reduce potentially significant environmental impacts. This Final EIR, together with the Draft EIR, constitutes the complete EIR for the proposed project.

1.1 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. As such, competitive games would increase somewhat from approximately 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, which are existing uses at the project site. Non-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.

1.2 PURPOSE OF THE FINAL EIR

In accordance with CEQA Guidelines Sections 15086 and 15087, CEQA requires the lead agency that has prepared a Draft EIR to consult with and obtain comments from responsible and trustee agencies that have jurisdiction by law with respect to the project, and to provide the public with an opportunity to comment on the Draft EIR. Sections 15088(a) and (c) of the CEQA Guidelines state that the lead agency shall evaluate comments on environmental issues received from persons who reviewed the Draft EIR and shall prepare written responses to comments raising significant environmental issues. The Regents will review all comments, including those that do not warrant a response under CEQA, before considering certification of the Final EIR or approval of the proposed project.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 SCOPING AND NOTICE OF PREPARATION

In accordance with CEQA Guidelines Section 15082, a Notice of Preparation (NOP) for the Draft EIR was circulated for a 33-day scoping 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 EIR was held on November 17, 2022, conducted online via a live video feed. All comments on environmental issues received during the NOP public comment period and at the scoping meeting were considered in the preparation of the Draft EIR.

1.3.2 DRAFT EIR AND PUBLIC REVIEW

The 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 Wednesday December 13, 2023 and ending Monday, January 29, 2024. The Draft EIR was available for public review as following:

- Online at: <https://capitalstrategies.berkeley.edu/environmental-review>
- A printed copy of the Draft EIR was available for public review during the comment period at the following locations:
 - 1 A&E, Berkeley, CA-94720 (by appointment only)
 - College of Environmental Design Library, 210 Bauer Wurster Hall, Berkeley, CA 94720

1.3.3 FINAL EIR AND CONSIDERATION OF PROJECT APPROVAL

Following the Draft EIR public review period, this Final EIR was prepared, which includes written comments on the Draft EIR received during the review period and UC Berkeley's responses to those comments. The Final EIR also provides any revisions to the Draft EIR made in response to agency or public comments. Revisions to the Draft EIR are provided in Chapter 2, Revisions to the Draft EIR, of this Final EIR. The comments and responses are provided in Chapter 3, Comments and Responses, of this Final EIR.

The Final EIR will be presented to the Regents' public hearing on July 17 to 18, 2024, at which the Regents will advise on approval and certification of the EIR.

2. Revisions to the Draft EIR

This chapter contains text revisions to the Draft EIR that were made in response to comments from agencies, organizations, and the public as well as staff-directed changes. These text revisions include typographical corrections, insignificant modifications, and amplifications and clarifications of the Draft EIR. In each case where a revision has been made, the revised page and location on the page is presented, followed by the textual, tabular, or graphical revision. Underlined text represents language that has been added to the EIR; text with ~~strike through~~ represents language that has been deleted from the Draft EIR. None of the revisions to the Draft EIR constitutes significant new information as defined in CEQA Guidelines Section 15088.5; therefore, the Draft EIR does not need to be recirculated.

CHAPTER 1, EXECUTIVE SUMMARY

Minor edits are made to Section 1.3.2, Project Overview, on page 1-3 of the Draft EIR as follows:

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 approximately 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.

Minor edits are made to Table 1-1, Summary of Project Impacts, on page 1-10 of the Draft EIR as follows:

TABLE 1-1. SUMMARY OF PROJECT IMPACTS

Impact	Level of Significance Prior to Mitigation	Mitigation Measures	Level of Significance After Mitigation
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	<u>None</u> Implement MM CUL-1 (see Impact CUL-2 above for a description of this measure).	Less than Significant

CHAPTER 2, INTRODUCTION

Minor edits made to Chapter 2, Introduction, on page 2-1 of the Draft EIR as follows:

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 Regents. ~~UC Berkeley Chancellor.~~

Minor edits are made to Section 2.1, Project Overview, on page 2-3 of the Draft EIR as follows:

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 approximately 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.

Minor edits are made to Section 2.3.3, Final EIR and Consideration of Project Approval, on page 2-6 of the Draft EIR as follows:

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~~ responsibility of the Regents pursuant to the University’s delegation policies, who ~~is~~ are then responsible for reviewing and considering the CEQA document at the time of ~~her~~ their decision. Prior to making a decision to approve the project, the ~~Chancellor~~ Regents must certify that ~~she has~~ they have 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~~ Regents finds that the Final EIR is “adequate and complete,” ~~she~~ they 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~~ Regents in conjunction with the Final EIR.

The ~~Chancellor~~ Regents 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~~ Regents would have to adopt a statement of overriding considerations if ~~she~~ they determines that economic, legal, social, technological, or other benefits of the proposed project outweigh the unavoidable, significant effects on the environment.

CHAPTER 3, PROJECT DESCRIPTION

Minor edits are made to Section 3.2, Project Overview, on page 3-2 of the Draft EIR as follows:

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 approximately 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.

Minor edits are made to Section 3.6.4.1, Softball Program Description, on page 3-26 of the Draft EIR as follows:

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 (approximately 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.

2. REVISIONS TO THE DRAFT EIR

Minor edits are made to Table 3-2 on page 3-27 of the Draft EIR as follows:

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	8:00 a.m. – 7:00 p.m. 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	<u>Softball-related event rentals</u> <u>Special events/rentals</u>	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	<u>Approximately 15–20 games on weekdays and weekends; no infrequent games after dark</u>	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 ¹	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	8:00 a.m. – 7:00 p.m. 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	<u>Softball-related event rentals</u> <u>Special events/rentals</u>	50 users	50 users	Varies	Varies
16	Maintenance	4 users	4 users	Monday–Friday	8:00 a.m.–11:00 a.m.

Notes:

¹ UC Berkeley has only hosted post-season games at the Cal Softball Field once in 2012. Under both existing and proposed conditions, post-season play is infrequent, as the team must qualify for the post-season. To provide for a conservative analysis, the Draft EIR assumes that the proposed project could result in a net increase in up to four post-season games. However, there is nothing about the proposed project that would result in an increase in post-season games, given the requirement to qualify for the post-season and therefore the same number of post-season games could also take place under existing conditions.

CHAPTER 4, ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

SECTION 4.2, AESTHETICS

Minor text edits are made to Subsection 4.2.3.2, Impact Analysis, under “Areas of No Impact” on page 4.2-17 of the Draft EIR.

Light and Glare (Standard of Significance D)

In response to public comments received on the Draft EIR, an analysis of skyglow is provided in Final EIR Chapter 3, Responses to Comments, and Final EIR Appendix C. The analysis includes a calculation of Upward Flux Ratio (UFR), a metric used for evaluating incremental effect on sky glow, and demonstrates that UFR would be reduced with the proposed project, as compared to existing conditions, and would not exceed the threshold of significance identified by the commenter. Therefore, the proposed project would have *no impact* on skyglow.

SECTION 4.3, BIOLOGICAL RESOURCES

Minor text edits are made to Subsection 4.3.3.2, Analytical Methods, under “Noise” on page 4.3-24 of the Draft EIR.

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 approximately 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.

Minor text edits are made to Subsection 4.3.3.2, Analytical Methods, under “Lighting” on pages 4.3-25 through 4.3-26 of the Draft EIR.

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 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 approximately 15 to 20 games per year under existing conditions), 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.

Minor text edits are made to Impact BIO-1, under “Special-Status Birds and Bats” on page 4.3-29 of the Draft EIR.

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 approximately 15 to 20 games per year under existing conditions) 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.

Minor text edits are made to Impact BIO-1, under “Special-Status Birds and Bats” on page 4.3-30 of the Draft EIR.

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 approximately 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*.

Minor text edits are made to Impact BIO-4, under “Operations” on page 4.3-36 of the Draft EIR.

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 approximately 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*.

SECTION 4.4, CULTURAL AND TRIBAL CULTURAL RESOURCES

Minor text edits are made to Subsection 4.4.3.3, Impact Analysis, under Impact CUL-1 on page 4.4-22 of the Draft EIR.

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 approximately 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.

Minor text edits are made to Subsection 4.4.3.3, Impact Analysis, under Impact CUL-5 on pages 4.4-27 and 4.4-28 of the Draft EIR.

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. However, the proposed project would not contribute to such cumulative impacts, as any identified cultural and/or tribal cultural resources associated with cumulative development would not be coincident with any previously unknown cultural resources or tribal cultural resources identified in the API for the proposed project, as other cumulative projects are not located within the proposed project's API for cultural and/or tribal cultural resources (Figures 4.4-1).

~~With the implementation of MM-CUL-1, Therefore,~~ 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*.

SECTION 4.5, NOISE

Minor text edits are made to Subsection 4.5.3.3, Impact Analysis, under Impact NOI-1 on page 4.5-31 of the Draft EIR.

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 approximately 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.

SECTION 4.6, TRANSPORTATION

Minor text edits are made to Subsection 4.6.3.3, Impact Analysis, Impact TRA-1 on page 4.6-24 of the Draft EIR.

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 and~~ all construction traffic would adhere to relevant restrictions, including City of Berkeley weight limitations 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.

SECTION 4.7, WILDFIRE

Minor text edits are made to Subsection 4.7.3.3, Impact Analysis, Impact WF-1 on page 4.7-23 of the Draft EIR.

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 approximately 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.

CHAPTER 5, OTHER CEQA CONSIDERATIONS

Minor text edits are made to Subsection 5.1, Impacts Found Not to be Significant, on page 5-1 of the Draft EIR.

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, and utilities and service systems, ~~and wildfire~~.

Footnote 1 is edited within Subsection 5.1.5, Greenhouse Gas Emissions, on page 5-5 of the Draft EIR.

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 by 2045, with the removal of remaining emissions thereafter, versus an 85% reduction relative to 1990 GHG emission levels established by AB 1279. Under AB 32 and the prior Sustainable Practices Policy, campuswide emissions were required to be reduced to 1990 levels or lower by 2020, which was achieved by UC Berkeley in 2014. 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.

CHAPTER 6, ALTERNATIVES

An additional siting alternative is added to the second paragraph on page 6-5 of the Draft EIR as follows:

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
 - f. Edwards Stadium

A new subsection to address the additional siting alternative was added on page 6-7 of the Draft EIR as follows:

6.3.2.6 EDWARDS STADIUM

The use of the existing Edwards Stadium at the west side of Campus Park for the intercollegiate athletics (IA) softball program was determined not to be a viable siting alternative for multiple reasons. The stadium currently is used by eight intercollegiate programs for practices and competition: Men's and Women's Soccer, Men's and Women's Outdoor Track, Men's and Women's Indoor Track, and Men's and Women's Cross Country. Also, Edwards Stadium is the only 400-meter track on Cal's campus that is used by students, faculty, staff, and the community. Having a softball field at Edwards Stadium would displace Women's soccer and women's track and field with potentially no site or sites for these programs, and would open up Title IX issues for these programs that are currently consistent with Title IX. Displacement of or scheduling limitations to women's sports would be inconsistent with the University's commitment to gender equity, and Division I level performance. Also, the required footprint for Cal Softball Field would occupy a significant portion of the Edwards Stadium site thereby limiting, and likely removing, the eight intercollegiate programs and the community's ability to continue to use the site. The required footprint to support a new Cal Softball Field at the site would leave insufficient space to reconstruct track and soccer facilities for these programs. Therefore, these existing programs would then have to be relocated to a new site or sites on campus that are consistent with Title IX, thereby resulting in additional environmental impacts associated with constructing and operating additional IA facilities for these programs.

Additionally, Edwards Stadium is listed in the National Register of Historic Places. The contributing features of the historic resource include the east and west bleachers, the walls, scoreboard frame. These historical components in the stadium would limit the University's ability to meet the facility and programmatic components necessary to meet our commitment to gender equity and Title IX. Fitting the Softball programmatic elements, such as dugouts and bullpens, may have an adverse impact on the historic significance of Edwards Stadium. For these reasons, environmental impacts associated with constructing and operating a new softball athletic facility at the Edwards Stadium site and relocating and constructing new facilities for existing programs requiring relocation would be

greater, as compared to renovating the existing Cal Softball Field. Additionally, this site does not meet the project objectives of improving 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 and upgrading existing infrastructure surrounding Cal Softball Field.

CHAPTER 7, REFERENCES

The following reference is added to Draft EIR Chapter 7, References. This reference was cited in Draft EIR Chapter 4.5, Noise but the full citation was not originally provided in Chapter 7, References.

Samsung. 2021. Submittal Publication and dimension drawings. AC024MNADCH/AA. Samsung. High-Wall Evaporator, Split System.

2. REVISIONS TO THE DRAFT EIR

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3. Comments and Responses

The 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 from December 13, 2023, through January 29, 2024. To provide for review and comment on the Draft EIR, electronic copies of the document were distributed to the State Clearinghouse and UC Berkeley Capital Strategies website; physical copies of the document were distributed to the UC Berkeley A&E Building and College of Environmental Design Library. A Notice of Availability of the Draft EIR was sent to agencies and interested parties.

This chapter includes the comments received during the public review period and responses to each significant environmental issue raised during this period. Comments are presented in their original format in this Chapter of this Final EIR along with brackets in the margin to identify each comment number. Following each comment letter are responses to each bracketed comment.

3.1 LIST OF COMMENTERS

This section lists all the agencies, organizations, and people who submitted comments on the Draft EIR during the public review period. UC Berkeley hosted an online public hearing to receive verbal public comments on the Draft EIR. The online public hearing was held on January 24, 2024, starting at 5:00 p.m. via live video feed. Persons who submitted written comments are grouped according to whether they represent a public agency or individual, as well as persons who provided verbal comments at the public hearing.

For each commenter on the Draft EIR, the person's name, agency or organization as applicable, comment format (email or letter), comment date, and a commenter identifier are provided in Table 3-1. Where a commenter has included an attachment or series of attachments as a part of their comment, these are listed as well. Each comment letter and comment has been assigned an identification letter and a number as indicated below. The comments are organized and categorized by:

- A = Public Agencies
- B = Organizations
- C = Individuals

Table 3-1 lists public agencies and individuals that provided comments on the Draft EIR. Letters are organized by comment type and ordered by date received. All comments were received via email.

TABLE 3-1. COMMENTERS ON THE DRAFT EIR

No.	Name of Commenter	Date
A1	Colin Dentel-Post, Principal Planner, Alameda County Transportation Commission	January 29, 2024
B1	Dean Metzger, President, Claremont Elmwood Neighborhood Association	January 27, 2024
B2	Michael R. Lozeau, Lozeau Drury LLP	January 27, 2024
B3	Leila H. Moncharsh, President, Berkeley Architectural Heritage Association	January 29, 2024
B4	Leslie Emmington Jones, Make UC A Good Neighbor	January 29, 2024
B5	Michael R. Lozeau, Lozeau Drury LLP on behalf of the Panoramic Hill Association	January 29, 2024
C1	John Stenzel	January 28, 2024
C2	Michele Liapes	January 28, 2024

3. COMMENTS AND RESPONSES

TABLE 3-1. COMMENTERS ON THE DRAFT EIR

No.	Name of Commenter	Date
C3	Stefanie Pruegel	January 28, 2024
C4	James Isbester	January 29, 2024
C5	Janice Thomas	December 29, 2023 January 29, 2024
C6	Judi Sierra	January 29, 2024
C7	Katherine Calvert	January 29, 2024
C8	Sara Baldwin	January 29, 2024
C9	Michael Kelly	January 29, 2024

3.2 INDIVIDUAL RESPONSES

Agencies, organizations, and individuals that submitted comments on the Draft EIR are outlined above in Section 3.1, List of Commenters. Each comment letter has been bracketed to number individual comments within each letter. These bracketed letters are included in Final EIR Appendix A. This section includes verbatim comments from each letter, followed by responses to each comment. If a comment includes tables, figures and/or photographs, they are referenced in the comment and can be viewed in the bracketed letters included in Appendix A. Section 15088(a) of the CEQA Guidelines requires a lead agency to evaluate comments on environmental issues and provide written responses to all significant environmental issues. Therefore, the emphasis of the responses is on significant environmental issues raised by the commenters (CEQA Guidelines Section 15204[a]). Revisions to the Draft EIR text and figures based on these comments and responses are provided in Final EIR Chapter 2, Revisions to the Draft EIR.

Letter A1 Alameda County Transportation Commission (CTC)

A1-1 Comment. Thank you for the opportunity to comment on the UC Berkeley Cal Softball Field Renovation Project Draft EIR.

The project consists of renovating and improving the existing 40,000 square foot Cal Softball Field to meet modern safety and competition standards and to support campus compliance with Title IX of the Education Amendments of 1972 through the provision of equitable athletics facilities for male and female student athletes. The use of the softball facility would remain similar to its current uses, but the project will increase the number of spectator seats from 1,340 to 1,511, install a press box, spectator concourse, replacement competition-grade lights, restrooms, public address system, expanded playing field dimensions, team locker rooms, a ticket booth, improved training facilities, entry plaza, landscaping, sustainable design features, access and bus stop improvements, and utilities. The project will remove approximately 85 parking spaces and retain 25 parking spaces in the exiting Witte Lot. The project also includes the implementation of a game-day transportation demand management plan and a project-specific wildfire protection plan.

The project site comprises approximately 3 acres and is located on the campus of the University of California, Berkeley within the Hill Campus area. The project is bounded to the north by Centennial Drive; to the northeast by Strawberry Canyon Recreation Area; to the west by Witter Rugby Field; and to the south by a densely wooded area and the Panoramic Hill neighborhood beyond.

Response. The comment serves as an opening remark and provides a summary of the project description and location. The comment is acknowledged.

A1-2 Comment. Alameda CTC understands that UC Berkeley is constitutionally exempt from local government regulations when using property under its control and in furtherance of its educational purposes. However, since the proposed project would add vehicles to Berkeley roadways, the project sponsor has considered the City of Berkeley's transportation policies in its evaluation of whether the project conflicts with a program, policy, or plan that addresses the circulation system. Alameda CTC, the Congestion Management Agency and Transportation Improvement Authority for Alameda County, comments on projects that are likely to generate over 100 trips pm-peak trips, which are subject to review under the Land Use Analysis Program (LUAP) of the Congestion Management Program (CMP). The proposed project expansion would appear to generate over 100 additional pm-peak trips; Therefore, Alameda CTC respectfully submits the following comments:

Response. The comment recognizes that although UC Berkeley is exempt to local regulations, the project sponsor has considered the City of Berkeley's transportation policies. The comment establishes the agency's authority and reason for submitting comments on the project. This comment is acknowledged. The comment does not specifically address the analysis or impact conclusions within the Draft EIR.

A1-3 Comment. Congestion Management Program (CMP) Review

SB743 changed the metric used to evaluate the effects of a proposed land use projects on the transportation network, the County Congestion Management Program (CMP) legislation still requires project sponsors to evaluate the effects of the project on the CMP network of roads outside of CEQA. In general, project sponsors have met this requirement by producing a memorandum separate from the CEQA document and submitting it to Alameda CTC. The CMP Roadways near the project include:

- Telegraph Avenue
- Bancroft Way
- Shattuck Avenue
- University Avenue

Response. The comment describes the County CMP requirement, outside of CEQA, to evaluate effects on the CMP roadway network and provides a list of the CMP roadways adjacent to the proposed project site. As shown in the Draft EIR, the Proposed Project would not always generate enough weekday PM peak hour trips to require CMP analysis or that a separate memorandum be prepared. As indicated in Table 4.6-2 of the Draft EIR, the proposed project would produce approximately 12 daily trips during typical weekday use (non-game days). As noted by the commenter, a CMP analysis is required for projects that are expected to generate over 100 weekday PM peak trips. While during the typical event scenario, the proposed project would produce more than 100 trips, these would not necessarily occur during the weekday PM peak period (typically 4:00 p.m. – 6:00 p.m.). Many UC Berkeley softball matches occur on weekends or would start or finish outside of the weekday PM peak period. The instances in which the proposed project would generate over 100 weekday PM peak hour trips would occur on average approximately six times per year. Since the proposed project would not be generating 100 weekday PM peak hour trips per day on a regular basis, no revision is required.

3. COMMENTS AND RESPONSES

A1-4 Comment. Use of Countywide Travel Demand Model

On page 4.6-33, the DEIR states that the Alameda CTC Travel Demand Model may not be capable of analyzing a sporting event that would vary in intensity and which provides a small number of regional vehicle trips. As a result, estimation of VMT generated by project was performed qualitatively per Section 15064.3 Subdivision (b)(3) of the OPR Technical Advisory. While the analysis is conservative, the project impact is considered significant and unavoidable, even with the implementation of mitigation measures.

Response. The comment summarizes the VMT analysis and impact conclusion within Draft EIR Section 4.6, Transportation. This comment is acknowledged. The comment does not specifically address the merits of the analysis or impact conclusions within the Draft EIR.

A1-5 Comment. Transportation Demand Management Program

Alameda CTC appreciates that the project sponsor would keep on implementing University Continuing Best Practices during the construction and operations of the project as stated in Appendix B: University Continuing Best Practices, which includes air quality and transportation best practices that would help increase the use of alternative modes of transportation to access the project on game days.

Response. The comment acknowledges that the project would implement Continuing Best Practices. This comment is acknowledged.

A1-6 Comment. Bike and Pedestrian Plans

The City of Berkeley is home to several Countywide Bikeways Network corridors in the vicinity of the project: Bancroft, Telegraph, Hillegass, and Milvia. The Alameda CTC Commission has adopted a policy requiring bike infrastructure on the Countywide Bikeways Network and funded by Alameda CTC discretionary sources to meet an All Ages and Abilities (AAA) standard. This new standard provides heightened levels of safety for bicycle riders of all skill levels.

Alameda CTC is pleased to learn that the project sponsor will improve pedestrian access to the project as stated on page 4.6-29. These improvements include: Replacing of missing bollards along the stadium side for the road, implementation of wayfinding signage from the stadium garage to the Cal Softball field, painting pavement pedestrian markings and rumble strips, implementation of stop signs, removal of vegetation along the route to the stadium, and the possibility of using a temporary crossing guard on game days.

Response. The comment describes the agency's bicycle network planning efforts and lists bicycle corridors near the project site. The comment supports and summarizes pedestrian access improvements the project will undertake. This comment is acknowledged.

A1-7 Comment. Cumulative Transportation Impacts

According to the qualitatively VMT analysis, even with proposed project mitigation (Impact TRA-1), the cumulative impact would remain significant and unavoidable as stated on page 4.6-37. However, Alameda CTC encourages UC Berkeley to continue working with the City of Berkeley and with AC Transit and BART in coordinating ways to promote and encourage the use of sustainable travel modes as an ongoing practice for university operations and for special events, such as women's softball games. Implementation and monitoring of TDM measures, updates to Pedestrian and Bicycle Master Plans, parking management

programs, and other pricing strategies are some of the tools available to project sponsors to curb VMT generated by projects.

Response. The comment restates the conclusion of the Draft EIR that the Proposed Project's cumulative impact as it relates to VMT would be significant and unavoidable. The comment discusses that UC Berkeley should continue to work with the City of Berkeley, AC Transit, and BART in coordinating ways to promote more sustainable travel modes and lists various tools in order to curb VMT generated by projects.

As described in Chapter 3, Project Description, the proposed project includes a game day transportation and parking demand management (TDM) plan for the project due to limited onsite parking availability. The 2021 LRDP includes additional TDM measures to build on the existing TDM plan including but not limited to collaborative planning with City of Berkeley and transportation service providers (UC Berkeley 2021a and 2021b).

The TDM measures for the proposed project 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.

As indicated above, as part of this plan UC Berkeley would provide information to emphasize alternative commuting options such as public transit, biking, walking, carpooling, and car sharing. In addition to this game day TDM plan, UC Berkeley implements the UC Berkeley TDM Strategic Plan that 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. As described in LRDP EIR, Section 5.15, Transportation (Table 5.15-1), the measures include transit pass subsidies, Bear Transit shuttle services during the day and night, priced permit parking to influence demand, pre-tax commuter benefits program for employees, bike share program, carpool parking, online commute planning tool, bicycle parking, carshare with Zipcars and GIG Carshare, and TDM administration and marketing to educate faculty, staff and students about the program.

Additionally, the UC Berkeley Sustainability Plan includes a range of strategies to reduce parking demand and vehicle travel to the campus including expanding the comprehensive environmentally sustainable, safe, accessible, and equitable multi-modal transportation program to reduce parking demand and carbon emissions and increase sustainable commute and intra-campus travel, support campus housing initiatives to provide new housing within walking distance to the campus, update the Campus Bicycle Plan,

3. COMMENTS AND RESPONSES

participate in efforts to evaluate expansion of telework options for employees, promote AC Transit route planning, services, and amenities to increase campus ridership, and support continuing activities to strengthen active transportation options.

Monitoring of these programs is conducted through the implementation of LRDP Mitigation Measure TRAN-1 that requires UC Berkeley to continue to survey the transportation practices of both students and employees at least once every 3 years and use the survey results to adjust the TDM programs, parking pricing, education and outreach, support for telecommuting, and other measures to achieve the vehicle mode share goals in the UC Sustainable Practices Policy and the UC Berkeley Sustainability Plan (UC Berkeley 2021b).

A1-8 Comment. Thank you for the opportunity to comment on this DEIR. Please contact me at (510) 208-7400 or Aleida Andrino-Chavez at (510) 208-7480 if you have any questions.

Response. The comment serves as a closing remark and is acknowledged.

Letter B1 Claremont Elmwood Neighborhood Association (CENA)

B1-1 Comment. The Claremont Elmwood Neighborhood Association is writing regarding the environmental impacts which would result from implementation of the Cal Softball Field Renovation Project.

Located in the part of Berkeley which is most difficult for the public to access, the proposed project is located on the east side of Memorial Stadium and is accessed by Stadium Rim Way and Centennial Road runs the length of the canyon and connects to Grizzly Peak at the top of the Berkeley hills along the ridge.

Response. The comment serves as an opening remark and describes the project's location and public access. The comment subjectively states, without evidence, that the proposed project is "[l]ocated in the part of Berkeley which is most difficult for the public to access." This statement is speculation and the unsubstantiated opinion of commenter.

B1-2 Comment. The implication of this location for the project site means that every spectator, every vendor, and anyone associated with any aspect of construction or operations, must travel through a Berkeley neighborhood to access the site.

Response. The comment states that the project site will require travel through Berkeley neighborhoods. The proposed project would be located at the same site as the existing softball field, in the Strawberry Canyon Recreation Area portion of the Hill Campus West, along with other existing fields and recreational facilities (e.g., Witter Field, Strawberry Canyon Recreation and Pool). It is acknowledged that existing access routes to the project site will remain unchanged with the proposed project and that those routes pass through Berkeley neighborhoods. See Response to Comment B1-3 for more information regarding routes of travel.

B1-3 Comment. CENA has a particular interest in how construction traffic will access the project site. As described in the DEIR, construction vehicles "would use designated City of Berkeley truck routes, along... Piedmont Avenue, Warring Street, Derby Street, and Belrose Avenue..." (City of Berkeley, 2017b) all of which are located in CENA neighborhoods. Yet with reference to Designated Truck Routes, and contrary to the implication in the DEIR, any vehicle with tonnage over 3 tons would be prohibited from using these thoroughfares.

Event spectators will have to excess [access] the new sodtball [softball] field the same way as the construction vehicles.

Response. The comment expresses concern regarding construction truck traffic and overall spectator traffic along residential roadways. Construction vehicles for the proposed project would use City of Berkeley signed truck routes and adhere to signed prohibitions and various weight limitations for certain routes, as identified in the City's truck route map. Roadways listed as prohibited for 3-ton or 5-ton trucks prohibit specific sizes of trucks, however, other routes are available to reach the project site. UC Berkeley applies continuing best practices (CBPs) relevant to transportation as part of the project approval process which includes various elements related to construction and truck traffic. 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 and CBP TRAN-6 in Impact TRA-1 included Draft EIR, Section 4.6, Transportation). The Construction Traffic Management Plan would address job-site access including truck routes to be used, 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.

Based on the comment and a review of the text in the Draft EIR, Section 4.6, Transportation, minor text revisions have been made in Final EIR Chapter 2, Revisions to Draft EIR to remove references to the exact roadways construction traffic would use. The routes that proposed project construction traffic would use would be identified in the construction traffic management plan for the proposed project, consistent with the City truck route map, as described in CBP TRAN-6.

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. Additionally, project event spectators would utilize the same routes of travel as they do currently to reach the Cal Softball Field. Events at the Cal Softball Field would cease during construction and therefore, proposed project event spectators would not use access routes during construction and would not conflict with construction vehicles along those access routes.

B1-4 Comment. The Draft EIR also states that it will follow the City of Berkeley's General Plan Transportation Element. Yet the proposed project does not "improve (the) quality of life in Berkeley neighborhoods by calming and slowing traffic on all residential streets." It increases traffic on the few corridors which can be used for ingress and egress to the project site.

Response. As discussed in Draft EIR 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. As described in Draft EIR Section 4.6, Transportation, 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 impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (see Draft EIR Section 4.6.3.1, Standards of Significance). Therefore, relevant City of Berkeley General Plan policies are included and evaluated in Impact TRA-1 in Section 4.6.3.3, Impact Analysis. The analysis concludes that the proposed project will not conflict with any of the relevant policies

in the Transportation Element of the City of Berkeley General Plan. The City of Berkeley did not comment on the Draft EIR and has not expressed any concerns related to the proposed project.

The comment states that the proposed project does not follow the City of Berkeley's General Plan Transportation Element because it does not "improve (the) quality of life in Berkeley neighborhoods by calming and slowing traffic on all residential streets." The quoted statement comes from the general objectives of the Transportation Element and is not a mandatory policy. The findings in the Draft EIR state that all traffic increases due to the proposed project would follow the same travel patterns and routes that already are utilized and exist currently. The proposed project does not bring a new use to the project site. Traffic associated with the project site's current uses already travels through these streets. Any increase in project related traffic would be directed to utilize the available UC Berkeley parking garages. See Response B1-6 for more information. Additionally, the Proposed Project does comply with elements of the City's General Plan Transportation Element as stated in the Draft EIR (see Section 4.6, Transportation, Impact TRA-1). Further, the Draft EIR states that 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), specifically for typical and maximum events. However, 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.

It should be noted that the policy cited by the commenter is one that the City of Berkeley is responsible for implementing, as "calming and slowing traffic on all residential streets," as identified by Policy T-20 of the City's Transportation Element, Neighborhood Protection and Traffic Calming. This policy recommends physical improvements on City streets such as speed bumps, roadway diets, signage, etc. Traffic calming and slowing, as used in the City's Transportation Element, is used to mean safer and slower driving, as indicated by Action C, which recommends "endorses[ing] traffic calming strategies that primarily slow traffic." Given this context, a greater volume of traffic is not necessarily inconsistent with "calming and slowing traffic." Furthermore, UC Berkeley does not have jurisdiction over City of Berkeley roadways it has no control over the implementation of these types of traffic calming measures.

B1-5 Comment. We also note the increase in vehicle miles traveled (VMT). For each game, there are 316 new vehicle trips. We also note that there are more games overall, and that there will be night games where none exists now. Night games extend to 10:00pm, and traffic will be leaving the isolated location and leaving Berkeley for some time afterward.

Response. As described in Draft EIR Section 4.6, Transportation, 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 in the Draft EIR for the number of persons, number of vehicles, and vehicle trips generated daily: typical weekday use, and typical and maximum event use for matches. The net increase over existing conditions in participants and spectators is used to determine trip generation for each scenario, which is provided in Draft EIR Tables 4.6-2, 4.6-3, and 4.6-4. Trip generation could increase by 2 daily vehicle trips during typical weekday use, by 316 daily vehicle trips during an average event, and by 108 daily vehicle trips during a maximum event. Given the scenarios evaluated, the worst-case scenario is based on the net increase with the proposed project, as compared to the average game (316 daily vehicle trips); however, not every game will result in this level of trip generation, as claimed by the commenter. See Draft EIR Section 4.6, Transportation (Impact TRA-2) for additional information about the VMT analysis.

With regards to “night games” noted by the commenter, some of the up to 25 games per year would be played after dark, but not all such games would extend to 10:00 p.m., as claimed by the commenter. In addition, games are permitted to occur after dark at the project site currently. When the existing project was approved in 1992 (the “1992 Project”), UC Berkeley published an Initial Study/Negative Declaration that reviewed the environmental impacts of the construction and operation of the 1992 Project (the “1992 IS/ND”) (UC Berkeley 1992). The 1992 IS/ND indicated that the 1992 Project would not change the operating hours of the project site, which, at that time, contained sports fields with “activities ... routinely scheduled until 10pm” (UC Berkeley 1992). As such, while the project would add competitive evening games, the impacts of operating a softball field on the project site after dark were analyzed in the 1992 IS/ND. In addition, because parking would remove 85 spaces in the existing Witter Lot and retain approximately 25 parking spaces, fewer vehicles would depart from the project site after a game, as compared to existing conditions, but would rather depart from other parking locations including but not limited to Stadium Garage.

B1-6 Comment. As conditions exist currently, 95% of the spectators arrive at the site by vehicle. The University anticipates reducing that high volume while using continuing best practices. However, the best practices are designated for Cal faculty, staff, and students who commute to campus. The interventions are untested on spectators and thus not established as a best practice with empirical evidence of predictive effect.

Response. The comment states that UC Berkeley’s continuing best practices to reduce automobile traffic are designed for faculty, staff, and students who commute to campus and are not tested on spectators with empirical evidence. As described in the Draft EIR, the proposed project would increase the number of spectators for typical weekday events, as well as for maximum events during up to 25 competitive softball games per year. The UC Berkeley parking lots and garages available within the immediate area would be able to accommodate the increase in spectators, and various and plentiful transit options, as listed in the Draft EIR, exist in the study area. The proposed project includes a game-day TDM plan in Draft EIR Chapter 3, Project Description, that is distinct from UC Berkeley continuing best practices (see also Response to Comment A1-7 for a description of this plan). As part of this plan, UC Berkeley would provide information to emphasize alternative commuting options such as public transit, biking, walking, carpooling, and car sharing, among other measures. However, as described in Draft EIR Section 4.6, Transportation, it is not possible to accurately assess the reduction in trip generation that the TDM measures may have and therefore the trip generation estimates do not include reductions for TDM. Consequently, the impact conclusions provided in Draft EIR are not based on TDM reductions, to provide for a conservative analysis.

B1-7 Comment. Ideally, an alternative would be found that would produce less hardship on residential neighborhoods, which provide an important foundation for building healthy families, safe communities, and good citizenship.

Thank you for consideration of these concerns. We hope the DEIR will be revised accordingly.

Response. The comment recommends that an alternative be found to reduce impacts on residential neighborhoods. A range of other sites were considered as demonstrated in Draft EIR Chapter 6, Alternatives. See Chapter 2, Revisions to Draft EIR, of this Final EIR for consideration of an additional off-site alternative, as described in Response to Comment B4-2.

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- B1-8** Comment. The Claremont Elmwood Neighborhood Association is writing regarding environmental impacts which would result from implementation of the Cal Softball Field Renovation Project.

Located in the part of Berkeley which is most difficult for the public to access, the proposed project is located on the east side of Memorial Stadium and is accessed by Stadium Rim Way and Centennial Road. Centennial Road runs the length of the canyon and connects to Grizzly Peak at the top of the Berkeley hills along the ridge.

Response. This comment is a direct replication of Comment B1-1. See Response to Comment B1-1.

- B1-9** Comment. The implications of this location for the project site means that every spectator, every vendor, and anyone associated with any aspect of construction or operations, must travel through a Berkeley neighborhood to access the site.

CENA has a particular interest in how construction traffic will access the project site. As described in the DEIR, construction vehicles “would use designated City of Berkeley truck routes, along ... Piedmont Avenue, Warring Street, Derby Street, and Belrose Avenue (City of Berkeley 2017b)...”(City of Berkeley, 2017b) all of which are located in CENA neighborhoods. Yet with reference to Designated Truck Routes, and contrary to the implication in the DEIR, any vehicle with tonnage over 3 tons would be prohibited from using these thoroughfares.

Response. This comment addresses the same concerns raised in Comments B1-2 and B1-3. See Response to Comments B1-2 and B1-3.

- B1-10** Comment. The Draft EIR also states that it will follow the City of Berkeley’s General Plan Transportation Element. Yet the proposed project does not “improve (the) quality of life in Berkeley neighborhoods by calming and slowing traffic on all residential streets.” It increases traffic on the few corridors which can be used for ingress and egress to the project site.

Response. This comment is a direct replication of Comment B1-4. See Response to Comment B1-4.

- B1-11** Comment. We also note the increase in vehicle miles traveled (VMT). For each game, there are 316 new vehicle trips. We also note that there are more games overall, and that there will be night games where none exists now. Night games extend to 10:00 pm, and traffic will be leaving the isolated location and leaving Berkeley for some time afterward.

Response. This comment is a direct replication of Comment B1-5. See Response to Comment B1-5.

- B1-12** Comment. As conditions exist currently, 95% of the spectators arrive at the site by vehicle. The University anticipates reducing that high volume while using continuing best practices. However, the best practices are designed for Cal faculty, staff, and students who commute to campus. The interventions are untested on spectators and thus not established as a best practice with empirical evidence of predictive effect.

Response. This comment is a direct replication of Comment B1-6. See Response to Comment B1-6.

- B1-13** Comment. Ideally, an alternative would be found that would produce less hardship on residential neighborhoods, which provide an important foundation for building healthy families, safe communities, and good citizenship.

Thank you for consideration of these concerns. We hope the DEIR will be revised accordingly.

Response. This comment is a direct replication of Comment B1-7. See Response to Comment B1-7.

Letter B2 Lozeau Drury LLP

B2-1 Comment. At page 4.5-23 of the DEIR circulated for the Cal Softball Field Renovation Project, it references “applicable research papers presented at the 2011 Institute of Noise Control Engineers (INCE) national conference (Hayen et.al. 2011).” The referenced papers are not listed in the DEIR’s references section. Do you have a copy of the referenced papers that I can arrange to copy on Monday, January 29, 2023? Or, even better, can you please e-mail me a copy of the referenced papers?

Response. The comment makes the claim that the Hayen et. al. 2011 reference is not provided in the Chapter 7, References, of Draft EIR. The reference is in fact provided on page 7-5 of Chapter 7. A copy of the referenced paper was provided to the commenter by UC Berkeley staff on January 29, 2024, via email.

Letter B3 Berkeley Architectural Heritage Association (BAHA)

B3-1 Comment. This is our comment letter regarding UCB’s above-entitled Draft Entitled Environmental Impact Report (DEIR). The Berkeley Architectural Heritage Association (BAHA) is a nonprofit with over 1,000 members. BAHA’s mission is to promote, through education, an understanding and appreciation for Berkeley’s history, and to encourage the preservation of its historic structures and cultural resources. Incorporated on December 9, 1974, the organization has been active since 1971.

Response. The comment serves as an opening remark, introducing the organization’s mission and history.

B3-2 Comment. The DEIR is inadequate because it fails to discuss the impacts of the above-entitled proposed project on the cultural and historical Strawberry Canyon, and on the Panoramic Hill Historic District (PHHD), the latter of which is listed in the National Register of Historic Places (NRHP). (See Attachment – Application and Grant of NRHP status.) While UCB has good intentions in wishing to improve its softball field for women, it overlooks the damage that it is creating on these two significant cultural and historic gems. The renovation is anything but that, and the new field’s size and operations will detract from them.

Response. The comment states that the Draft EIR failed to consider potential impacts to the “cultural and historical Strawberry Canyon” and the adjacent Panoramic Hill Historic District. The commenter has not provided any substantial evidence that Strawberry Canyon is a cultural or historic resource. The results of the CHRIS search specific to built environment resources did not include documentation pertaining to Strawberry Canyon, nor is it listed in the California Office of Historic Preservation (OHP) Built Environment Resources Directory (BERD) for Alameda County. Strawberry Canyon also does not appear in the list of Berkeley Landmarks or the City of Oakland List of Designated Landmarks, nor is it included in the list of designated National Register resources or National Register-eligible resources identified in the Hill Campus West and Hill Campus East planning areas described in the UC Berkeley Long Range Development Plan (UC Berkeley 2021a and 2021b). An entry for Strawberry Canyon is featured on the Cultural Landscape Foundation website, a non-profit organization that seeks to educate the public about shared landscape heritage, however Strawberry Canyon is not listed under the “Historic Sites” category, which includes “...cultural landscapes significant for their association with a historic event, activity, or person (TCLF 2024a, 2024b).” For these reasons, UC Berkeley does not consider Strawberry Canyon to be an historical resource for the purposes of CEQA.

The commenter's claim that the Draft EIR "fails to discuss the impacts" on the Panoramic Hill Historic District is inaccurate. The Draft EIR Section 4.4, Cultural Resources (Subsection 4.4.3.3, Impact CUL-1) provides an evaluation of the potential impacts of the proposed project on the Panoramic Hill Historic District and all impacts were determined to be less than significant. Regarding direct impacts, as the project site boundary does not overlap the Historic District boundary, analysis concluded that the project would not physically impair, damage, or modify the Panoramic Hill Historic District as a whole, or any of the district's individual contributing buildings or character-defining features as a result of construction or operation of the proposed project. As a quiet setting is not identified as a contributing character-defining feature of the Panoramic Hill Historic District in the nomination form, and the results of the noise analysis concluded that impacts from operational noise would be less than significant, potential changes to the Historic District were therefore limited to the possible introduction of new light sources that may filter into the Historic District boundary once the proposed project is completed. The analysis of direct impacts focused on the potential for new light and glare introduced by the project to materially impair the historical significance of the architecture and the built environment in the adjacent Panoramic Hill Historic District. As is required by CEQA, the analysis considered the potential impacts of the project on the significance of the adjacent Panoramic Hill Historic District as a historical resource, rather than the impacts of light and glare on the occupants within the Historic District. The lighting analysis prepared for the project concluded that the proposed project is not anticipated to create a new source of substantial light or glare. In addition, the proposed project would reduce skyglow (see Response to Comment B5-60). Because the historical significance of the Panoramic Hill Historic District as it is presented in the National Register Nomination 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, following construction and operation of the project, 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 reflect its period of significance from 1901 to 1950, including its integrity of workmanship, materials, design, location, setting, feeling, and association (Thomas and Drotos 2005). An analysis of potential indirect or secondary effects on the Historic District identified no reasonably foreseeable project related effects that would occur later in time or that would be further removed in distance that would materially impair the significance of the Panoramic Hill Historic District. The analysis determined that the proposed project would not cause a substantial adverse change in the significance of a (built environment) historical resource and therefore the impact would be less than significant.

B3-3 Comment. The DEIR also fails to adequately consider less deleterious alternatives, other than moving the playing field to Albany. It must be revised after considering the proposed project's aesthetic, historic and cultural impacts beyond potential archaeological artifacts and it must then be recirculated for public comment.

Response. The Draft EIR Chapter 6, Alternatives considered a total of 10 alternatives, 6 of which were eliminated from further consideration because they would not avoid or substantially lessen significant environmental impacts of the proposed project and/or they did not meet most of the basic project objectives. Specifically, the alternatives considered but eliminated included consideration of a different orientation for the proposed Cal Softball Field and facilities, and consideration of five siting alternatives, including Richmond Field Station, Evans Diamond, Downtown Berkeley, Athletic Quadrant, and North Field. Alternatives evaluated in detail included the No Project Alternative, a Reduced Project Alternative, a No Games After Dark Alternative, and a Comprehensive Project Alternative at University Albany.

The commenters claim that the Draft EIR fails to adequately consider “less deleterious alternatives” is inaccurate. All of the four alternatives evaluated in detail would reduce or avoid at least some of impacts of the proposed project. The Reduced Project Alternative (Alternative 2) 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, as described in Draft EIR Chapter 6, 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 to ensure compliance with Title IX of the Education Amendments of 1972 (20 USC 1681 et seq.) (Title IX) and would not meet a number of other project objectives. See also Response to Comment B4-2 for discussion of an additional off-site alternative considered as part of this Final EIR, which is also included in the revisions to the Draft EIR, as shown in Final EIR Chapter 2, Revisions to Draft EIR.

B3-4 Comment. The failure to respect, maintain, and preserve historic and cultural items belonging to the People of the State of California and in trust under UCB’s control is a longstanding problem that BAHA has brought to the current Administration’s attention on numerous occasions. The excuse of funding limitations rings hollow because of the Administration’s history of poor financial management leading to extreme cost overruns, especially in pursuit of more and expanded sports activities. The stadium is the most recent major example of poor planning. All of these failures relate to UCB’s prioritizing sports competition over the university’s core function to educate high school graduates for a more productive state, country, and world. That is UCB’s strength and value, not competing with other colleges on winning softball games.

Response. The comment expresses general opinion and does not specifically comment on the analysis contained in the Draft EIR. However, as described in Response to Comment B3-2, the Draft EIR did provide an evaluation of the potential effects of the proposed project on the Panoramic Hill Historic District and all impacts were determined to be less than significant. The project site is an existing softball field used for both intramural and competitive softball. The proposed project seeks to renovate the existing site to provide continued use of the site for these uses, while meeting NCAA and Title IX requirements. As described in Draft EIR, Chapter 5, CEQA Considerations, 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). Therefore, the proposed project is consistent with and supports the implementation of UC Berkeley’s adopted LRDP.

B3-5 Comment. The DEIR repeatedly quotes the UCB chancellor as troubled about women having unequal access to the same softball field experience as the men. The proposed project is allegedly necessary because the current facility does not meet NCAA standards and the project would provide various amenities including more softball intercollegiate competitions, capacity for television broadcasting, seating for 1,500, a press box, and the like. While the DEIR bills the project as “renovation,” it appears totally disconnected from the original field, which UCB strangely finds unusable.

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Response. The commenter seems to suggest that it is the UC Berkeley Chancellor that is “...troubled about women having unequal access...” but the requirements for equal access for men and women related to intercollegiate athletics is based on the requirements of Title IX - Education Amendments Act of 1972, 20 U.S.C. §§1681 - 1688 (2018). As described in Chapter 3 of the Draft EIR, Project Description, 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. Further, the Draft EIR, Chapter 3, Project Description: (1) describes how the existing softball field does not comply with Title IX and with NCAA requirements related to field dimensions, seating and lighting; (2) provides specific project objectives related to compliance with Title IX and NCAA requirements; and (3) presents the proposed project elements that meet these objectives.

Regarding the portion of the comment that questions whether the project is a renovation, the proposed project does meet the University’s definition for major renovation, as described herein. According to the University’s Sustainable practices policy (UCOP 2023a), major renovations of buildings are defined as projects that require 100% replacement of mechanical, electrical, and plumbing systems and replacement of over 50% of all non-shell areas (interior walls, doors, floor coverings, and ceiling systems). The UC Office of the President Facilities Manual indicates that major renovations are defined as renovation of any existing facility, whether or not combined with any addition, which affects a floor area exceeding fifty percent (50%) of the existing floor area in gross square feet (UCOP 2023b). Additionally, the Draft EIR makes no statements about the existing softball field being “unusable,” as stated by the commenter. Rather, the proposed project would allow UC Berkeley to comply with Title IX and NCAA requirements.

B3-6 Comment. More significantly, the DEIR overlooks the project’s negative impacts on the adjacent Strawberry Canyon (Canyon), and on the PHHD.

Response. See Response to Comment B3-2.

B3-7 Comment. Prior UCB Administrations’ preservation values were decidedly different from those of the current chancellor and UC corporate management. The educated public and UCB professors understood the high value of the Canyon and PHHD for the benefits that they bestowed on the community, including UCB students. The DEIR fails to examine the project’s impacts that will negatively impact both.

Response. See Response to Comment B3-2.

B3-8 Comment. A. The DEIR Failed to Consider Protecting the Canyon and the PHHD From the Proposed Project’s Negative Impacts

UCB (formerly the College of California) hired Frederick Law Olmsted in 1865 to lay out the Berkeley Property Tract for a gracious residential neighborhood adjacent to the campus. After visiting the Canyon, he identified the mountain gorge and flowing creek waters as nearby scenic amenities:

As this road follows a stream of water from the open landscape of the bay region into the midst of the mountains it offers a great change of scenery within a short distance, and will constitute a unique and most valuable appendage to the general local attractions of the neighborhood.

Janice Thomas, then BAHA President provided a history of the Canyon from Olmsted's 1865 visit to 2005: http://berkeleyheritage.com/berkeley_landmarks/strawbcanyon.html. The history chronicles the Canyon's benefits through the eyes of Berkeley residents who recorded it periodically for over 150 years. It describes the views on all sides of the canyon including the Golden Gate, fire trails that open into nature and that offer "tranquility and inspiration" leading completely away from city life, the creek with its multiple tributaries, and the many diverse trees and plants.

Even UCB's own website discusses the importance of protecting the Canyon's creek:

Strawberry Creek is a major landscape feature of the University of California, Berkeley, and a primary reason the site was chosen in the 1860s as the location for the campus. More than 3,000 university students, and many elementary and high school students from surrounding communities, use Strawberry Creek each year as a resource for education and research. (<https://creeks.berkeley.edu/creeks-and-watersheds/strawberrycreek>.)

Response. See Response to Comment B4-3 for additional information about how the Draft EIR addressed natural and aesthetic impacts in Strawberry Canyon. See Response to Comment B3-2 for additional discussion of Strawberry Canyon's lack of historic or cultural status. Additionally, as described in Draft EIR Section 4.3, Biological Resources, UC Berkeley has been implementing the Strawberry Creek Restoration Program since 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.

Additionally, Draft EIR Section 4.3, Biological Resources, evaluates direct and indirect impacts to protected wetlands and other aquatic resources including Strawberry Creek (see Impact BIO-3). 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 and impacts of the proposed project on the creek would be less than significant.

B3-9 Comment. Despite the Canyon's admitted benefits, the DEIR contends that an adjacent, made-for-streaming, loud (22 speakers all around the field), and glaring light enough to cancel the view of stars is a necessity. Frederick Law Olmsted would be shocked by such an assertion and the public should be as well.

Response. The Draft EIR concluded that all proposed project operational noise and lighting impacts would be less than significant based on quantitative modeling performed for the proposed project, as described in Draft EIR Section 4.2, Aesthetics (and Appendix D), and in Draft EIR Section 4.5, Noise (and Appendix G). As detailed in Draft EIR Section 4.2, Aesthetics, 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 Draft EIR. The analysis evaluated vertical light spill (foot candles) and maximum intensity (candela; maximum intensity is an indicator of glare potential) at representative receptor sites in the surrounding area or on the project site (see Draft EIR Figure 4.2-3 and Appendix D). The receptor sites were selected to illustrate light spill and glare potential in various directions and elevations in the surrounding area. As summarized in Response to Comment B5-56, light and glare impacts were determined to be less than significant. Additionally, as described in Response to Comment B5-60 skyglow would be reduced with the proposed project.

As detailed in Draft EIR Section 4.5, Noise, a detailed spectator noise analysis was prepared to assess noise associated with typical weekday use, and typical and maximum event use for matches. The typical event was 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 was based on the total “sell-out” capacity of 1,511 spectators during a softball game or tournament. As described in Impact NOI-1, spectator noise impacts were determined to be less than significant at the selected existing noise-sensitive receptors, based on modeling conducted for the proposed project. Stationary and traffic noise impacts were also evaluated and determined to be less than significant. See Response to Comment B3-2 and B3-8 for additional information about Strawberry Canyon.

B3-10 Comment. In 2022, The Cultural Landscape Foundation (TCLF) honored the bicentennial of Frederick Law Olmsted, Sr.’s birth (1822-1903), the father of landscape architecture. It featured examples of Olmsted designed parks facing multiple threats including “inappropriate change or even erasure.” (<https://www.tclf.org/sites/default/files/microsites/landslide2022/introduction.html>.) In TCLF’s article, “Landslide 2022,” it discussed the ways that important cultural and historic landscapes like the Canyon here are being destroyed, despite the original conservation values that went into preserving them for over 150 years.

TCLF notes that expanding or placing institutional structures adjacent to parks is one way that public entities damage or destroy them. The Canyon, like many parks, was left alone primarily for respite and passive enjoyment by UCB and Berkeley’s citizens over the decades. The Stadium, as the first large encroachment into the Canyon, was highly controversial from the very beginning in 1921 due to the damage that it created for Berkeley residents who valued the open space and beauty of the then untouched Canyon. (See article by BAHA past President and local historian Susan Cerny (1940-2016) “Memorial Stadium – controversial from the start,” http://berkeleyheritage.com/berkeley_observed/berkeleyobserved90203.html.)

Response. As noted above and in the Draft EIR, there is an existing softball field at the project site. The proposed project does not alter the use or purpose of the project site. See also Response to Comment B3-2.

B3-11 Comment. Like other significant parks, including those designed by Olmsted, the Canyon is now coming under pressure again to support a new, greatly expanded university use. “Urban parks, which Frederick Law Olmsted, Sr., called “green lungs,” were initially conceived as democratic spaces that were free and

open to all. They were also part of the social contract between the public and the municipalities or other governmental organizations that built and maintained the parks.” (TCLF article.) Here, the university is failing to meet its stewardship obligation to avoid expanding physically and operationally a softball field in such close proximity to the Canyon.

In its article, TCLF also discusses that another way to damage or erase parks is through diminished or lost connectivity:

Connectivity is unfettered access for all and the ability to participate in dedicated communal public space. Connectivity was a core value of Frederick Law Olmsted, Sr., and his successors, as demonstrated in hundreds of projects throughout the nation. Neighborhood parks and park systems were created to be places for easy and unfettered access, also serving as the connective tissue within and between neighborhoods.

Response. The project site is already developed with the existing softball field. The proposed project would continue this use and would not change the existing connectivity within Strawberry Canyon, as it would not change roadway access and trail use in the vicinity of the project site. See also Response to Comment B3-2 for additional information about Strawberry Canyon.

B3-12 Comment. In the application for listing in the NRHP, the authors explained the history of how the PHHD connected with the Canyon and how they each contributed to the other:

At the time of the neighborhood’s beginning, the floor of Strawberry Canyon was known as Strawberry Valley, and Strawberry Creek flowed through the canyon above ground. Then, a “beautiful natural place”, the creek has since been culverted and the ravine filled. The University’s Botanical Gardens were also in the vicinity. The properties located at 1, 9, and 15 Canyon Road were sited so as to benefit from these amenities as much as for the panoramic views. Despite the absence of the creek and the botanical gardens in contemporary times, the [PHHD] structures stand as a reminder of the neighborhood’s early relationship between natural and built environments. (App., Sec. 7, pg. 1, November 9, 2004.)

Response. See Response to Comment B3-2 and B3-11. Additionally, although Strawberry Canyon is discussed in the Panoramic Hill Historic District as a scenic natural area adjacent to the neighborhood, Strawberry Canyon itself, or the view of Strawberry Canyon as observed from the neighborhood, are not listed as contributing character-defining features of the Panoramic Hill Historic District.

B3-13 Comment. Enlarging the physical and operational aspects of the softball field with 1,500 visitors, 22 loudspeakers, urban-appearing facilities for the press, and the like so close to the PHHD and the Canyon contributes to disconnecting the residential neighborhood and the Canyon. The DEIR must discuss these impacts under cultural resources, aesthetics, noise, and historic resources. A revised DEIR must address the impacts, discussed above and elsewhere in the public comments and UCB must also recirculate the revised document to comply with CEQA.

Response. As indicated in Response to Comment B3-2, Draft EIR Section 4.4, Cultural Resources, provides an analysis of the direct and indirect impacts of the proposed project on the Panoramic Hill Historic District, including impacts related to noise and lighting. Draft EIR Section 4.2, Aesthetics, and Section 4.5, Noise, provide distinct analyses of aesthetics (including light and glare), as well as noise during construction and operation of the proposed project. See also Responses to Comments B3-2, B3-8, B3-11, and B3-12 for discussion of Strawberry Canyon. Additionally, the project site is located downslope from the Panoramic

Hill Historic District on a site already used as a softball field with existing lights and speakers. The proposed project would continue this use and would not change the existing connectivity within Strawberry Canyon, as such, it would not contribute to “disconnecting” the Panoramic Hill Historic District and the Canyon.

The University is not required to recirculate the Draft EIR, as the triggers for recirculation under CEQA Guidelines Section 15088.5 have not been met, as demonstrated throughout this Final EIR. Specifically, a new significant impact or a substantial increase in the severity of a previously identified impact have not been identified, as described in CEQA Guidelines Section 15088.5(1) and (2).

B3-14 Comment. B. UCB Is Legally Required to Analyze Project Impacts to the Canyon and PHHD

BAHA is not requesting a “favor” from UCB – the university is legally required to adequately analyze the impacts of the softball field’s expansion and increased usage on the Canyon and PHHD. (*City of Hayward v. Trustees of California State University* (2015) 242 Cal.App.5th 833.) There, the First District Court of Appeal upheld the trial court’s finding that the state university had failed to adequately analyze the extent of the master plan’s impacts on neighboring parklands. It ordered, in relevant part, that the university prepare a revised EIR in which it analyzed impacts of “site-specific projects to [the] parkland[s] and to reconsider the feasibility findings with respect to funding of off-site mitigation measures.” (*Id.*, at p. 859.) UCB must do the same here.

Response. The commenter cites the *City of Hayward v. Board of Trustees of the California State University* (2015) 242 Cal.App.4th 833 (*City of Hayward*), in stating that the University is legally required to adequately analyze the impacts of the softball field’s expansion and increased usage on the Strawberry Canyon and the Panoramic Hill Historic District. The facts of the cited case are different than those for the proposed project and case findings related to “parkland” do not apply to the proposed project. *City of Hayward* involves an EIR in which the agency found that “no project-level analysis of impacts to parkland [was] required with respect to the ... project.” (*City of Hayward*, 242 Cal.App.4th at 858). The project in *City of Hayward* involved a Master Plan that included 3,770 new student beds; and up to 220 faculty/staff housing units and would result in population increase to the campus. In that case the agency chose not to analyze the impacts of the project on neighboring parkland on the basis that student/faculty use of those facilities would be “nominal because on-campus facilities would adequately support the campus population.” *Id.* There is no similar expansion of student body or population increase associated with the proposed project. Instead, the proposed project involves renovation of an existing women’s softball field to comply with Title IX. The Draft EIR analyzes impacts related to the potential increase in spectators under the typical and maximum scenarios (see Draft EIR Section 4.5, Noise, and Section 4.6, Transportation). The Draft EIR also conservatively assumes there could be an increased number of competitive softball games, from approximately 15-20 under existing conditions to up to 25 with the proposed project. Unlike the situation in *City of Hayward* where impacts to parklands were not analyzed at all, the Draft EIR here does include a project-specific analysis of the proposed project’s impacts on the Strawberry Canyon and the Panoramic Hill Historic District throughout the Draft EIR, including in cultural and historical resources, biological resources, and aesthetics, among others. The fact that the commenter disagrees with the impact conclusions does not negate the analysis. See Responses to Comments B3-2, B3-8, and B3-11 to B3-13 for further discussion of Strawberry Canyon and the possible impacts to the Panoramic Hill Historic District.

Letter B4 Make UC A Good Neighbor

B4-1 Comment. The DEIR for the Project presents a most comprehensive design plan and *raison d'être* for modernizing and re-developing the Berkeley Cal Softball Field as it currently exists in Strawberry Canyon — all to increase game capacity, competition, media, access, and attendance in respect to Title IX for the Cal women's softball and Recreational Sports Intramural softball players. Yet, the DEIR's well-advanced proposal for such a state-of-the-art sports facility placed within Strawberry Canyon is actually like a smoke screen in that it seems to thwart any adequate discussion of the potentially significant environmental impacts upon Strawberry Canyon itself, upon the immediate adjacent community, and upon the community at-large.

Response. The comment asserts that the Draft EIR's discussion of potentially significant environmental impacts is inadequate. To the contrary, the Draft EIR includes a more than adequate discussion of the potentially significant environmental impacts of the proposed project. As indicated in Response to Comment B3-2, the Draft EIR Section 4.4, Cultural Resources, provides an analysis of the direct and indirect impacts of the proposed project on the Panoramic Hill Historic District, including indirect impacts related to noise and lighting.

Draft EIR Section 4.2, Aesthetics, and Section 4.5, Noise, provide analyses of aesthetics (including light and glare), as well as noise during construction and operation of the proposed project, including as they may impact adjacent receptors in nearby neighborhoods. Draft EIR Section 4.6, Transportation, provides an evaluation of potential project impacts related to transportation, including potential conflicts with transportation-related programs, plans, ordinances or policies, vehicle miles traveled, transportation hazards, and emergency access; the analysis does consider off-site impacts, as relevant to the analysis. Lastly, Draft EIR Section 4.7, Wildfire, provides an evaluation of potential project impacts related to wildfire and specifically refers to the wildfire protection plan prepared for the proposed project (see Draft EIR Appendix C), as well as the fire evacuation analysis prepared for the proposed project (see Draft EIR Appendix H). The fire evacuation analysis was performed to determine how long it would take for users and spectators of the Cal Softball Field, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. See also Response to Comment B4-3 below for additional information about how the Draft EIR addressed natural and aesthetic impacts in Strawberry Canyon.

B4-2 Comment. Furthermore, it can be argued that the DEIR fails to explore the potential of Edwards Field as an alternative site (George C. Edwards Stadium, 1932, listed on the National Register of Historic Places, #93000263) — a site that UC planners and the University President, herself, might discover as workable for a fully modernized Berkeley Cal Softball Field — potentially winsome for all, environmentally sound, and an over-all exciting location for crowds to gather just to watch women play softball.

Response. In response to this and other similar comments, consideration of Edwards Stadium as a siting alternative has been added to the EIR (see Chapter 2, Revisions to Draft EIR, of this Final EIR). As described in Final EIR Chapter 2, Edwards Stadium was considered but eliminated from further consideration. The use of the existing Edwards Stadium at the west side of Campus Park for the intercollegiate athletics (IA) softball program was determined not to be a viable siting alternative for multiple reasons. The stadium currently is used by eight intercollegiate programs for practices and competition: Men's and Women's Soccer, Men's and Women's Outdoor Track, Men's and Women's Indoor Track, and Men's and Women's Cross Country. Also, Edwards Stadium is the only 400-meter track on Cal's campus that is used by students, faculty, staff, and the community. Having a softball field at Edwards Stadium would displace Women's soccer and women's track and field with potentially no site or sites for these programs, and

would open up Title IX issues for these programs that are currently consistent with Title IX. Displacement of or scheduling limitations to women's sports would be inconsistent with the University's commitment to gender equity, and Division I level performance. Also, the required footprint for Cal Softball Field would occupy a significant portion of the Edwards Stadium site thereby limiting, and likely removing, the eight intercollegiate programs and the community's ability to continue to use the site. The required footprint to support a new Cal Softball Field at the site would leave insufficient space to reconstruct track and soccer facilities for these programs. Therefore, these existing programs would then have to be relocated to a new site or sites on campus that are consistent with Title IX, thereby resulting in additional environmental impacts associated with constructing and operating additional IA facilities for these programs.

Additionally, Edwards Stadium is listed in the National Register of Historic Places. The contributing features of the historic resource include the east and west bleachers, the walls, scoreboard frame. These historical components in the stadium would limit the University's ability to meet the facility and programmatic components necessary to meet our commitment to gender equity and Title IX. Fitting the Softball programmatic elements such as dugouts and bullpens may have an adverse impact on the historic significance of the Stadium. For these reasons, environmental impacts associated with constructing and operating a new softball athletic facility at the Edwards Stadium site and relocating and constructing new facilities for existing programs requiring relocation would be greater, as compared to renovating the existing Cal Softball Field. Additionally, this site does not meet the project objectives of improving 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 and upgrading existing infrastructure surrounding Cal Softball Field.

B4-3 Comment. In regards to Strawberry Canyon, it would seem to be a substantial environmental oversight, that the DEIR appears to purposefully ignore the fact that the Project location is within the context of Strawberry Canyon, not environmentally limited to the surrounds of the Strawberry Canyon Recreation Area. This omission points to a failure to consider potential impacts to Strawberry Canyon's significant natural resources, lands and waters, and its wider scope of wildlife and recreational activities, of which the Strawberry Canyon Recreation Area is one component.

Response. Contrary to commenter's assertion, the Draft EIR does not limit the scope of the analysis of environmental impacts to the project site or the Strawberry Canyon Recreation Area. For each environmental topic, the scope of the analysis is defined based on the location, nature of the project, surrounding conditions, potential for impact, etc. The scope of the analysis for topics relevant to the comment are described herein to demonstrate that Draft EIR does not arbitrarily limit the scope of the analysis of environmental impacts.

Draft EIR Section 4.2, Aesthetics, considers views of the site from off-site scenic vistas in or near Strawberry Canyon including those 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, all of which are generally located over 1 mile to the northeast of the project site. The impact of the proposed project related to scenic vistas was determined to be less than significant.

Draft EIR Section 4.3, Biological Resources, addresses the potential presence of special-status species in habitat located on the undeveloped hillsides south and north of the project site, which includes the portion of Strawberry Canyon near the project site (i.e., San Francisco dusky-footed woodrat, Alameda whipsnake, Puma [aka Mountain lion], and special-status birds and bats). Section 4.3 also assesses the potential that

the proposed project could result in impacts to such species (see Impact BIO-1). The section evaluates direct and indirect impacts to Strawberry Creek (see Impact BIO-2). The section also evaluates potential project impacts related to wildlife movement on the undeveloped Strawberry Canyon hillsides south and north of the project site that support natural and semi-natural vegetation that allows for movement of common, local wildlife species (see Impact BIO-4). The impact analysis disclosed that 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) and would not 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 of wildlife movement did assess the potential that construction and operational noise and lighting could impact such movement. All biological resources impacts were determined to be less than significant or could be reduced to less than significant through the implementation of identified mitigation measures.

B4-4 Comment. Going back to 1864 when Frederick Law Olmsted, known as the father of American landscape architecture, came to Berkeley to outline a plan for both the University (then the College of California) and the town, he envisioned a campus and a town bordering the natural beauty of Strawberry Canyon:

“.... [Piedmont Way is] extended eastwardly to the mouth of the valley [Strawberry Canyon] or gorge in the mountains, which is part of the property of the College. This lane is extended up the gorge, first, however, crossing to the other side. Thence it is intended to follow up the course of the brook, as close upon its banks as is practicable...As the road follows a stream of water from the open landscape of the bay region into the midst of the mountains, it offers a great change of scenery within a short distance, and will constitute a unique and most valuable appendage to the general local attractions of the neighborhood.” (Frederic Law Olmsted, 1865)

More recently, in reflection of Olmsted’s vision, as well as many others since, a 1976 report prepared by Garrett Eckbo & Associates for the University’s Office of Architects states:

“...The larger question, which is central in these recommendations, is that whoever uses the Canyon area, for whatever purposes and in whatever part of it; and whoever looks at or into the Canyon from outside, or passes through or over it; are all experiencing it as a total landscape structure or complex, a total people/nature artifact. It’s impact on all of these experiences, visually and through the other senses, is one of its primary functions. Therefore, we have viewed the Canyon as a potential work of landscape art, including and transcending all of its technical, functional and cultural aspects. We believe that the comprehensive view will enhance relations between all of these component aspects, and improve each one. Institutional uses cannot expand much beyond their current areas...”

Response. See Response to Comment B3-2 and B4-3 for discussion of Strawberry Canyon. The proposed project is the renovation of an existing softball field.

B4-5 Comment. Yet, again, as stated above, the DEIR basically ignores any discussion of, or how, the Project might have any significant environmental impact upon Strawberry Canyon as a landscape with its own particular natural history and its own irreplaceable natural resources –today more fragile than ever. Perhaps this oversight can be explained in a “Working Paper” produced by UC Berkeley’s Physical and Environmental Planning office in 2002. The Working Paper states that in order “...to guide capital investment at UC Berkeley ...” and “... even though Strawberry Canyon is the most dramatic physical feature of the proposed Hill Campus...”, it is fundamental for future planning purposes that Strawberry Canyon be dropped as a defined landscape and be absorbed into a general category-of-place i.e. the Hill West Campus.

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Response. See Response to Comment B4-3 for additional information about how the Draft EIR addressed natural and aesthetic impacts in Strawberry Canyon. See also Response to Comment B3-2 for additional discussion of Strawberry Canyon. In addition, commenter's citation of the 2002 Working Paper, entitled UC Berkeley Hill Campus Working Paper: A Study in Support of the 2020 Long Range Development Plan from December of 2002, is incorrect (UC Berkeley 2002). The paper does not contain the phrase "even though" and does not recommend anywhere that "Strawberry Canyon be dropped as a defined landscape." The 2002 Working Paper also details the commenter's history of the Canyon, noting that the Canyon "helped convince the trustees of the College of California to acquire the ranch lands along the creek in 1868 as the site for their new campus" before clarifying that "[a]t the time, the hills above the campus were a mix of grassland, oak savannah and open chaparral" and that "[i]t was not until speculators in the next decade planted eucalyptus, in a failed scheme to grow and harvest them for commercial use, that the hills began to acquire their present, largely forested look." The 2002 Working Paper further provides that a faculty advisory committee stated that "the guiding principle in the development of Strawberry canyon and the Hill Campus should be ... maximum use consistent with conservation of native values."

The proposed project is the renovation of an existing softball field. The proposed project is consistent with the LRDP, as described in Draft EIR Chapter 5, Other CEQA Considerations (see Section 5.1.8, Land Use and Planning). The commenter has not identified any significant impacts on Strawberry Canyon that would result from the proposed project.

B4-6 Comment. So, please find a question(s) here vis.a.vis the comments made above, and in regards to further environmental review:

Can UC Berkeley's Physical and Environmental Planning department arbitrarily limit the area of potential significant environmental impact for its own purposes to the Strawberry Canyon Recreation Area when proposing a project?

Response. See Response to Comment B4-3.

B4-7 Comment. Can UC Berkeley's Physical and Environmental Planning arbitrarily broaden the area of environmental impact for its own purposes to the West Hill Campus when proposing a project?

Response. See Response to Comment B4-3 and B4-5.

B4-8 Comment. Also, in regards to the comment and a serious suggestion above that the Edwards Stadium might be a workable and very dynamic alternative site, yet to be considered in the CEQA review process for the proposed UC Berkeley Cal Softball Field Renovation Project, it seems relevant that such a development could be a plus for both the University and the town of Berkeley and, importantly, for the all women on the teams, and all their sports fans. Also, it seems relevant to consider that Edwards Stadium would be located adjacent to normal transportation lines, day and night restaurants in Downtown Berkeley, lighting everywhere, noise being a part of life, no special endangered species or trees being endangered, no serious concerns about historic mud slides from volcanic soils (historically across Centennial Road), no relevant responsibilities for potential overflow of the Strawberry Creek (potentially due to more cement paving and ground cover), no traffic jams from the comings and goings of everyone else in the Canyon, and no adjacent residential National Register Historic Districts, with fine residential citizens, some even professors from Campus (who do not deserve to be disturbed by the softball games, the glaring lights and noise, and traffic congestion, etc.). And, wouldn't it all seem great and fun if the Cal women's softball and Recreational Sports Intramural softball players could play in Edwards Field and all the out-of-town teams would want to come to Berkeley!

Response. See Response to Comment B4-2 and Final EIR Chapter 2, Revisions to Draft EIR.

- B4-9** Comment. Please consider Edwards Stadium seriously as an alternative site. It is not only placed on the National Register as a Stadium, but its entire facility of some 80 acres is designated as the George C. Edwards Historic District, right in the center of Berkeley and part of the larger UC Berkeley athletic complex. What could be better than developing Edwards Stadium for the future use of Cal women's softball and Recreational Sports Intramural softball players?

Response. See Response to Comment B4-2 and Chapter 2, Revisions to Draft EIR, of this Final EIR.

Letter B5 Lozeau Drury LLP on behalf of the Panoramic Hill Association (PHA)

- B5-1** Comment. I am writing on behalf of the Panoramic Hill Association ("PHA") concerning the Draft Environmental Impact Report ("DEIR") for the UC Berkeley Cal Softball Field Renovation Project (SCH #2022110035) ("Softball Facility" or "Project") proposed for Strawberry Canyon.

PHA has a number of substantive comments that are very important to its members and their quality of life residing on Panoramic Hill. Of particular concern are the DEIR's discussions of the Project's noise and lighting impacts.

Response. The comment serves as an opening remark, explaining that the commenter is writing on behalf of the PHA, which has comments related to the proposed project's noise and lighting impacts. Specific comments related to noise and lighting impacts are responded to below.

- B5-2** Comment. The most glaring omission of the DEIR is the absence of any analysis of the additional new noise impacts of the proposed 5 new games to be scheduled at the Facility (including four potential post-season games which would presumably more likely attract the maximum number of spectators), and the addition of up to 25 night games during the evening from 5 pm to 10 pm which currently do not occur during those hours under the existing baseline. In both of these situations, the DEIR fails to compare the proposed Facility's noise impacts to the existing baseline conditions. The five new games must be compared to noise levels where no game is occurring. And, in order to address the Project's actual noise affects, the noise impacts of the new night time games must be compared to the existing noise conditions at that time of the day. The current evening conditions would be no spectator or PA noise from the existing softball facility.

Response. The current evening condition includes use of the existing softball facility, including the possibility of an evening game (see Figure 3-5 in Draft EIR Chapter 3, Project Description). The Cal women's softball field was opened in the current location in 1995, nearly 30 years ago. The University analyzed impacts of building a specific women's softball field in 1992. The 1992 IS/ND explained that "During the evenings, activities are routinely scheduled up until 10 pm, Monday through Friday throughout the year. The field lights are manually switched on at dusk and required to be manually switched off by 10 pm" (UC Berkeley 1992). Before the existing softball field was constructed, the existing noise from the field area was characterized as follows in Section 3.6 of the IS/ND:

"Noise is generated by players and spectators of a variety of recreational and sports activities conducted on the field. The greatest sources of noise related to softball, soccer and rugby play on the fields is human vocalization (e.g., spectator cheering and shouting during competitive play and coaches' instructions) and referees' whistles. Noise from tennis playing typically consists of players' voices and the sounds of tennis balls bouncing off pavement or hitting racket strings. The softball

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facility is equipped with an amplified sound system which is used for playing music during pre-game practice and for announcements during softball competitions. The speakers are aimed upward and broadcast sound widely outward, exposing nearby residents to these amplified sounds.” (UC Berkeley 1992).

Noise associated with renovation of the field at that time was explained in Section 3.6 of the IS/ND as follows:

“As the project involves reconfiguration and upgrading of the existing recreational facilities, long-term noise levels from normal operation of the recreation facilities are not expected to increase beyond current levels. Implementation of the project is expected to reduce traffic volumes associated with the project site, resulting in a slight (but most likely unnoticeable) reduction in traffic noise in the project area. The field area would continue to be used for intercollegiate and intramural sports activities and the level and types of various sports-related noises generated at the site would, therefore, generally remain constant. The project would include installation of a new amplified sound system for the softball field designed to project sound directly onto the softball field rather than upwards. This would thereby reduce the level of amplified noise in the residential area to the south of the project area. The use of powered leaf blowers and a powered lawnmower is part of routine maintenance of the facility. Use of this equipment would continue after implementation of the project.” (UC Berkeley 1992)

Noise impacts are considered differently between the daytime (before 10 p.m.) and nighttime (after 10 p.m.) because of the potential to impact sleep after 10 p.m. The Cal softball field would not be used after 10 p.m., as under existing conditions, and there is therefore no impact related to sleep disturbance. Competitive games already occur during the daytime (before 10 p.m.), and the existing noise from these games is the proper baseline against which to compare the project.

See Response to Comment B5-46 below for additional information.

B5-3 Comment. As for the Project’s lighting impacts, the DEIR fails to address the Project’s cumulative impacts on sky glow at all and the DEIR is insufficient in describing either the inputs it used for modeling the Project’s lighting affects or whether it compared the existing lower levels of lighting used for intramural activities at the softball facility to the new brighter lighting proposed for the Project.

Response. As indicated in Response to Comment B5-59, skyglow cannot be quantified on a cumulative basis. See Response to Comment B5-60 for a project-specific assessment of skyglow for the proposed project. Final EIR Appendix C, Response to Letter B5, Exhibit B (Lighting), provides the inputs used for modeling the proposed project’s lighting impacts. Additionally, as described in Response to Comment B5-62, the existing conditions for the proposed project include the use of the existing Cal Softball Field into the evenings for team practices and intramural use, which involves the use of existing field lights.

B5-4 Comment. PHA has retained several expert consultants to inform them as well as the University of any omissions or concerns with the DEIR’s assessment of noise and lighting impacts. Noise Consultant Derek Watry of noise consulting firm Wilson Ihrig has reviewed the DEIR’s noise discussion. Mr. Watry’s comments and curriculum vitae are attached as Exhibit A. Environmental Scientist Marc Papineau has reviewed the Project’s lighting configuration and the DEIR’s discussion of potential lighting impacts. Mr. Papineau’s comments and curriculum vitae are attached as Exhibit B. These comments also rely on

the extensive knowledge and experiences of the Panoramic Hill Association and its members regarding impacts associated with the University athletic events and facilities sited within Strawberry Canyon.

Response. The comment identifies the consultants used to prepare comments on the noise and lighting analyses provided in the Draft EIR, which are provided in Letter B5, Exhibits A and B. These comments are responded to in detail in Final EIR Appendix B and Appendix C by expert consultants. Appendix B has been prepared by Jonathan Leech of the environmental consulting firm Dudek. Mr. Leech is a member of the Institute of Noise Control Engineers [INCE] and has 40 years of experience with CEQA document preparation with a focus on noise analyses. Mr. Leech's curriculum vitae is also provided in Appendix B. Appendix C has been prepared by Dr. Darcie Chinnis, of the lighting consulting firm HLB lighting. Dr. Chinnis holds three degrees specifically focused on lighting engineering and has been practicing lighting design and analysis for nearly 20 years. She is an active member of many technical lighting organizations, including the Illuminating Engineering Society and the International Dark-Sky Association, and a sought-after subject matter expert in exterior lighting for various codes and standards development including California's Title 24 and Denver's Green Code. Dr. Chinnis' curriculum vitae is also provided in Final EIR Appendix C. Mr. Papineau does not have any degrees related to or focused on lighting engineering and is not a member of any technical lighting organizations. As such, nothing in his resume supports that he is a subject matter expert in exterior lighting. Responses to Comments provided in Letter B5, Exhibits A and B are also provided herein, based on Final EIR Appendices B and C. See Responses to Comments B5-37 through B5-54 and B5-56 through B5-87.

B5-5 Comment. The Project involves the demolition of the existing softball field, including the field, the existing bleachers for 350-spectators, batting cages, fencing, the restroom and storage structure, four 50-foot light towers, and most of the existing surface parking at the site. The bleachers and restroom/storage currently cover 2,410 square feet. The site would be graded, including the excavation and 2,500 cubic yards of soil and import of 4,600 cubic yards of fill. The Project would construct a new softball stadium consisting of the playing field, fencing, a concourse, press box, permanent seating for 1,500 spectators, six 70 to 90-foot tall towers and lights, and a new PA system. The concourse and press box would cover 30,500 square feet.

The Softball Facility would be used year-round. The most active period would be during the spring. Currently, the existing facility hosts 15-20 daytime intercollegiate softball events in the spring and 4 to 5 games in the fall. (DEIR, p. 3-27 [Table 3-2].) Currently there are no intercollegiate night games held at the facility nor any post-season games or multi-team invitational or regional play events. (Id.) The Project proposes to add up to 25 night games. (Id.) Up to 21 regular season games would be played in the spring each year at the Facility. (DEIR, p. 3-26.) About half the regular season games would be in-conference games, featuring up to five weekend series with two games each of those weekends, for a total of 10 in-conference games. (Id.) The other regular season games include up to 6 out-of-conference games. (Id.) One intercollegiate tournament is identified to occur in February of each year which would include up to 5 games, all of which could be played at night. (DEIR, p. 3-26.) If the team qualifies for postseason play, that would add another possible 4 night games to the schedule. (Id.) Although the Project proposes to allow up to 25 night games at the new Facility, the DEIR reviews the number of night games that Stanford women's softball, another Pac-12 team, actually plays at its facility was "approximately 11 games." (Id.) The DEIR states that "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." (Id.)

Response. The comment provides a summary of the project description, based on the commenter's understanding of Draft EIR Chapter 3, Project Description. Most of the information is accurately presented. However, there are a few points of clarification that need to be made to the summary provided by the commenter, as follows:

- The Softball Facility would be used year-round, as under existing conditions.
- The proposed light towers would be approximately 60- to 70-foot-high towers with lights at mounting heights of approximately 70 to 90 feet. The towers themselves would not be 70 to 90 feet, as stated by the commenter. The light towers would replace the existing light towers.
- The new PA system would replace the existing system.
- Regarding post-season play, under both existing and proposed conditions, post-season play is infrequent, as the team must qualify for the post-season (see Draft EIR Table 3-2). It's not accurate that no post-season games are played under existing conditions, as stated by the commenter. See Final EIR Chapter 2, Revisions to Draft EIR, for a new table note in Table 3-2. The new table note indicates that under both existing and proposed conditions, post-season play is infrequent, as the team must qualify for the post-season. To provide for a conservative analysis, the Draft EIR assumes that the proposed project could result in a net increase in up to four post-season games. However, there is nothing about the proposed project that would result in an increase in post-season games, given the requirement to qualify for the post-season.
- The Draft EIR conservatively assumes up to 25 games after dark per year (conservatively assuming four post-season games, as described above). While that is the case, information about the Stanford University schedule is provided to indicate what is a more likely condition and to demonstrate that the Draft EIR analyses are based on conservative assumptions. The Draft EIR conservatively assumes up to 25 games resulting in play after dark per year even though the number of night games played by Stanford women's softball, another Pac-12 team, at its facility was "approximately 11 games" (see Draft EIR Chapter 3, Project Description, Subsection 3.6.4). Stanford is a top ranked softball team in the Pac-12, well above Cal and therefore Cal is likely to have fewer games than Stanford (PAC-12 2024).

See Chapter 2, Revisions to Draft EIR, of this Final EIR for minor revisions to Draft EIR Chapter 3, Project Description related to Table 3-2. See also Response to Comment B5-19 regarding the number of games evaluated.

B5-6 Comment. According to the DEIR, average attendance for softball games during the regular spring season currently is about 500 spectators per game based on games between 2016 and 2022. (DEIR, p. 3-4.) The DEIR indicates that the existing 350 bleacher seats can be supplemented with portable seats for a temporary capacity of 1,340 spectators. (Id., p. 3-3.) The new stadium would have permanent fixed seats for 1,500 spectators and an assumption that the average number of Spring season spectators would be about 1,000 people for each event. (Id., p. 3-27.) Fall games currently attract about 300 spectators which is assumed also to double to an average of 600 people with the new facility. (Id.) Softball team practices would occur throughout the fall and spring. (Id.) The PA system would be used for both games and practices. (Id., p. 3-24.)

In addition to the intercollegiate women's softball, the facility would continue to host intramural softball, camps and clinics, and during the summer, youth camps. (Id., p. 3-27.) The field lights would be operated every day during the school year until 10 pm in order to support the intramural use. (Id.)

Response. The comment provides additional information summarizing the project description, based on the commenter's understanding of Draft EIR Chapter 3, Project Description. Most of the information is accurately presented. However, regarding portable seating, the Draft EIR indicates that during the softball season and depending on expected attendance of the games, portable bleachers are installed in Witter Lot, and can increase capacity of the field to 1,340 seats. These portable bleachers are installed every year in January and removed in May, after the Spring Season ends. The amount of seating is dependent on likely team performance and expected attendance. In addition, the existing PA system is currently used for both games and practices, and the new PA system would be used in the same way.

Finally, the field lighting is already routinely used throughout the year for intramural games and practices. UC Berkeley analyzed the impacts of the existing softball field in the 1992 IS/ND. The project was described as:

"The proposed project would improve the Strawberry Canyon Recreation Area by removing the existing tennis courts, enlarging the existing grass field area, developing a new softball field and reconfiguring the parking areas. The project also includes construction of a new restroom and new pedestrian pathways. The existing lighting system for the field area would be modified by repositioning existing poles and adding new fixtures around the newly expanded field areas. Night safety lighting in the parking area and along the pedestrian pathways would also be installed." (UC Berkeley 1992)

The 1992 IS/ND (Section 2.2) explains prior to construction of the existing softball field, the field area was:

"...also utilized for other types of intramural sports activities, such as ultimate frisbee, and for various children's programs. During the evenings, activities are routinely scheduled up until 10 pm, Monday through Friday throughout the year. The field lights are manually switched on at dusk and required to be manually switched off by 10 pm." (UC Berkeley 1992)

The 1992 IS/ND (Section 3.7) lighting analysis concluded that "The proposed project would not produce significant amounts of new light and glare. The field area and tennis courts are currently lighted during the evenings." It explained that:

"As part of the proposed project, some of the existing light poles around the field areas would be repositioned and new light poles would be added in order to maintain the light intensity to a Recreational League" level. The new light poles would be approximately 30 feet high and equipped with horizontal cut-off light fixtures. The field lights would be equipped with automatic timers and would shut off at 10:00 p.m. Additionally, there would be parking and pathway lights that would be on from dusk to dawn. These fixtures would be hooded to conceal the light source.

The modifications to the lighting system and additional safety lighting in the parking area and along the pathway would not measurably increase the intensity of the light (in terms of foot candles) on the project site. As described above, all new light fixtures would be equipped with design features to minimize spillover light and glare so that no significant impact on the adjacent residential area would result." (UC Berkeley 1992)

As such, the existing conditions are a lighted softball field that is routinely used for intramural games and softball practices until 10 p.m.

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B5-7 Comment. According to the DEIR, “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.” DEIR, p. 3-4: (NCAA 2011). According to the NCAA documents, “[a]ll footcandle levels are target minimum averages.” NCAA Best Lighting Practices (Papineau Comments, Attachment B [attached hereto as Exhibit B].) Although not mentioned in the EIR, the lighting levels for a national championship game are higher.

Response. See Response to Comment B5-57.

B5-8 Comment. The DEIR contains a clear statement that “[n]on-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.” DEIR, p. 3-2. PHA believes this is an important restriction on the use of the facility. Accordingly, this commitment should be included in the enforceable mitigation measures and monitoring program for the Project.

Response. Establishing the programming and operational characteristics of the proposed project is a component of Draft EIR Chapter 3, Project Description. Chapter 2, Revisions to Draft EIR, of this Final EIR provides minor revisions to Draft EIR Chapter 3, Project Description related to Table 3-2. These revisions clarify that special events and rentals are “softball-related event rentals.” Inclusion of a mitigation measure that includes a restriction on the use of the project for concerts or other similar entertainment uses is not required to address an identified significant impact. The proposed project is not designed or intended to support concerts or other similar entertainment uses and therefore the environmental impacts of such uses need not be evaluated in the Draft EIR. The project is a softball field for the Cal women’s softball program and will not be considered as a venue for concerts. As stated in the Draft EIR Chapter 3, Project Description (Subsection 3.2) “Non-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site.” The proposed project approval documents will include the project description, which states that the venue will not be considered for concerts.

B5-9 Comment. “The ‘foremost principle’ under CEQA is that the Legislature intended the act ‘to be interpreted in such a manner so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.’” (*Laurel Heights Improvement Assn. v. Regents of Univ. of Calif.* (1988) 47 Cal.3d 376, 390 [“Laurel Heights I”] [citation omitted].) With certain exceptions, CEQA requires an agency to analyze the potential environmental impacts of proposed projects in an EIR. (Public Resources Code (“PRC”) § 21100.) The EIR is “the heart of CEQA” and the “primary means” of ensuring that public agencies “take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state.” (*Laurel Heights I*, 47 Cal.3d at 392.) Adherence to the EIR process ensures that “the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees.” (*Id.*)

CEQA has two purposes. First, CEQA is designed to truthfully inform the public about the potential environmental effects of a project. (CEQA Guidelines § 15002(a)(1).) “Thus, the EIR ‘protects not only the environment but also informed self-government.’” (*Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal. 3d 553, 564.) Second, CEQA requires agencies to reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and mitigation measures. If the project will have significant effects, the agency may approve the project only if it makes express findings that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects are “acceptable due to overriding concerns.” (PRC § 21081.)

Response. UC Berkeley prepared the Draft EIR to analyze the potential environmental impacts associated with renovating an existing softball field. A Notice of Preparation (NOP) for the Draft EIR was circulated for a 33-day scoping 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 EIR was held on November 17, 2022. The 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 Wednesday December 13, 2023, and ending Monday, January 29, 2024. All of the public comments on the Draft EIR are responded to in this Chapter 3 of the Final EIR. Therefore, the public was fully informed of the potential impacts of the project.

The Draft EIR includes four mitigation measures and numerous UC Berkeley continuing best practices, and analyzed four alternatives. The Draft EIR identified two significant and unavoidable impacts. In order to approve of the project, the Regents must adopt a statement of overriding considerations. “An EIR is presumed adequate; the challenger in a CEQA action bears the burden of proving otherwise.” *North County Advocates v. City of Carlsbad* (2015) 241 Cal.App.4th 94, 100. As explained in Responses to Comments B5-37 through B5-87 the commenter has not provided any substantial evidence of an impact that has not been properly and fully analyzed and disclosed.

- B5-10** Comment. A. The DEIR’s Discussion of the Project’s Potential Noise Impacts is Insufficient, Fails to Address the New Noise Impacts of Additional Games and Night Games, and, in Several Important Instances, is Not Supported by Substantial Evidence.

Mr. Watry’s expert review of the DEIR’s noise discussion and Noise Appendix discloses a number of omissions and flaws that render it insufficient pursuant to CEQA. (Watry Comments, Exhibit A.) PHA requests that the University address each of these flaws and recirculate the noise analysis for additional public comment before finalizing the EIR.

Response. See Responses to Comments B5-37 through B5-54 that individually address each of the comments in Letter B5 (Exhibit A). See also Final EIR Appendix B for these responses.

The University is not required to recirculate the Draft EIR, as the triggers for recirculation under CEQA Guidelines Section 15088.5 have not been met. Specifically, a new significant impact or a substantial increase in the severity of a previously identified impact have not been identified, as described in CEQA Guidelines Section 15088.5(1) and (2).

- B5-11** Comment. 1. The DEIR’s Evaluation of Events That Replace the 20 Existing Softball Games at the Existing Facility Fails to Disclose the Actual Crowd and PA Noise Baseline From Which to Measure the Impacts of the Project.

Initially, Mr. Watry ran into difficulty reviewing the various noise conclusions in the DEIR because it does not disclose any actual measurements of noise levels resulting from past softball games. Instead, the DEIR claims to identify crowd noise levels by lifting numbers from “applicable research papers” submitted to an Institute of Noise Control Engineers conference in 1991, referencing Hayne et. al. 2011. (DEIR, p. 4.5-23.) At my request, UC Planning promptly provided the referenced Hayne paper. However, that paper makes clear that it only sets forth “equations that are suitable for use by consultants to predict the noise emissions from small to medium sized crowds (up to 100 people) located in outdoor spaces.” (Hayne et al. 2011, pp. 1, 6.) Indeed, the number of patrons at the venues used to prepare the paper ranged from

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10 to 93 patrons and did not contain “any other significant noise sources” from the patrons, such as a public address system. Nor does the DEIR inform readers of the suggested noise levels presumably lifted from that paper. (Watry Comment, p. 2.) Mr. Watry points out that the DEIR states that the PA volume levels will be operated at 6 dBA above the spectator sound levels. (Id., p. 3.) Obviously, without disclosing the underlying spectator volume, the relative increase in noise fails to disclose the Project’s expected noise levels. (Id.)

Response. The noise analysis in the Draft EIR was prepared by expert Jonathan Leech, a member of the Institute of Noise Control Engineers (INCE) with over 20 years of focused experience in noise assessments. See Responses to Comments B5-39 through B5-41 for a discussion of inputs and methods used in the SoundPlan model to predict exterior noise levels at vicinity residences under the three evaluated scenarios: typical weekday use, typical event (average attendance competition softball game), and maximum event (maximum attendance competition softball game). The underlying spectator volumes used in the model are included in Response to Comment B5-39 and are also specifically identified in the SoundPlan model inputs contained in Final EIR Appendix B.

B5-12 Comment. The DEIR also hides its analysis behind a generic reference to the use of the SoundPlan model. As Mr. Watry notes, the SoundPlan model is an appropriate model to evaluate the Project. But, without disclosing the inputs to the model and a description of how various features of the Project and the topography surrounding Strawberry Canyon were taken into account when applying the model, it is impossible for the public to review the merits of the modeling and whether it accurately reflects the existing conditions and the Project’s operations.

Response. See Responses to Comments B5-39 through B5-41 for a discussion of inputs and methods used in the SoundPlan model. It is not standard practice to include every technical SoundPlan model input in a Draft EIR. In response to this comment, the inputs are included in Final EIR Appendix B. As explained in Response to Comment B5-40, the topography of the surrounding area was taken into account in the model and the results are representative of anticipated noise levels under the typical and maximum scenarios.

B5-13 Comment. This black box approach to discussing the Project’s noise impacts is especially concerning because the DEIR explicitly describes only the most basic science of noise attenuation and only mentions topology as an “obstacle” that can block sound (DEIR, p. 4.5-24), not as a factor that can enhance sound transmission which is the case here. (Watry Comment, p. 3.) The DEIR asserts that noise from softball games will attenuate at 6 dB per doubling of distance over hard surfaces and 7.5 dB per doubling over soft surfaces. (DEIR, pp. 4.5-3, 4.5-24.) As Mr. Watry points out, those values only apply to flat topology. (Watry Comment, p. 3.) None of the area around the Project is flat for noise purposes. As a result, in conjunction with the omitted baseline and input information, it is not apparent that the DEIR takes into account the steep topology encompassing the Project.

Response. See Responses to Comments B5-40 through B5-41 for a discussion of topographic data inputs used in the SoundPlan model to predict resulting softball game noise levels at vicinity residences. The general attenuation with distance formulas were provided in the Draft EIR for informational purposes. The SoundPlan model takes topography into account and the default attenuation values were not used in the operational analysis.

B5-14 Comment. “The EIR must contain facts and analysis, not just the bare conclusions of a public agency.” (*Santiago Cty. Water Dist. v. Cty. of Orange* (1981) 118 Cal.App.3d 818, 830.) “An agency’s opinion concerning matters within its expertise is of obvious value, but the public and decision-makers, for whom the EIR is prepared, should also have before them the basis for that opinion so as to enable them to make an independent, reasoned judgment.” (Id.) For these reasons, the DEIR’s noise discussion should be supplemented and recirculated for public review and comment.

Response. The EIR includes a full analysis of construction and operational noise in Draft EIR Section 4.5, Noise. This is not a “bare conclusion” as was the issue in *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818. In that case, the EIR lacked critical information about the water supply, namely a description of the facilities that will have to be constructed to deliver water to the mining operation, or facts from which to evaluate the pros and cons of supplying the amount of water that the mine will need.” *Santiago County Water District* at 829. Here, the EIR includes all the information on the size of the proposed project, as well as the expected usage under the typical scenario (based on average attendance) and the maximum scenario (based on seating capacity). Specifically, Draft EIR Chapter 3, Project Description, Table 3-2 provides the average attendance under existing and proposed project conditions used to develop the typical scenario. Section 3.2, Project Overview, provides the seating capacity under existing and project conditions used to develop the maximum scenario. Draft EIR Section 4.5, Noise analyzes the typical and maximum scenarios (see Tables 4.5-16 and 4.5-17), explains how the analysis was conducted, and provides outputs from the models in Draft EIR Appendix G. In response to comments on the Draft EIR, detailed specific modeling inputs to SoundPlan have been provided (see Final EIR Appendix B). Therefore, the University’s noise analysis is not based on bare conclusions but is instead based on a robust and thorough analysis of potential impacts of the fully described project. For these reasons, the University is not required to revise and recirculate the noise analysis in the Draft EIR.

B5-15 Comment. 2. The DEIR’s Use of FICON’s Noise Criteria Recommendation for Airport Noise Effects as a Significance Threshold for The Project’s Noise Impacts is Not Based on Substantial Evidence.

The DEIR’s own noise analysis establishes that the proposed noise levels of the Project will exceed the City of Berkeley’s Exterior Noise Limits. Rather than address that significance threshold and impact head on, the DEIR misstates the City’s ordinance and casts about for a more sympathetic significance threshold. These efforts to avoid the City’s ordinance as an appropriate threshold of significance are not supported by reason or substantial evidence.

First, the DEIR attempts to limit the applicability of the City’s “Exterior Noise Limits” as only applying to “stationary noise sources.” (DEIR, p. 4.5-18.) For example, the DEIR’s lead-in reference to the City’s limits suggests that they only apply to stationary sources: “Permanent stationary noise sources in Berkeley are regulated by Municipal Code Section 13.40.050, Exterior Noise Standards.” (Id.) The DEIR doubles down on this characterization, referring to the Exterior Noise Limits as “the City of Berkeley’s stationary noise limits.” (Id.)

There is no such limit on the application of the City’s Exterior Noise Limits. Nothing in the express purposes and intent of the City’s noise ordinance suggests the limits are designed or only applicable to “stationary sources.” (Berkeley Muni. Code § 13.040.010.) Moreover, the express language of various code sections demonstrates the fallacy of the DEIR’s assertion. Indeed, “Loudspeakers (Amplified Sound) Not Associated With an Event” are specifically prohibited from exceeding the Exterior Noise Limits established in Section 13.40.050. (§ 13.040.070(B)(2).) Loudspeakers for an event within Berkeley would be required to obtain a permit, which if issued at all, would limit the amplified sound of the event from exceeding “15 dBA above

the ambient noise level measured at the exterior of any dwelling unit located on any residential property; and in no case to exceed 65 dBA at the exterior of any such building...” (§ 13.040.100(B)(5)(a). “On public property such sound may not exceed 15 dBA above the ambient noise level measured at any point 50 feet from the sound amplifying equipment.” (§ 13.040.100(B)(5)(b)). In no event would the City issue a permit for an event that went past 8 p.m. in the evening. (§ 13.040.100(B)(3). The final blow to the DEIR’s strained interpretation of the City’s noise ordinance is its failure to acknowledge that the ordinance specifically addresses stationary equipment at section 13.40.070(B)(7) and sets forth specific noise limits from such equipment. (§ 13.40.070(B)(7) (“Stationary Equipment. Maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment...; id., Table 13.40-4.)

As is clear from these provisions of the City’s Noise Ordinance, there is no limitation to apply the Exterior Noise limits to “stationary sources.” In fact, were the Project within the City’s jurisdiction, the City’s event permit noise limits would plainly apply up until 8 pm (assuming a permit were issued) and after that, the Exterior Noise Limits would apply.

Response. The proposed project is not within the City of Berkeley’s jurisdiction, and there is no requirement for the University to comply with the City’s noise ordinance for operation of the softball field. UC Berkeley’s Continuing Best Practice NOI-1 does require noise from mechanical equipment to comply with the City of Berkeley Noise Ordinance limits, and therefore the Draft EIR uses those limits in its analysis of stationary mechanical systems such as heating, ventilation, and air conditioning (HVAC).

UC Berkeley is not required to obtain a permit from the City of Berkeley to operate loudspeakers at an event within the University’s jurisdiction. The existing “softball facility is equipped with an amplified sound system which is used for playing music during pre-game practice and for announcements during softball competitions” (IS/ND Section 3.6) (UC Berkeley 1992). Project pre-game music sound levels would be the same as the existing conditions. The project could result in greater noise levels from public address announcements delivered to an increased number of spectators. However, the new public address system is designed with more precise speaker orientation to provide coverage for spectator seating areas with less spill-over to surrounding areas. Even if UC Berkeley were required to comply with the City of Berkeley’s noise ordinance, which it is not, as shown in Draft EIR Table 4.5-17, the only location that exceeds 65 dBA during games (under maximum conditions) is LT1, and the noise at that location would be reduced as a result of the project from 69.7 to 67.2 dBA L_{eq} because the new bleachers will shield residents to the south from noise more than the open back temporary bleachers that are used under existing conditions, and the orientation of the new public address system. All other locations, under all scenarios, would result in noise levels less than 65 dBA. Moreover, none of the noise levels are more than 4.1 dBA L_{eq} over existing conditions at any location, under any scenario. See Response to Comment B5-43 for additional information.

See Responses to Comments B5-42 through B5-47 that explain the appropriate use of the FICON significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use), that explain the difference between periodic game events of short duration noise compared to stationary noise sources that operate for large portions of most or every day, and which reiterate that softball game noise levels at area residences would remain below the identified significance threshold, and would therefore constitute a less than significant impact. See also *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 192, that classified crowd noise and traffic noise as mobile operational noise sources. Stationary sources in that project included “back-up diesel generators for maintenance purposes and mechanical equipment as well as the operation of public

address systems and amplification equipment not only interior to the event center but also for occasional outdoor performances and events at the proposed Third Street plaza.” *Id.* Here, while there could be a change in the noise from operation of the PA system as a result of the project, the project proposes more precise speaker orientation to provide coverage for spectator seating areas with less spill-over and therefore less noise to surrounding residential areas than the existing speaker system. A change in the PA system alone, with no increased number of spectators, would not result in any noise impacts because the noise would be reduced as compared to existing conditions based on the new orientation. The primary operational change that has the potential to increase noise is the increased number of spectators. The increased spectator noise is therefore appropriately analyzed using the same FICON thresholds that are used for the traffic noise that results from an increased number of vehicles on the road.

B5-16 Comment. In addition to the clumsy attempt to reinterpret the City’s noise ordinance, the DEIR then proposes to replace the City’s clear noise standards for federal significance recommendations made in a report issued in 1992 by the Federal Interagency Committee on Noise (FICON) entitled “Federal Agency Review of Selected Airport Noise Analysis Issues.” (See DEIR, p. 7-5.) Whatever levels of annoyance of noise from jet aircrafts flying overhead may have been evaluated in the Airport Noise Analysis certainly are not analogous to the steady crowd and PA noise for a 2.5 to 3 hour softball game attended by 1,000 to 1,500 people. The analogy is even more tenuous from a technical perspective, as Mr. Watry points out:

the noise measurement metric used in this study is the Community Noise Equivalent Level (CNEL), a 24-hour, weighted average. There is nothing in the DEIR to support the contention that the allowable noise exposure increases using this daily metric are applicable to softball games that take several hours.

(Watry Comments, p. 3.)

Response. See Responses to Comments B5-42 through B5-45 that explain the appropriate use of the FICON significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use). The University has not reinterpreted the City of Berkeley’s Noise Ordinance. The University’s Continuing Best Practice NOI-1 requires noise from mechanical equipment to comply with the City of Berkeley Noise Ordinance limits and the University therefore uses City of Berkeley’s Noise Ordinance to analyze impacts of noise from mechanical equipment. The University does not have a Continuing Best Practice that requires noise from spectators to comply with the City of Berkeley’s Noise Ordinance. As such, the University exercised its discretion to select a more appropriate threshold of significance, the FICON standard, that is routinely used as a threshold of significance for evaluating changes in community noise levels from contributors such as roadway traffic and sporting events.

B5-17 Comment. As a result, the DEIR’s effort to explain why it chooses to use the City’s Exterior Noise Limits as significance thresholds for stationary mechanical equipment but not for the amplified events at the Facility is without any evidentiary basis and an abuse of discretion. The DEIR’s effort to justify using the FICON airport standard and a 24-hour average as the sole threshold for evaluating the noise impacts of the Project’s spectators and PA is an abuse of discretion. This self-serving effort by the University to apply its discretion to select a noise threshold of significance violates CEQA. “[T]he discretion to choose thresholds of significance [is] ‘substantial,’ but that discretionary authority is not unlimited or absolute.” (*King & Gardiner Farms, LLC v. Cnty. of Kern* (2020) 45 Cal.App.5th 814, 893.) “[A] lead agency [is] required ‘to support its chosen quantitative method for analyzing significance with evidence and reasoned argument.’” (*Id.*, quoting *Ctr. for Biological Diversity v. Dep’t of Fish & Wildlife* (2016) 62 Cal.4th 204, 228.) “[W]hen the agency chooses to rely completely on a single quantitative method to justify a no-significance finding,

CEQA demands the agency research and document the quantitative parameters essential to that method.” (Id. See also *Berkeley Keep Jets Over the Bay Comm. v. Bd. of Port Comm'rs* (2001) 91 Cal.App.4th 1344, 1373, 1381–83 [even for an airport project, Court rejects sole use of FICON recommendation and CNEL-based threshold as a proper threshold of significance].) The DEIR’s noise discussion studiously avoids mentioning the limited applicability of the FICON recommendation to airplane impacts. The only objective significance thresholds for noise impacts on nearby residents within the City of Berkeley are the City’s Exterior Noise Limits which in fact apply to those parcels. (Watry Comments, pp. 4-6.)

Response. See Responses to Comments B5-42 through B5-45 that explain the use of the FICON based significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use).

The University did not abuse its discretion in choosing to use the established FICON standard to evaluate the increase in noise that would result from renovation of the existing softball field. As explained in Response to Comments B5-42 through B5-45, consistent with *King & Gardiner Farms LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 893, UC Berkeley’s choice of threshold is supported by substantial evidence.

As explained in *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 194, “[the CEQA Guidelines support the use of an increment-based approach.” *Mission Bay* expressly upheld the use of an incremental standard (operational noise from non-transportation sources such as egress of patrons from events or sound amplification equipment in common areas are assessed based on noise increases of 8 dBA over existing ambient), noting that like here, “[t]he incremental standard applied in the FSEIR does not ignore the severity of existing noise levels.” *Mission Bay* at 354.

The FSEIR in *Mission Bay* explained that the “existing-plus-project increment thresholds are appropriate to assess operational noise under CEQA is because Appendix G of the CEQA Guidelines inquires whether the proposed project would result in a ‘substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.’ Here CEQA suggests that an appropriate threshold to apply is an increase over existing ambient noise levels without the project but leaves the determination of the quantitative threshold to be applied at the discretion of the lead agency.” The court held that “This explanation is entirely reasonable and amply supports the city’s selection of the incremental standard of significance.” *Mission Bay* at 354.¹

Here, the University used the FICON standard to assess both crowd noise and traffic noise. It is more stringent than the threshold the City of San Francisco used (increase of 8 dBA) and its use by UC Berkeley is consistent with standard practice, the CEQA Guidelines, and case law.

The commenter cites to *Berkeley Jets*, which is a case that addresses sleep disturbance from nighttime flights. There are no nighttime (after 10 p.m.) games, and sleep would not be disturbed as a result of the project.

¹ The current Appendix G question is “Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?” As noted above, the FICON standard takes into account the absolute level of existing noise and the University does not have any other established noise standards. The University is not required to comply with the City of Berkeley’s noise ordinance.

In *Berkeley Jets*, the court noted that “the EIR contained no quantitative discussion of ambient noise levels in any nearby community. Instead, as explained in a written response to public comment on the draft EIR’s noise analysis, the significance criteria used in the EIR automatically excluded ‘all residential uses within the 65 CNEL contour regardless of the change in noise; due to the ADP.’” *Berkeley Keep Jets Over the Bay Committee v. Board of Port Com’rs* (2001) 91 Cal.App.4th 1344, 1381. That is not the case here, where the University’s noise analysis considers the change in noise as a result of the proposed project at all receptors in the vicinity of the project site. As explained in Response to Comments B5-42 through B5-45, the FICON standard accounts for the absolute noise level, and there is an adjusted threshold for the relative allowable increase over ambient depending on the existing noise level.

B5-18 Comment. 3. The DEIR Fails to Sufficiently Analyze the Significant Noise Impacts That Result from the Project.

As a result of the above errors, the DEIR’s analysis of the noise impacts of the 20 games in the new Facility that would replace the existing number of games played at the current facility, is not supported by substantial evidence and is insufficient. In order to evaluate the impacts of these replacement games, the DEIR must provide substantial evidence and a sufficient explanation establishing the existing noise levels and number of occurrences from the existing number of games, justify the use of any significance threshold other than the readily applicable Berkeley Exterior Noise Limits, apply an appropriate attenuation rate for the Project area, and provide sufficient explanation of its modeling effort.

The even more obvious flaws are the DEIR’s failure to 1) identify and address the new noise impacts of the 5 additional games that are expected to occur as a result of the Project, and 2) identify and address the new noise impacts of the 11 to 25 night games beginning after 5 pm proposed to be added by the Project.

Response. As explained above, the Draft EIR and these response to comments provide substantial evidence to support the existing noise levels used in the analysis. See Responses to Comments B5-42 through B5-45 for substantial evidence to support the use of the readily applicable incremental FICON standards for spectator noise impacts. See Response to Comment B5-40 for an explanation of the attenuation rate that was used for the project area, and a detailed explanation of the noise modeling prepared for the project.

The Draft EIR did not fail to analyze the new noise impacts of the proposed project. See Response to Comment B5-2 above and B5-19 below.

B5-19 Comment. a. The Noise Impacts of the Five New, Additional Games Proposed by the Project Are Not Evaluated by the DEIR.

The Project proposes to approve an additional five new games per year beyond the 20 that currently occur each year at the existing softball facility. PHA agrees that 20 daylight games are part of the existing conditions of operating the current softball facility. As a result, comparing the sound levels from 20 future daylight games at a new Facility to the existing sound levels of 20 games at the current facility is appropriate. However, there are no existing games and noise that would offset the new noise from the five new, additional events, even if they were all played during daylight. Four of the five additional events are included due to post-season play. As a result, assuming the validity of the DEIR’s noise modeling, if the five additional events are “maximum events” (maximum attendance), then noise levels from those 5 new events per year will exceed Berkeley’s Exterior Noise Limits at 12 of the 15 receivers (DEIR, p. 4.5-34,

Table 4.5-17; Watry Comments, p. 4.) Assuming the five new events are typical events, then noise levels from those 5 new events per year will exceed Berkeley's Exterior Noise Limits at 10 of the 15 analyzed receivers. (DEIR, p. 4.5-33, Table 4.5-16; Watry Comments, p. 4.)

As a result, for the five new events, the DEIR fails to address the noise levels from these new events at all and fails to acknowledge the new significant noise impacts that will result from adding five more days where Berkeley's noise limits will be exceeded for numerous residences on Panoramic Hill.

Response. The commenter agrees that the existing baseline includes noise from competitive softball games. This is appropriate, because the only change in use of the existing field is an increase in capacity for spectators at those games. The Draft EIR analyzes the impacts from the increase in spectators in a typical and maximum scenario.

The commenter misinterprets Table 3-2 in the Draft EIR. Under existing conditions, the softball field is used for approximately 20 regular season games per year, with an unquantified number of post season games, which are dependent on performance and are "infrequent." For the proposed project, the renovated softball field would be used for up to 21 regular season games, and post season play, which is also characterized as "Infrequent, depends on performance." Under existing conditions, there could be 24 games or more² if the Cal women's softball team made the playoffs and those playoff games were held at home. The fact that the renovated field might be used up to 25 times a year instead of 24 times a year to host competitive games does not change the impact conclusions in the Draft EIR.

To clarify Table 3-2, Final EIR Chapter 2, Revisions to Draft EIR, includes a new table note in Table 3-2. The new table note indicates that under both existing and proposed conditions, post-season play is infrequent, as the team must qualify for the post-season. To provide for a conservative analysis, the Draft EIR assumes that the proposed project could result in a net increase in up to four post-season games. However, there is nothing about the proposed project that would result in an increase in post-season games, given the requirement to qualify for the post-season.

As explained above in Response to Comments B5-2 and B5-6, the existing softball field was constructed in 1995 and the environmental impacts from daily use of the fields were analyzed in the 1992 IS/ND. That analysis (IS/ND Section 2.2) noted that prior to renovation in 1995 "The field and tennis courts are equipped with lighting systems and used on a regular basis during the evenings."

² The Cal women's softball team played 22 home games in the 2022 season, and was eliminated from the playoffs in the regional semifinals (California Golden Bears Athletics 2024).

The 1992 IS/ND (Section 2.2) also noted that:

“The field area is used on a seasonal basis for intercollegiate rugby, soccer and softball practice and competitions sponsored by the Department of Intercollegiate Athletics and Recreational Sports. Throughout the year, the field is also utilized for other types of intramural sports activities, such as ultimate frisbee, and for various children's programs. During the evenings, activities are routinely scheduled up until 10 pm, Monday through Friday throughout the year” (UC Berkeley 1992).

The 1992 IS/ND (Section 2.4) did note that “the night time operating hours of the field would not change as a result of the project. As a result of scheduling changes described above, however, overall use of the field, particularly during the evenings, is expected to be reduced.” However, the number of games was not capped, and the Initial Study (Section 3.6) noted that “[t]he field area would continue to be used for intercollegiate and intramural sports activities and the level and types of various sports-related noises generated at the site would, therefore, generally remain constant” (UC Berkeley 1992).

The commenter cites no authority for its claim that 5 “new” games per year are required to be evaluated separately. While the Draft EIR conservatively analyzes a baseline of approximately 15-20 games under existing conditions, there are no limitations on the number of games that could be played at the field currently. In fact, there were 22 games scheduled at home for the 2024 Cal women’s softball season (California Golden Bears Athletics 2024). As such, commenter’s reliance and focus on the perceived “increase” of 5 games is misplaced because based on current conditions, the University could host more than 25 games a year at the existing softball field. As such, using the noise levels from an existing game as the existing baseline condition for all new games is appropriate. This is consistent with *North County Advocates v. City of Carlsbad* (2015) 241 Cal.App.4th 94, 102-103 that upheld an existing baseline condition that assumed full occupancy of a then vacant shopping center “because the currently vacant space could be occupied at anytime without discretionary action. In fact, portions of that space are periodically occupied with temporary uses such as a Halloween store which leases the space in the month of October.” Here, the field is used almost everyday, and could be used for competitive softball games for even more than 25 days a year under existing conditions.

Finally, as explained in Response to Comment B5-15 above, the University is not required to, and did not, use the City of Berkeley’s noise limits as a threshold of significance for the increased spectator noise from the renovation of the existing softball field. As noted in the Draft EIR, the City of Berkeley’s noise limits are already exceeded under existing conditions at many of the receivers analyzed (see Draft EIR Tables 4.5-16 and 4.5-17).

B5-20 Comment. b. The Noise Impacts of the 25 New Night Games Proposed by the Project Are Not Evaluated by the DEIR.

Similarly, the DEIR does not address the noise impacts of its proposal to add from 11 to 25 night games at the new Facility. The addition of up to 25 new night games results in numerous intercollegiate games occurring at times when currently no events occur. Hence, for these newly scheduled night games, any noise generated by the Project would be a new addition to the conditions at and around the Project site at night.

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Response. See Responses to Comments B5-2 and B5-19 above. The existing softball field is routinely used in the evenings for intramural games and practices. Moreover, the softball field will not be used at night (after 10 p.m.) and there is no separate threshold that applies to games that occur between 7 p.m. and 10 p.m.

B5-21 Comment. The City of Berkeley's municipal code establishes exterior noise limits for the Panoramic Hill neighborhood and the Environmental Safety – Residential zoning area of 55 dBA during the daytime (7:00 a.m. to 10:00 p.m.) for noise levels exceeding 30 minutes in duration in any hour. (Berkeley Muni. Code § 13.40.050(A)(2)(a) & Table 13.40-1.) The ordinance prohibits at any time any noise exceeding 75 dBA during the daytime hours. (BMC § 13.40.050(A)(2)(e).) For noises occurring for more than 15 minutes in any hour, the ordinance limits daytime levels to no greater than 60 dBA during the day (BMC § 13.40.050(A)(2)(b).) For noises occurring for more than 5 minutes in any hour, the ordinance limits daytime levels to no greater than 65 dBA during the daytime. (BMC § 13.40.050(A)(2)(c).) For noises occurring for more than 1 minute in any hour, the ordinance limits daytime levels to no greater than 70 dBA. (BMC § 13.40.050(A)(2)(d).)

Response. The University is not required to comply with the City of Berkeley's noise ordinance and did not use it as a threshold for the increase in spectator noise as a result of the increased number of spectators. See Responses to Comments B5-15 through B5-17 and B5-43 through B5-47 that explains why application of the Berkeley Exterior Noise Limits governing permanent stationary noise sources would not be appropriate as a threshold for infrequent (no more than 25 occurrences per year) crowd noise of limited duration (less than 3 hours) competitive softball game events.

B5-22 Comment. According to the DEIR Noise Appendix, existing ambient levels in the adjacent neighborhoods range from 47.1 to 54.1 dBA Leq from 7 pm to 10 pm. (DEIR, Noise Appendix; Watry Comments, p. 5.) Any softball game will include noise levels in excess of 55 dBA for more than 30 minutes in any hour. Thus, for the proposed 25 new night games, assuming the validity of the DEIR's noise modeling, if the night games are typical events, then noise levels from those 25 new night events per year will exceed Berkeley's Exterior Noise Limits at 10 of the 15 analyzed receivers. (DEIR, p. 4.5-33, Table 4.5-16; Watry Comments, p. 4.) If some or all of the night events are "maximum events" (maximum attendance), then noise levels from each of those new night events per year will exceed Berkeley's Exterior Noise Limits at 12 of the 15 receivers (DEIR, p. 4.5-34, Table 4.5-17; Watry Comments, p. 4.)

Response. See Responses to Comments B5-46 and B5-47, where Dudek's noise expert explains that Mr. Waltry's analysis is incorrect. Specifically, the commentor is wrong that softball game noise should be compared to an average noise level derived from recorded ambient noise levels only in the period between 7 p.m. and 10 p.m. There is no basis to select the time period between 7-10 p.m. to construct an average ambient noise level for comparison to game noise. This period has no correlation to existing noise regulations for any jurisdiction in Alameda County just as (for example) using an average ambient noise level based on simply noon-3 p.m. as the basis makes no sense, because it also has no foundation in noise regulations or standard practice. The ambient average noise levels based on a daytime time range of 7 a.m. to 10 p.m., by comparison, is standard practice because it is assumed that people may be sleeping after 10 p.m. and would be more sensitive to noise during this time, and is therefore appropriate. Games may occur during any portion of daytime, with each concluded before 10 p.m., and therefore the daytime average noise level (from 7 a.m. to 10 p.m.) is appropriate to compare game noise against.

B5-23 Comment. Even applying the DEIR's unsubstantiated FICON airport standards to the 25 new night games, the noise monitoring reported in the DEIR's Noise Appendix shows that a new softball event will increase the Leq noise level by more than the applicable 3 and 5 dB limits beyond the existing ambient noise levels at a majority of the measured receptor sites. Applying the DEIR's FICON-based analysis for the proposed 5 new games, Dr. Watry calculates that typical events will exceed the FICON-based criteria at 7 of the 15 receptor sites. (Watry Comments, p. 5.) For maximum events, noise levels would exceed the FICON-based criteria at 11 of the 15 receptor sites. (Id.)

Response. See Responses to Comments B5-42 through B5-47 that explain the use of the FICON based significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use), that repudiate the establishment of a separate "evening" noise period upon which to apply unique noise limits, and which reiterate that softball game noise levels at area residences would remain below the identified significance threshold, and would therefore constitute a less than significant impact. It is only when project game noise is compared to an erroneous "ambient" noise level (i.e., measured noise levels exclusively between 7 p.m. and 10 p.m. with no activity at the existing softball field) that increases greater than the FICON thresholds (such as commenter's asserted and incorrect increase of 7 to 15 dBA) would be conjectured to occur. As explained above, the softball field is routinely used until 10 p.m. and there is no reason to isolate noise from 7 p.m. to 10 p.m. being any different than noise that already occurs between 7 a.m.-10 p.m., including competitive games. See Response to Comment B5-46 and B5-47.

B5-24 Comment. "[I]n preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project." (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App. 4th 1099, 1109.) An agency cannot avoid addressing a fair argument of a proposed project's impacts by selecting a single, self-serving threshold of significance. Instead:

[I]n preparing the EIR, the agency must determine whether any of the possible significant environmental impacts of the project will, in fact, be significant. In this determination, thresholds of significance can once again play a role. As noted above, however, the fact that a particular environmental effect meets a particular threshold cannot be used as an automatic determinant that the effect is or is not significant.

(116 Cal.App.4th at 1109. See also *E. Sacramento Partnerships for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 302–03 [emphasis added].)

Response. See Response to Comment B5-17 above. The University did not select a single self-serving threshold. It used an established increment-based noise threshold for crowd and traffic noise, consistent with the CEQA Guidelines and case law. The analysis and choice of threshold here is nothing like that used in *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109, where the agency used the Appendix G questions, which don't specifically address streamflow, as its threshold for hydrology impacts and the court found "the EIR fail[ed] to explain the reasons why the Agency found [a] reduction in stream flow would not be significant." *Amador* at 1111. In that case, "the EIR simply states that "[t]he change in local hydrology associated with dewatering the Amador Canal and eliminating all leakage is not considered to be a significant hydrological impact *per se*." The court held that "This assertion is not a statement of reasons, but a bare conclusion." *Amador* at 112-113. However, when an EIR analyzes impacts under its significance criteria, explains "its findings under those criteria, and explain(s)" its reasoning in response to comments, *Amador* is distinguishable and the agency's actions are upheld. *South of Market Community Action Network v. City and County of San Francisco* (2019) 33

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Cal.App.5th 321, 343, fn. 13. Here, the University analyzed crowd noise impact under significance thresholds based on the FICON standards and explained its finding under those thresholds.

East Sacramento Partnerships for a Livable City v. City of Sacramento (2016) 5 Cal.App.5th 281, 302 is similarly distinguishable. In that case, the EIR disclosed that “[u]nder cumulative plus project conditions, several intersections on 28th, 29th, and 30th Streets are at LOS F, with significant delays. The EIR found these impacts to be less than significant based solely on the mobility element in the City’s general plan, without any evidence that such impacts were insignificant.” In fact, the EIR for the City’s general plan “which adopted the mobility element at issue, recognized that the impact of traffic increases above LOS D-E were “significant and unavoidable.” The court also rejected the City’s explanation that “the LOS thresholds of the City’s general plan reflect “community values” because such ‘community values’ do not, however, necessarily measure environmental impacts.” Here, the FICON standards used by the University do measure environmental impacts of noise and are routinely used to assess noise impacts in CEQA documents. See Response to Comments B5-42 through B5-45 for substantial evidence to support the use of the readily applicable incremental FICON standards for crowd noise impacts.

B5-25 Comment. The above analysis shows that the DEIR fails to address the actual noise effects of the Project. The DEIR fails to address the evidence that the Project will introduce additional spectator events at a different time of day than occurred at the existing facility. The new events will occur during the quieter evening hours when more residents are home from work or school. These proposed additions and changes will have significant noise levels because the events will readily exceed available noise thresholds designed for the affected community around the Project.

Response. See Response to Comment B5-46 that repudiates the establishment of a separate “evening” noise period upon which to apply unique noise limits, and which reiterate that softball game noise levels at area residences would remain below the identified significance threshold, and would therefore constitute a less than significant impact. The detailed noise analysis demonstrates that the operational noise impact of the proposed project would be less than significant.

B5-26 Comment. The awkward use of the FICON airplane, 24-hour average noise differentials does not automatically determine the significance of new noise affects from the Project. The DEIR has not – and cannot – rationally explain how the evidence of exceedances of the Berkeley Exterior Noise Limits designed to apply to the neighborhoods around the Project is not substantial evidence of a significant noise impact. Moreover, applying even the FICON-based criteria applying the existing ambient conditions in the evening at the site shows a significant noise impact for new events at that time of day. Accordingly, the DEIR must be modified to address this impact, consider all feasible mitigation measures to address Project’s noise impacts, and be recirculated for public review and comment.

Response. See Responses to Comments B5-42 through B5-47 that explain the use of the FICON based significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use), that repudiate the establishment of a separate “evening” noise period upon which to apply unique noise limits, and which reiterate that softball game noise levels at area residences would remain below the identified significance threshold, and would therefore constitute a less than significant impact. No modifications to the Draft EIR are required and the University is not required to recirculate the Draft EIR.

B5-27 Comment. B. The DEIR Discussion of the Project’s Visual and Aesthetic Impacts on the Adjacent Neighborhood From the Facility’s New Lights and Addition of up to 25 New Night Games is Insufficient and Not Supported by Substantial Evidence.

Response. See Responses to Comments B5-56 through B5-87 that individually address each of the comments in Letter B5 (Exhibit B). See also Final EIR Appendix C for these responses.

B5-28 Comment. Environmental Scientist Marc Papineau has prepared a review of the DEIR's discussion of lighting affects of the Project. (Papineau Comments, Exhibit B.) Mr. Papineau's review discloses two main flaws in the DEIR's analysis. First, although acknowledging the adverse effects of sky glow from lighted facilities such as the Project, the DEIR makes no effort to identify either the existing sky glow conditions within Strawberry Canyon at times the Project will be operating nor whether the Project will have significant direct or cumulative sky glow effects. Second, similar to the noise analysis, the DEIR again takes a "black box" approach by purporting to properly model the Project's glare and light spill effects but without discussing or providing the inputs that were selected for the model.

Response. As indicated in Response to Comment B5-59, skyglow cannot be quantified on a cumulative basis. See Response to Comment B5-60 for a project-specific assessment of skyglow for the proposed project. Final EIR Appendix C, Response to Letter B5, Exhibit B (Lighting), provides the inputs used for modeling the proposed project's lighting impacts.

B5-29 Comment. 1. The DEIR Fails to Address the Project's Cumulative Sky Glow Effects.

The DEIR acknowledges that light pollution includes sky glow. (DEIR, p. 4.2-7 ["Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting"].) However, the DEIR then proceeds to ignore this type of light pollution. (DEIR, Appendix D, p. 5 ["Skyglow metrics were not considered for this analysis as they fall outside of CEQA considerations"]; DEIR, pp. 4.2-7 – 4.2-8, 4.2-29.) The DEIR only addresses vertical light spill and glare. (DEIR, pp. 4.2-7 – 4.2-8; DEIR, Appendix D, pp. 4-5; Id., p. 2 [light analysis used "metrics quantifying light spill and glare potential at the Receptor Sites"]; Id., p. 2 ["Receptor Sites were selected to illustrate light spill and glare potential"].)

As the University recognizes in its EIR prepared for its Hill Campus Wildland Vegetative Fuel Management Plan ("WVFMP EIR"), "sky glow is an area-wide illumination of the night sky from human-made light sources...." (WVFMP EIR, p. 3.2-7.) The DEIR's Appendix D attempts to narrow this definition, stating "Skyglow: The artificial brightening of the sky from terrestrial light sources that reduces the visibility of celestial objects." (DEIR, Appendix D, p. 12.) This addition of reducing the visibility of celestial objects may be the case on clear nights, but sky glow also occurs on cloudy nights especially those associated with the marine layer along the California coast. "In communities near the California coast, there are two types of sky glow: that caused by low clouds (the "marine layer") and that caused by uplight on clear nights (clear sky glow)." (San Marin High School Stadium Lights Project, Partially Revised Final EIR, p. 7 (Oct. 2019) ("SMHS EIR") [excerpt attached as Exhibit C].)

There is no rationale provided for the statement in the Lighting Appendix asserting that sky glow impacts "fall outside of CEQA considerations." (DEIR, Appendix D, p. 5.) Other agencies have done quantitative analyses of a project's sky glow effects, distinct from light spill and glare. (See, e.g. SMHS EIR.)

Response. See Response to Comment B5-58 regarding the CEQA Guidelines Appendix G question related to light and glare. As indicated in Response to Comment B5-59, skyglow cannot be quantified on a cumulative basis. See Response to Comment B5-60 for a project-specific assessment of skyglow for the proposed project.

B5-30 Comment. There are significance criteria for sky glow as well. So that cannot be a reason for the disavowal of this impact by CEQA in Appendix D. The DEIR relies on lighting criteria for lighting and glare established by the Commission Internationale d'Éclairage's (CIE) in its *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations* (2d Edition 2017). That 2017 CIE Guide has since been updated with a Guidance Note issued by the CIE in 2020. The Guidance Note supersedes previous CIE guidance notes "to reflect the changes in international guidance regarding obtrusive light as detailed in CIE 150: 2017 *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*." CIE's current guidance establishes significance criteria for a lighting project's sky glow affects. For example, the CIE establishes "Limitation of skyglow" standards. (Papineau Comments, Attachment A, pp. 15-16.) The CIE sets a value for "Maximum values of upward flux ratio ["UFR"] of installation" for four or more luminaires. (Id.) The DEIR identifies the Panoramic Hill neighborhood is in zone E2. The CIE UFR limit for zone E2 for a sports installation is 2. As Mr. Papineau explains:

An available metric for quantifying a project's contribution to sky glow is Upward Waste Light Ratio (UWLR) or Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation's luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field.

(Papineau Comments, p. 6.)

Response. See Response to Comment B5-60 for a project-specific assessment of skyglow that demonstrates that the proposed project would reduce skyglow and would not exceed the identified threshold.

B5-31 Comment. Applying the CIE criteria, Mr. Papineau demonstrates that the Project will have a significant impact on sky glow. (Papineau Comment, Attachment C.) Mr. Papineau calculates that the UFR for the Project will be 2.3. (Id.) That level of UFR exceeds the CIE significance threshold. (Id.)

Response. See Response to Comment B5-60 for a project-specific assessment of skyglow that demonstrates that the proposed project would reduce skyglow and would not exceed the identified threshold.

B5-32 Comment. The DEIR's complete omission of the direct and cumulative impacts of this type of light pollution from the Project is inconsistent with CEQA. (*Protect the Historic Amador Waterways*, 116 Cal.App.4th at 1109.) The DEIR should be amended to evaluate the Project's sky glow impacts and recirculated for public review and comment.

Response. See Response to Comment B5-60 for a project-specific assessment of skyglow that demonstrates that the proposed project would reduce skyglow and would not exceed the identified threshold. See also Response to Comment B5-59, which indicates that skyglow cannot be quantified on a cumulative basis.

B5-33 Comment. 2. The DEIR Does not Sufficiently Disclose the Inputs and Assumptions Applied to the Modeling of the Project's Glare and Light Spill.

Although the DEIR does not ignore glare and light spill, the discussion is insufficient for a reader to make an “independent, reasoned judgment” about the validity of the University’s draft conclusion that these two lighting impacts will be less than significant. As Mr. Papineau states, “[w]hile the AGi32 model is highly capable, the Draft EIR and Appendix D do not explain how the model used actually was applied.” (Papineau Comments, p. 4.) The general references to the manufacturer’s “optimization effort” is left to one’s imagination. (DEIR, Appendix D, p. 9.)

Response. See Responses to Comments B5-63 and B5-75 for information about the AGi32 model. See Response to Comment B5-84 about the optimization of the initial lighting design and other measures taken to reduce potential lighting impacts of the proposed project.

B5-34 Comment. Likewise, the “Reduction Factor” applying percentage reductions to the light numbers for three of the four receptor locations in order to factor in light reduction from foliage is the result of a modeling effort the inputs of which are not explained. (Papineau Comments, p. 3.) Nor is there any way to determine whether the Reduction Factors applied to receivers A, B, C, and D in Appendix D “should be applied to other receivers which were not evaluated and which could receive spill light from the Cal Softball Field.” (Id., p. 3.) Mr. Papineau identifies the area and list of receivers that are left unaddressed by the DEIR. (Id., pp. 10.) Nor is it apparent what level the existing softball facility lighting was set for the one day of field measurements made on March 16, 2023.

Response. See Response to Comment B5-68 for a discussion of the Reduction Factor applied; however, excluding the impact of any obstruction due to vegetation, light spill at all receptor sites has been demonstrated in Draft EIR Section 4.2, Aesthetics and Appendix D, to be less than the relevant significance thresholds.

As described in Response to Comment B5-56, the receptor sites were selected to illustrate light spill and glare potential in various directions and elevations in the surrounding area. The receptor sites evaluated do not include locations above the elevation of the proposed luminaires (lights); due to the shielded, downward directed nature of the luminaires, all receptor site locations at or above the height of the proposed luminaires inherently cannot have a direct view into the light aperture. As such, there would be a less than significant lighting impact at receptor sites that are located at elevations at or above the height of the proposed luminaires. The receptor sites analyzed in the Draft EIR have the potential for a direct view into the light aperture and were therefore appropriately selected and analyzed in the EIR.

Regarding the comment about the field measurements taken on March 16, 2023, the field lights were turned on and allowed to fully stabilize. When the measurements were taken, the lighting was as bright as is achievable by the current system.

B5-35 Comment. As a result, the public and the University are left without a sufficient basis in the DEIR’s lighting analysis “to enable them to make an independent, reasoned judgment.” (*Santiago Cty. Water Dist.*, 118 Cal.App.3d at 830.) Likewise, it cannot be determined whether the lighting impact analysis provides a sufficient analysis of the 25 new night events with brighter lighting that would replace the intramural level lighting that currently occurs until 10 pm at the existing softball facility. For this reason, the DEIR’s glare and light spill discussion and analysis should be supplemented and recirculated for public review and comment.

Response. See Responses to Comments B5-2 and B5-19. The comment acknowledges that intramural level lighting currently occurs until 10 p.m. at the existing softball field. The Draft EIR analyzes upgrading the existing light so that competitive games can be played after dark (until 10 p.m.) and concludes that both the incremental vertical light spill and glare increase would have less than significant impacts. In addition, the total amount of vertical light spill and glare from the new lighting would be below the established and unquestioned thresholds of significance. As indicated in Draft EIR Section 4.3, Aesthetics, and Appendix D, vertical light spill would not exceed the identified threshold of significance for “Low District Brightness / Rural Residential” (Environmental Zone 2) that approximates the use of the area surrounding the project site, based on 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 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. Similarly, glare (or maximum intensity) from the new lighting would not exceed the identified threshold of significance for Environmental Zone 2 from is EN 12913:2007 “Light and lighting – Sports lighting” (BS EN 2007).

Courts have held that neighbors' complaints and fears regarding field lighting projects similar to the proposed project here, are not substantial evidence of any significant CEQA impact. For example, in *Taxpayers for Accountable School Bond Spending v. San Diego Unified School Dist.* (2013) 215 Cal.App.4th 1013, 1042, the court responded to similar community complaints and held that “the addition of four tall lighting standards to an existing ... stadium cannot reasonably be considered to have a substantial direct visual impact on the surrounding neighborhood.”

The court in that case stated “[c]ontrary to Taxpayers's assertion, the *testimony of a community member that ‘we want to come home to peace and calm, not bright lights and noise’ does not constitute substantial evidence showing the lighting may have a significant effect on the environment.* Under CEQA, the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons.” Taxpayers at 1042 (emphasis added). Notably, the lighting project in *Taxpayers* also proposed a Musco system that included many of the same features as this project. The commenter has not presented any substantial evidence of an environmental impact that shows the project would have a significant impact on the environment.

B5-36 Comment. IV. CONCLUSION

For the foregoing reasons, the Panoramic Hill Association and its members urge the University to complete and circulate a supplemental DEIR including the assessments of the significant noise and lighting impacts omitted from the current DEIR and feasible mitigation measures addressing those impacts. In the meantime, PHA request an opportunity to meet with the University to discuss these and other concerns about the impacts of the Project.

Lastly, PHA reserves its right to supplement these comments during review of the EIR for the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1120 (“any party may bring an action pursuant to section 21167 if it has raised an objection to the adequacy of an EIR prior to certification”).

Thank you for your attention to these comments.

Response. The University is not required to recirculate the Draft EIR, as the triggers for recirculation under CEQA Guidelines Section 15088.5 have not been met, as demonstrated throughout this Final EIR. Specifically, a new significant impact or a substantial increase in the severity of a previously identified impact related to noise or lighting has not been identified, as described in CEQA Guidelines Section 15088.5(1) and (2).

PHA's request to meet with the University is acknowledged. UC Berkeley staff reached out to Janice Thomas and Michael Kelly, on April 5, 2024, to follow-up on this request to meet.

PHA's statement that they reserve its right to supplement these comments during review of the EIR for the Project, is also acknowledged.

B5-37 Comment. In July 2020, I reviewed the noise section of the Addendum to The University of California, Berkeley 2020 Long Range Development Plan Environmental Impact Report for Levine-Fricke Softball Field Improvements Project, July 2020 ("July 2020 Addendum") for the subject project proposed in Berkeley, California. Since that time, the project sponsor, The University of California at Berkeley, undertook the preparation of a Draft Environmental Impact Report:

Cal Softball Field Renovation Project - Draft Environmental Impact Report ("DEIR") State Clearinghouse Number: 2022110035 U. C. Berkeley, December 2023

This letter presents our comments on this DEIR document.

Wilson Ihrig, Acoustical Consultants, has practiced exclusively in the field of acoustics since 1966. During our 58 years of operation, we have prepared hundreds of noise studies for Environmental Impact Reports and Statements. We have one of the largest technical laboratories in the acoustical consulting industry. We also regularly utilize industry-standard acoustical programs such as Environmental Noise Model (ENM), Traffic Noise Model (TNM), SoundPLAN, and CADNA. In short, we are well qualified to prepare environmental noise studies and review studies prepared by others.

Response. The comment identifies that Wilson Ihrig reviewed the Draft EIR for the proposed project and presents a summary of Wilson Ihrig's qualifications to provide this review.

Dudek has been preparing environmental review documents to satisfy the California Environmental Quality Act (CEQA) continuously since the founding of our Environmental Division in 1983, having completed over 3,000 CEQA documents (including Environmental Impact Reports and Mitigated Negative Declarations) to date. Each of these CEQA documents has included evaluation of environmental noise, and Dudek has employed full time acoustic professionals continuously since approximately 1990. The acousticians that prepared Draft EIR Section 4.5, Noise include Jonathan Leech (a member of INCE that has 40 years of experience with CEQA document preparation) and Michael Carr (a member of INCE with 17 years of CEQA document preparation experience). The Dudek noise team also uses industry-standard acoustical programs such as the FHWA Roadway Construction Noise Model (RCNM) and Traffic Noise Model (TNM), the Federal Rail Administration CREATE rail noise model, and commercially supported three-dimensional noise prediction software including SoundPLAN and CADNA. The Dudek noise team is therefore fully qualified noise experts and well experienced to complete environmental noise studies for proposed land uses ranging from university level athletic stadiums to the noise element of a general plan that encompasses an entire community. See responses to individual comments below and in Final EIR Appendix B, which also contains Mr. Leech's curriculum vitae.

B5-38 Comment. General Comments About Athletic Noise

Residents in the area near the Cal Softball Field and the adjacent Witter Rugby Field are not unique in their concern about sports facility noise. I have previously been involved in numerous matters in which such noise was contentious, including high school sports field developments in Albany and the Brentwood neighborhood of Los Angeles, a Little League field development in Atherton, and a batting cage in Castro Valley. Sports noises are unnatural, unusual, in the ears of many, unnecessary, and may also potentially be loud. These are all factors that many cities take into consideration when determining if a noise is unreasonable and, therefore, prohibited. Many cities include in their noise control regulations a list of factors to be considered in assessing a noise impact similar to the following taken from the California Model Noise Ordinance:

1. The sound level of the objectionable noise.
2. The sound level of the ambient noise.
3. The proximity of the noise to residential sleeping facilities.
4. The nature and zoning of the area within which the noise emanates.
5. The number of persons affected by the noise source.
6. The time of day or night the noise occurs.
7. The duration of the noise and its tonal, informational, or musical content.
8. Whether the noise is continuous, recurrent, or intermittent.
9. Whether the noise is produced by a commercial or noncommercial activity.¹

One key point of these factors is recognizing that the quantitative level of noise in decibels, while important, is not the sole factor in determining whether a noise is acceptable to the community.

Footnote:

¹ *Model Community Noise Control Ordinance*, Office of Noise Control, California Department of Health, April 1977.

Response. Noise generated from athletic facilities can often be distinguished from other community noise sources such as roadway traffic, stationary mechanical equipment, and landscaping maintenance activities, although each of these sources could be categorized as “unnatural” (i.e., not originating from nature). And while certain members of any community may find athletic facility noise “unnecessary” there are also members of every community that are avid fans of athletic competitions and who take no exception to the sounds associated with athletic facilities.

In this regard, it should be noted that the Cal women’s softball field was opened in the current location in 1995, nearly 30 years ago. The University analyzed impacts of building a specific women’s softball field in 1992. At the time, the existing noise from the existing field was characterized as follows:

“Noise is generated by players and spectators of a variety of recreational and sports activities conducted on the field. The greatest sources of noise related to softball, soccer and rugby play on the fields is human vocalization (e.g., spectator cheering and shouting during competitive play and coaches’ instructions) and referees’ whistles. Noise from tennis playing typically consists of players’ voices and the sounds of tennis balls bouncing off pavement or hitting racket strings. The softball facility is equipped with an amplified sound system which is used for playing music during pre-game

practice and for announcements during softball competitions. The speakers are aimed upward and broadcast sound widely outward, exposing nearby residents to these amplified sounds.” (UC Berkeley 1992)

Noise associated with renovation of the field at that time was explained as follows:

“As the project involves reconfiguration and upgrading of the existing recreational facilities, long-term noise levels from normal operation of the recreation facilities are not expected to increase beyond current levels. Implementation of the project is expected to reduce traffic volumes associated with the project site, resulting in a slight (but most likely unnoticeable) reduction in traffic noise in the project area. The field area would continue to be used for intercollegiate and intramural sports activities and the level and types of various sports-related noises generated at the site would, therefore, generally remain constant. The project would include installation of a new amplified sound system for the softball field designed to project sound directly onto the softball field rather than upwards. This would thereby reduce the level of amplified noise in the residential area to the south of the project area. The use of powered leaf blowers and a powered lawnmower is part of routine maintenance of the facility. Use of this equipment would continue after implementation of the project.” (UC Berkeley 1992)

Thus softball-related sound has been a component of the community noise environment for the residential neighborhoods in the project vicinity across a period in which many, if not most, of the current homeowners acquired their properties. Given the 30-year history of the facility, it must be considered a reasonable assumption that collegiate level softball competition will continue to exist in the same location for the foreseeable future. Consequently, because softball-related noise is currently generated from the project site and would continue to have the same composition of noise sources under the project, it is both appropriate and meaningful to compare the existing and predicted noise exposure levels at residential receivers using a quantitative metric, the average sound level dBA L_{eq} (also called the equivalent sound level, which represents the logarithmic average of varying instantaneous sound levels over a given period, usually one hour in duration). In addition, softball games would not extend later than 10 p.m. and would therefore not be a source of potential sleep disturbance in the nighttime period for vicinity residences.

B5-39 Comment. Dearth of Details about DEIR Noise Analysis

Noise analysis calculations start with a source noise level, typically provided as a sound pressure level at a given distance but sometimes as a sound power level (which is independent of distance). The July 2020 Addendum provided some information about the source noise levels based on measurements that had been made at a Cal softball game in March 2019. Information about the crowd noise levels and the PA system noise levels were provided. The DEIR analysis lacks any such information stating only that “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).” [DEIR at p. 4.5-23]

I have reviewed the Hayne paper, and of particular note is this line, “Using these factors as a basis, a series of controlled and uncontrolled experiments have been conducted in order to derive a set of equations that are suitable for use by consultants to predict the noise emissions from small to medium sized crowds (up to 100 people) located in outdoor spaces.” [Hayne, et al., 2011; emphasis added] As the subject project analyzes noise from much larger crowds – 1,000 to 1,500 people – it is completely unclear how the noise from spectators has been modeled in the DEIR analysis. As for the PA, the DEIR states,

“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.” Clearly, without knowledge of the crowd noise, this relative reference is relatively useless.

Purportedly, the DEIR preparers somehow used the Hayne data in a commercially-available software package called SoundPlan, a package we ourselves use. At a minimum, the DEIR should provide the input levels used for the analysis.

Response. The July 2020 Addendum did provide a summary of near-distance sound pressure level measurements from a Cal softball game in March 2019, and identified these as source levels for noise prediction at selected nearby residences associated with anticipated spectator attendance with the proposed project. Noise prediction in the 2020 Addendum was completed using standardized equations for outdoor noise attenuation with distance, and the applicable equations were also identified in the Noise Section discussion. With this relatively simple approach to noise prediction, the identification of source levels and included equations is appropriate in the Noise Section and is meaningful to any person reviewing the discussion.

For the 2023 Draft EIR, to provide a more robust prediction of noise levels from softball games at the renovated facility, Dudek employed a three-dimensional commercially available software package called SoundPlan. Draft EIR Section 4.5, Noise provides a high-level summary of the general inputs and detailed SoundPlan results for the prediction of future softball game events with the proposed project. In response to this comment, Final EIR Appendix B includes the SoundPlan model inputs for the project maximum and typical events.

With regard to the Hayne paper, the researchers conclude by providing an equation for predicting the sound power (L_{WAeq}) associated with a crowd size of “N” participants. The equation is:

$$L_{WAeq} = 15 \log N + 64 \text{dB(A)}$$

The researchers (Hayne et al) suggest the equation would be suitable to evaluate crowds up to approximately 100 in size as a point source, and we generally concur with this suggestion, primarily because crowds with substantially larger participant numbers would occupy a greater area for which treatment as a point source would likely be less accurate. To ensure accuracy of noise generation effects for the crowd sizes that could be accommodated with the proposed project, Dudek used the above equation to derive the sound power level for crowds up to 1,500 persons but entered the crowd noise as an “area source”, rather than a point source, in SoundPlan. Entering the crowd noise as an area source in SoundPlan remedies the possible inaccuracy in the crowd noise equation because it defines the entire perimeter of the spectator seating area, and treats that entire area as the source, rather than using a point near the center of the area as the source. See the SoundPlan inputs attached to Final EIR Appendix B, which show expressions that correlate the 2011 Hayne paper reference decibels with increasing spectator quantities. The crowd noise was rendered as a single area-type source with “wings” stretching northeast and northwest facing the field/diamond and with sound power level distributed evenly across an emission area of approximately 710 square meters (7,638 square feet). See SoundPlan inputs attached to Final EIR Appendix B.

With respect to the modeling of noise from the public address (PA) system, the public address speaker system was rendered as a set of twelve point-type sources, in four clusters of three and positioned at distances along the north side of the main building overlooking the seating area wings. These speakers

are positioned 9 to 10 meters above grade, with speaker directivity angled in such a manner so that each cluster projects sound in a roughly semicircular manner over the nearest portion of the crowd seating areas. The source sound level for each speaker was input as a sound power 6 dBA (L_{WAeq}) greater than the crowd noise source level (described above). See SoundPlan inputs attached to Final EIR Appendix B.

B5-40 Comment. Another very pertinent factor in this situation is the topography of the area around the project site. Many, not to say ‘most’, of the homes on Panoramic Hill overlook the project site and the elevated far side of the appropriately named Strawberry Canyon may also come into play by containing acoustical energy (noise) in the canyon. Yet, the DEIR only discusses the most basic analysis of outdoor sound attenuation in Section 4.5.1.2 ACOUSTIC FUNDAMENTALS and elsewhere. The DEIR states in two places (p. 4.5-3 and 4.5-24) that sound from a point source attenuates at 6 dB per doubling of distance over hard surfaces and 7.5 dB per doubling of distance over soft surfaces. Those values are only correct when the topology is flat, which the DEIR notes. However, it never explicitly states that the topography is considered nor does it comment on the effective attenuation rates given its calculation results.

Response. The topography of adjacent ridges/canyons and ground surface of the project area was added as a layer in the SoundPlan model as “DGM triangles” assembled from elevation points that then form a three-dimensional map within the model space (see Final EIR Appendix B for a screen capture illustrating the three-dimensional topography imported to the SoundPlan model space). Sound sources in SoundPlan were each plotted, as were each of the receiver points (representing residences). See the SoundPlan inputs attached to Final EIR Appendix B for the inputs related to the locations of sound sources and modeled receivers, as well as for topographic conditions for the area containing the adjacent residences. Exterior sound attenuation behavior in the SoundPlan model is calculated based upon the distribution of sound sources and receivers, existence of barriers (i.e., the facility structure) between sources and receivers, and the topography between sound sources and receivers.

B5-41 Comment. Transparency and disclosure are part and parcel of the CEQA environmental review process. The DEIR needs to provide a much better description of the SoundPlan model which is otherwise a “black box” that cannot be scrutinized. The DEIR needs to provide much more information about crowd noise source levels, how the future softball stands and press box were accounted for, how the PA system speaker output was modeled, and how the topography of the area around the project site was incorporated in the model.

Response. See Response to Comment B5-39 for a discussion of crowd and public address system source noise levels. See Response to Comment B5-40 for a discussion of how the adjacent topography of the area around the project site was incorporated in the SoundPlan model.

With regard to how the softball stands and press box were accounted for in SoundPlan, the “main” facility structure was modeled as a solid building 6.1 meters (20 feet) tall above grade, with an additional rear wall (i.e., behind seating areas) extending upward from the southern façade of the main building an additional 15 feet above the building top surface; thus the top height of this rear building wall above the elevation of the softball playing field is 35 feet. The press box was entered into the model as a solid building stacked atop the main building and also having a top surface height of 35 feet above grade level (the press box would occupy a portion of the upper deck and would not extend above the rear wall in other areas of the top level of the building). See Final EIR Appendix B for these SoundPlan inputs.

To calibrate noise level predictions from SoundPlan, the SoundPlan model was run based on the existing facility configuration (i.e., spectator seating areas and public address system speaker locations) and April 16, 2022, game attendance (785 spectators), and the predicted noise levels were compared to the

measured noise levels at monitoring locations LT1-LT4 (see Draft EIR Figure 4.5-1 for these locations). Based on the comparison of predicted to measured noise levels, the ground absorption factor in SoundPlan was adjusted to 0.25 (where a value of 0 represents full sound reflection from the ground surface and a value of 1 represents full sound absorption from the ground surface). This ground absorption coefficient was then incorporated into the model for all runs that address the renovated facility configuration.

B5-42 Comment. Inappropriate and Misapplied Standard for Softball Game Noise

The DEIR cites a study published in 1992 by the Federal Interagency Committee on Noise (FICON) as the basis for the adopted threshold of significance for softball game noise. The actual name of the FICON report cited is *Federal Agency Review of Selected Airport Noise Analysis Issues*. As the name indicates, the subject of this study was noise from jet aircraft, not sports facilities. Furthermore, the noise measurement metric used in this study is the Community Noise Equivalent Level (CNEL), a 24-hour, weighted average.² There is nothing in the DEIR to support the contention that the allowable noise exposure increases using this daily metric are applicable to softball games that take several hours.

Footnote:

² The CNEL is calculated by energy-averaging, also known as logarithmically averaging, the noise levels over an entire 24-hour period after weighting (increasing for the purposes of calculation) the noise levels between 7:00 p.m. and 10:00 p.m. by 5 dB and those between 10:00 p.m. and 7:00 a.m. by 10 dB.

Response. The FICON study was performed with a focus on airport-related noise, because the U.S. Environmental Protection Agency and Federal Aviation Administration both recognized that airport noise affected a substantial number of residents in the United States. The technical sub-group contributing to the study was responsible for review of the body of science associated with methodologies and metrics for assessing community noise impacts, which evolved between the 1980 meetings of the Federal Interagency Committee on Urban Noise (FICUN) and the 1992 FICON study. Based on this large body of scientific evidence, the FICON study was able to establish a graduated significance threshold that depends upon the existing (ambient) community noise level at the time a new source is introduced. The principal identified in association with the significance threshold is that humans are more sensitive to changes in noise level where they currently experience elevated noise levels, and less sensitive to changes when ambient noise levels are lower. This sensitivity to changes in the community noise levels is valid regardless of the sources contributing to the community noise level (i.e., airports, roadways, commercial buildings, athletic facilities). The FICON based graduated significance threshold is commonly employed in CEQA noise analyses for a range of noise sources because it accounts for this correlation between sensitivity and existing noise exposure levels, rather than applying a static increase as the threshold regardless of existing noise exposure levels.

FICON specifically uses Community Noise Equivalent Level (a 24-hour average sound level) because airports may have aircraft activities in any hour of the day, and CNEL captures all aircraft operations occurring within a 24-hour day; changes in the level of aircraft activity with addition of airport capacity (i.e., runways or gates), can then be compared on a basis that includes all these operations throughout the day/night. Softball games on the other hand have a duration in the 3- to 4-hour range, where relatively continuous noise results in comparable average noise level (L_{eq}) across each hour of the game. Because a softball game represents a discrete event, with standard duration, L_{eq} is an appropriate metric upon which to base the comparison of a receiver's noise perception of a softball game (existing game versus proposed game). The pertinent aspect of the FICON standards for softball game noise (on the basis of comparing hourly L_{eq} values), is that receivers already experiencing softball game noise would similarly be

more sensitive to changes in the average sound level over the discrete game duration if the starting noise level was already high.

B5-43 Comment. Even if one were to allow that extrapolating the conclusions of a study on jet aircraft noise using a 24-hour metric to a study on softball noise using an hourly metric were permissible, the DEIR's operational (i.e., game noise) analysis would still be inadequate because it relies solely upon a relative threshold of significance, the notion that a project can always add just a little more noise to an environment without causing any sort of impact. The long-run fallacy of this argument is clear: no one project may ever cause an impact, but over time the environment could become significantly degraded by a series of projects that each increases the noise incrementally. Therefore, it is imperative that relative thresholds of significance be paired with absolute thresholds. In this matter, one look no further than the Berkeley Municipal Code for such an absolute threshold.

Response. The FICON standard does take into account the absolute noise level. When the existing noise level is less than 60 dBA, the allowable noise exposure increase is 5 dBA; when existing noise is between 60-65 dBA, the allowable noise exposure increase is 3 dBA; and when the existing noise level is greater than 65 dBA, the allowable noise exposure increase is 1.5 dBA. This same FICON standard was used to evaluate traffic noise increases from the project, which will occur over short periods before and after games, and for the spectator noise, which will occur throughout the game.

As explained in the Draft EIR Section 4.5, Noise (Subsection 4.5.2.4, Local), the application of the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code would not align well with the infrequent, short-duration, episodic nature of competitive events at the facility (approximately 25 times per year). In short, the municipal code standards establish sound generation limits to govern permanent stationary sources (i.e., non-transportation) in a manner that would prevent exterior noise levels at noise-sensitive (primarily residential) land uses from reaching unacceptable levels on a regular or constant basis. As an example, for a continuous, permanent, sound source (such as an air conditioner running 24-hours per day in the heat of summer), application of the daytime limit of 60 dBA L_{eq} and a nighttime limit of 55 dBA L_{eq} (City of Berkeley, Municipal Code Section 13.40.050, multi-family residences) would result in an ambient noise level of no greater than 60 dBA L_{dn} (a 24-hour average with 10 dB penalty added to the hourly averages between 10 p.m. and 7 a.m.). 60 dBA L_{dn} is the exterior noise limit, below which no noise studies are required for the protection of proposed residential land uses (CCR Title 24, Part 2). In comparison, softball games do not occur every day, and have a duration of 3-4 hours (not the entire daytime period). With infrequent occurrence, during a limited portion of the day, softball games do not align well with the function of the municipal code limits as explained above. In other words, softball games do not have the potential to change the long-term average ambient community noise levels in the scale represented by the municipal code (daily L_{dn} values averaged over a month, or even a week, would not be affected by the presence or absence of a softball game event). This is because a competitive softball game would only be played on 25 days of the year, and the incremental increase in noise levels on those 25 days per year would not change an annual ambient average (expressed as average daily L_{dn}), which includes these 25 game days and 340 non-game days.

As explained throughout the Draft EIR, 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. While UC Berkeley expressly considered the City of Berkeley's noise ordinance for

mechanical equipment and construction, it expressly did not use the City of Berkeley's noise ordinance as thresholds for the increase in spectator noise that would occur from the Project. This is because the proposed project is the renovation of an existing softball field that is currently used year round. For 340 days a year there would be no change in the type or intensity of use and there would be no noise impact from spectator attendance. For the 25 games a year, a more meaningful comparison is the average noise level from events at the existing facility (broken out as typical events and maximum events) versus noise levels from these events under proposed project conditions. As seen in Table 4.5-17, the highest noise from existing games (at maximum capacity) is 69.7 dBA. With project implementation, the highest noise level (at this same receptor) is reduced to 67.2 dBA as a result of the change in configuration of the stands and speakers (existing spectator stands have an open back, the proposed stands would have a solid wall between spectators and adjacent residential areas). In fact, spectator noise decreases as a result of the project at 8 of the 15 receptors analyzed, and where there is an increase, it falls below the appropriate FICON standard. It should be noted that temporary spectator stands (on the north side of the field, oriented southward toward the adjacent residential area) are included in the modeling of existing typical and maximum capacity events (with existing permanent seating for 350 spectators, any spectators in excess of this number are accommodated in the temporary stands), whereas the proposed facility would have permanent seating for all spectators, oriented away from the adjacent residential area. Because temporary stands holding spectators oriented toward residential areas south of the proposed facility would be eliminated for the project, crowd noise contributions at some receivers would actually be less under the project compared to the existing conditions. However, because the assumed spectators attendance for a typical event would increase by 500 (currently 500 and increasing to 1,000), whereas the increase for spectators at maximum events would be 171 (currently 1,340 and increasing to 1,511), for some of the modeled receivers, modeling concludes there would be a greater increase in noise levels from typical events (existing versus proposed) than for maximum events (existing versus proposed).

The FICON significance threshold ensures that where community noise levels are already high, the allowable increase is less (reducing the potential for community noise level increase on a cumulative basis). The FICON significance threshold therefore incorporates absolute limits by considering the starting baseline noise conditions, and setting numeric limits for relative increase above ambient that are dependent on the existing ambient noise level.

As explained in the Draft EIR Section 4.5, Noise (Subsection 4.5.2.4, Local), the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code have been applied to assess operational noise from project stationary equipment at the closest residences within Berkeley and Oakland, respectively. New mechanical equipment could be in use for a portion of most days of the year while coaching, practices, intramural games, and other low intensity activities are occurring. These stationary equipment noise levels are also compared to ambient noise levels at the same residences, and in each case no increase in ambient noise levels would result from mechanical equipment operations. Consequently, the analysis does apply both an absolute and relative threshold to stationary equipment noise.

B5-44 Comment. Appropriate and Reasonable Absolute Standard for Softball Game Noise

A reasonable absolute standard, already cited in the DEIR, is the City of Berkeley Exterior Noise Limits. As correctly shown in Table 4.5-6 of the DEIR, the applicable noise limit for homes zoned ES-R (as all of those on Canyon Road, Mosswood Road, and Panoramic Way are) during the hours that the softball stadium will be used is 55 dBA L50. The L50 level is that which is exceeded 50% of the time during a given time period or event. This can be difficult to calculate due to a lack of statistical distribution data about source levels,

so the DEIR reasonably calculated the Leq which is the “decibel” (logarithmic) average noise level. While the L50 and the Leq are not necessarily equal, given any better information, it is reasonable to presume that they are.

Response. As explained in the Draft EIR Section 4.5, Noise (Subsection 4.5.2.4, Local), the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code have been applied to assess operational noise from project stationary equipment that would operate every day of the year at the closest residences within Berkeley and Oakland, respectively. The Leq (equivalent average noise level) provides a more conservative analysis than what would have been applied in the evaluation of the L50, as the Leq places deference on the louder sound levels produced during a given period. Dudek therefore concurs that it is reasonable (and conservative) to compare the calculated Leq values for operational stationary noise against the municipal code standards, which are expressed as an L50 metric.

However, Dudek disagrees with the commenter that the absolute limit for residential noise exposure is reasonable or appropriate to apply to competitive game noise levels that will occur with the proposed project no more than approximately 25 times per year. The inter-collegiate competition events would be held relatively infrequently and would have a duration of several hours apiece (as opposed to most of a day); as the activity will not occur “day in and day out” the standards in the municipal code for residential land use exposure are not appropriate to be applied to infrequent events at the project softball field facility. See also Response to Comment B5-43.

B5-45 Comment. The DEIR presents the results of its softball game noise for “typical events” in Table 4.5-16 on DEIR page 4.5-33. This table is reproduced below, and all of the noise levels at analyzed receiver that are predicted to exceed the Berkeley Noise Ordinance Limit are highlighted. This is the case for 10 of the 15 receivers. The results for “maximum events” (maximum attendance) indicate that the Noise Ordinance Limit will be exceeded at 12 of the 15 receivers (DEIR results in Table 4.5-17 on p. 4.5-34, not reproduced). [See Final EIR Appendix A, Public Comment on Draft EIR, Letter B5 for referenced table.]

Response. See Responses to Comments B5-43 and B5-44 that explain why the Berkeley and Oakland noise ordinance limits for residential land uses should not be applied to noise levels from 25 games a year for a project that involves renovation of an existing softball field. Project contributions to noise levels at these residences during competitive events would in each case result in ambient noise level increases that fall below the FICON significance thresholds.

B5-46 Comment. DEIR Table 4.5-16 includes a column showing an Existing Ambient Daytime Noise Level, however, I assert that the value shown is inappropriate to this situation because it is the value averaged over 15 hours, from 7:00 a.m. until 10:00 p.m. One major facet of this project that portends a significant noise impact on nearby residents is that games will be played after dark, enabled by the permanent lighting. The DEIR states, “While the project conservatively assumes up to 25 games after dark per year . . . it is much more likely there would be approximately 11 games starting at 5:00 p.m. or later . . .” [DEIR at p. 3-26] So, there will be at least 11 games in the quiet evening hours.

Response. The commenter has not pointed to any evidence that supports the use of a different threshold of significance between 7 p.m. and 10 p.m. or anything that defines it as “quiet evening hours.” UC Berkeley does not have such a threshold, and neither does the City of Berkeley nor City of Oakland define an “evening” period; daytime is from 7 a.m. to 10 p.m. and nighttime is from 10 p.m. to 7 a.m., which indicates that no greater emphasis is placed on sound occurring from 7 p.m. to 10 p.m. as compared to sound during the period of 7 a.m. to 7 p.m. Noise levels after 10 p.m. are typically required to be lower in

order to prevent sleep disturbance. The softball field will not be used past 10 p.m., and the proposed project would therefore have no impact on sleep disturbance.

The period of the day in which competitive softball games would be hosted varies, and therefore comparison of average noise levels from a multi-hour competitive softball game against an ambient average of hourly noise levels across the daytime period (7 a.m. to 10 p.m.) is reasonable in order to account for the variability of game times throughout the daytime (7 a.m. to 10 p.m.). A useful comparison for understanding predicted game noise levels at nearby residences is the standard reference for normal conversation levels, which is 65 dBA L_{eq} for two people standing a distance of three feet apart. Now consider that at no evaluated residence under a project typical event game (Draft EIR Table 4.5-16) would the average game noise reach 65 dBA L_{eq} outside the residence while only one home (LT1) would experience exterior sound levels slightly above 65 dBA L_{eq} (67.5 dBA L_{eq}) during a project maximum event game (Draft EIR Table 4.5-17). Moreover, at this location, the noise levels decrease from 69.7 dBA as a result of the proposed project. As such, competitive game events would not be anticipated to interfere with conversations or other outdoor activities conducted at nearby residences, whether such future project typical events or maximum events occurred in the early afternoon, late afternoon, or evening. Therefore, the increased spectators at games with the proposed project would have a less than significant noise impact.

B5-47 Comment. Any game that begins at 5:00 p.m. or later will end after 7:00 p.m., and the long-term noise measurements made by the DEIR at four locations in the residential neighborhoods around the project site reveal that the existing ambient levels between 7:00 p.m. and 10:00 p.m. range from 47.1 to 54.1 dBA L_{eq} . Using the arithmetic average value of the hourly L_{eq} measured at each of the four long-term locations from 7:00 p.m. to 10:00 p.m. in the same manner as the DEIR does using the average over the 15 hours from 7:00 a.m. to 10:00 p.m. yields to following results which clearly indicate a significant impact at many receivers even using the ill-advised FICON standards: [See Final EIR Appendix A, Public Comments on Draft EIR, for referenced table.]

Heretofore, only a very few games have been played after dark, enabled by temporary lighting. Therefore, the permanent introduction of 11 to 25 night games at the Cal Softball Field will cause a significant noise impact on the neighboring residences by virtue of the fact that the noise from those games will exceed both the applicable Berkeley Noise Ordinance Exterior Limit and the existing ambient noise level. Furthermore, the increases in the noise levels during the relevant evening hours will exceed the FICON standard as applied in the DEIR noise analysis, so even by the DEIR's own standard, the noise from softball games played after dark will constitute a significant noise impact. These quantitative considerations are irrespective of the other facets of noise noted above that people tend to find annoying, namely, the "plink" of the bat, the roar of the crowd, and players yelling.

Response. The maximum number of total annual games anticipated would be 25, including post-season playoff games. While it is more likely that 11 of these games would be anticipated to extend beyond sundown (i.e., into darkness), a worst-case scenario with all 25 home games involving some play extending into the evening is assumed (see Draft EIR Chapter 3, Project Description, Subsection 3.6.4.1). The commenter again asserts that a separate and unique noise significance threshold must be constructed and applied for the evening period between 7 p.m. and 10 p.m. due to increased sensitivity to noise in this period, with an increased potential for annoyance from noise occurring during this period. As explained in Response to Comment B5-46, there is no basis for using a different threshold for the evening period.

The commentor is wrong that softball game noise should be compared to an average noise level derived from recorded ambient noise levels only in the period between 7 p.m. and 10 p.m. There is no basis to select the time period between 7-10 p.m. solely to construct an average ambient noise level for comparison to game noise. The period from 7 p.m. to 10 p.m. is considered “evening” under the CNEL metric (with separate weighting) but the noise from this period is then averaged with noise levels across the other 21 hours of the day to arrive at the CNEL value. In not one of the cities in Alameda County, nor under Alameda County regulations, is a separate evening period established for the purpose of noise management. In all of these communities, noise limits are defined on the basis of daytime and nighttime, with no separate regulation for the period between 7 p.m. and 10 p.m. (evening). Consequently, constructing an ambient average noise level for the project area that considers the evening time period only is inappropriate. The selection of this erroneous three-hour-period in the evening against which to compare softball game noise is invalid and leads to the spurious conclusion that softball game noise would result in increases of 7 – 15 dBA L_{eq} over “ambient” noise levels. Games may occur during any portion of daytime, with each concluded before 10 p.m., and therefore the daytime average noise level (from 7 a.m. to 10 p.m.) is appropriate to compare game noise against. Parsing the sound level monitoring data so that an evening-only ambient level is identified is not consistent with the noise standards for Berkeley or Oakland, as their standards are applicable for the entire daytime period (7 a.m. to 10 p.m.). The time-of-day criteria as the basis for an annoyance-based threshold is therefore already dismissed by the existing ordinances. Finally, the existing field is routinely used until 10 p.m. for intramural events and practices, so “the ‘plink’ of the bat, the roar of the crowd, and players yelling” is part of the existing conditions at the project site. See also Response to Comment B5-46.

B5-48 Comment. Noise is fundamentally defined as "unwanted" or "undesirable" sound. As such, noise, in and of itself, cannot be quantified. While it is well established that sound levels (decibels) correlate somewhat with people perceiving a sound as "noise", the situation is much more complex than captured by typical noise ordinances and noise policies. This is not to say that the latter are not useful as public policy, rather, it is to say that limiting noise assessment to only those aspects that can be quantified is to short-change the impact assessment on those impacted.

Response. See Response to Comment B5-38. The requirement for the assessment of noise impacts under CEQA is the comparison of the existing noise environment without the project to the resulting noise environment once the project is implemented. The women’s softball field, which operates in a substantially similar manner to the proposed project, and which includes each of the same sound sources, is an existing contributor to the current noise environment. It is therefore completely adequate and appropriate to compare the noise levels from the existing softball field against the proposed softball facility noise levels, as the composition of the sound is the same in both cases. Also, the dBA L_{eq} metric has been demonstrated to accurately represent the way in which a human experiences typical sound in the environment.

B5-49 Comment. In this matter, the proposal includes evening and nighttime games which have not occurred in the past with all of their attendant sounds such as fans cheering and stomping their feet; players yelling; umpires barking; and commentators announcing over the PA system the play-by-play, score, information about the players and other upcoming events, and concession stand prices. Even evening and nighttime practice will bring coaches and players yelling which is typically unwanted by residents within earshot of athletic facilities.

Response. The project does not propose nighttime games (i.e., those that would occur later than 10 p.m.). Evening games have occurred in the past using temporary lighting, and evening intramural softball games have been hosted at the existing softball field. In addition, the field is used for evening practices.

Consequently, evening softball games at the softball field as a result of the Project would not be a new phenomenon but may occur with greater frequency under the Project. Softball practices at the renovated facility are not proposed to occur later than 7 p.m. (the beginning of the evening period, as defined in some jurisdictions), as is the case under existing conditions. See Response to Comment B5-2 for an explanation of the existing use of the field until 10 p.m. that was analyzed in the 1992 IS/ND.

B5-50 Comment. From the perspective of neighboring residents who predate the development of Cal Softball Field and other sports facilities in 1995, the area has already been transformed from one of wooded quiet to living virtually inside a sports stadium. Google Earth Pro historical aerial photographs clearly show that in 1988 there were buildings along Centennial Drive that appear to have been separated from homes on Canyon Road by a buffer zone of trees and that by 1993 these buildings and woods had been removed, clearing the land for the later development of Cal Softball Field and Witter Rugby Field.

Response. CEQA mandates the comparison of environmental conditions under existing circumstances (baseline) against those that would result from the project. While the vicinity surrounding and including the project site may have been different before 1988, the baseline condition for this project includes the existence of the women's softball field, and use of the field to host at home competitive softball events, including post-season playoff games. The existing softball field has now existed since 1995, firmly establishing an ambient noise environment in the vicinity that includes contributions from collegiate level softball competition events. See Response to Comments B5-2 and B5-6 for an explanation of the existing use of the field until 10 p.m. that was analyzed in the 1992 IS/ND.

B5-51 Comment. As is often the case, following the initial transformation of the area, there has been a continual degradation of the residential neighborhood's soundscape environment by incremental "improvements" to the facilities. Where there were once no night games, there have now been a few night games. Now that there have been a few, there will now be many more enabled by the proposed new lighting and new larger facility. The current plan calls for up to 25 competitive night games. If 25 night games are permitted and the California Golden Bears continue to win Pac-12 and National Championships and otherwise have great success (something we can all support), it isn't difficult to foresee that the number of night games will increase – incrementally – in the future.

Response. As described in Response to Comment B5-47, a worst-case scenario with all 25 home games involving some play extending into the evening is assumed (see Draft EIR Chapter 3, Project Description, Subsection 3.6.4.1). The only way that additional competitive games could be played at the proposed facility would be if the NCAA added games to the competitive season, which is not anticipated and would be entirely speculative to hypothesize they would do. The proposed facility would continue to be used at times after dark for softball practices and intramurals, as under existing conditions. See Chapter 2, Revisions to Draft EIR, of this Final EIR for minor revisions to Draft EIR Table 3-2, acknowledging the use of the field for softball practices until 7 p.m.

B5-52 Comment. Cautionary tales comes from the San Diego Unified School District. After installing permanent lights at Clairemont High School stadium, neighbors report that the usage increased from "five or six times a year to well over a hundred".³

Footnote:

³ Video: "Residents Near Clairemont High School Discuss the Impact of Commercialization and Lighting of the Athletic Field" [<https://www.youtube.com/watch?v=tVutvv5VKas&app=desktop>]

Response. The circumstances involved with the Clairemont High School stadium are very unlikely to be representative for the proposed project. Any number of factors could have been the cause of greater interest and usage of the Clairmont High stadium, many of which might be related to soccer or track and field events for which the stadium could also be used to host, whereas here there are no other facilities. See Response to Comment B5-51 for information about what was assumed in the analysis with respect to games extending into the evening. The Softball Field will not be used for soccer or track and field. It is already used throughout the year for intramural and recreational sports, and as explained above, there is no evidence that the Softball Field will be used for more than 25 competitive games per year.

B5-53 Comment. In conclusion on this point, noise is defined as "unwanted" or "undesirable" sound. To the residents of Canyon Road and Panoramic Hill, if the nighttime use is expanded beyond the three nights over the last four years they have already tolerated, all future, audible nighttime sounds from the Cal Softball Field would be a reminder that what remains in the evening of the peaceful, quiet residential enclave that existed from the time the homes were built beginning in 1904.

Response. The existing softball field has been routinely operated until 10 p.m. for intramural games and practices. The existing field is also currently used for approximately 15-20 competitive games a year, with 22 regular season games scheduled for 2024. The schedule changes as a result of the proposed project (up to 25 games, including those in the post season) are therefore minimal. Under the proposed project, it is conservatively estimated that a total of 25 competition level games per year could involve play extending into the evening (later than 7 p.m., but no later than 10 p.m.), including the potential for post-season play-off games (see Draft EIR Chapter 3, Project Description, Section 3.6.4.1). Over a 5-month competitive season, this would equate to no more than 5 games per month that could extend into the evening period, or roughly one evening per week for the 5-month season. Thus, noise at vicinity residences during future evening softball games would affect no more than approximately 17% of evenings throughout the January-May softball season. In addition, noise from softball games at the renovated softball field would remain below the operational/event threshold of a 5 dBA L_{eq} increase over average daytime ambient levels (the time period in which the games would occur). As explained in Response to Comments B5-46 and B5-47, there is no separate noise threshold that applies from 7 p.m. to 10 p.m. Therefore, operational noise impacts were determined to be less than significant. Also see Responses to Comments B5-2 and B5-6 for an explanation of the existing use of the field until 10 p.m. that was analyzed in the 1992 IS/ND.

B5-54 Comment. A major part of the fun of a sporting event is cheering and the amped-up feeling amongst the fans when their team does well. That should be allowed and encouraged as long as it's done in a location that does not impact others not in attendance. That is not the situation here. Rather, the development of Cal Softball Field and Witter Rugby Field has already transformed the daytime environment from quiet woods to a sporting venue. Fortunately for the residents, the neighborhood currently returns to its more pristine state in the evenings, but the proposed project would eradicate even that vestige of the venerable neighborhood on many evenings, and once that barrier is broken, the evening quiet will never be totally recovered. This is precisely why the California Environmental Quality Act requires a thorough analysis and full disclosure of the environmental impacts of projects. In this case, both qualitatively and quantitatively, it is clear that the proper conclusion of such an analysis must be that the project would cause a significant and unavoidable noise impact to the residents of Canyon Road.

Response. See Response to Comment B5-53 for a summary of the operational noise impacts of the proposed project. See also Responses to Comments B5-37 through B5-52 for information about all other comments made by Wilson Ihrig. As explained above, noise from the use of the existing softball field

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already occurs until 10 p.m. Additionally, the adjacent Witter Field is also used regularly until 10 p.m. The existing baseline is not “evening quiet.”

B5-55 Comment. Please find included herewith comments on the Draft Environmental Impact Report dated December 2023. Comments submitted by this letter and attachment are made for your submittal on January 29, 2024.

Response. The comment serves as the lighting consultant’s introductory remark. The consultant’s comments are addressed below; see Responses to Comments B5-56 through B5-87.

B5-56 Comment. Overview

UC Berkeley’s existing softball facility is located in the Berkeley Hills on Centennial Drive, between Stadium Rim Way and Grizzly Peak Boulevard, east of Memorial Stadium, at an approximate elevation of 490 feet above mean sea level (see Figure 1). UC Berkeley’s proposed Softball Field Renovation Project would include 66 LED light fixtures (“luminaires” mounted at 70-90 feet above ground level on six (6) 70-foot tall light poles. The mounting poles would include two for home plate, two for first/third base lines, and two for the outfield. Additionally there would be a 35 foot x 9 foot scoreboard, parking area, bleachers, and TV/press box. The existing bleacher seating would be expanded and outfield walls expanded for a larger field and larger overall footprint.

The area east, northeast, south and southeast of the softball field contains open space preserves and limited developed land uses. With the exceptions of UC Berkeley sports lighting (i.e., Memorial stadium, Witter Rugby Field, and Cal Softball Facility), the adjoining neighborhood is located in an area having minimal artificial light at the eastern urban fringe (see Figure 2). Several houses are located southwest, south, or southeast of the softball field, in the elevation zone 400-580 feet above msl. In the immediate neighborhood of the softball field, houses are located within 350-1,130 feet (110-350 meters) of the centerfield wall (see Figure 3). Additional houses are located at or above the elevation of the proposed luminaries, many but not all being shielded by intervening terrain. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter B5 Figures 1 and 2.]

Response. The commenter is correct that there is existing lighting from Memorial stadium, Witter Rugby Field and the existing Cal Softball facility. As detailed in Draft EIR Section 4.2, Aesthetics, 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 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 (foot candles) and maximum intensity (candela; maximum intensity is an indicator of glare potential) were taken from representative receptor sites in the surrounding area or on the project site (see Draft EIR Figure 4.2-3 and Appendix D). 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 Draft EIR Figure 4.2-4 and Appendix D.

The receptor sites evaluated do not include locations above the elevation of the proposed luminaires (lights); due to the shielded, downward directed nature of the luminaires, all receptor site locations at or above the height of the proposed luminaires inherently cannot have a direct view into the light aperture. As such, there would be a less than significant lighting impact at receptor sites that are located at elevations at or above the height of the proposed luminaires. The receptor sites analyzed in the Draft EIR have the potential for a direct view into the light aperture and were therefore appropriately selected and analyzed in the EIR.

The evaluation of vertical light spill assessed the representative receptor sites in the surrounding area as noted above and evaluated ambient, plus proposed softball with “no obstruction” and “with obstruction” (see Section 4.2, Aesthetics, Table 4.3-4, and Appendix D). “No Obstruction” refers to modeled light levels that do not account for the dense foliage between the receptor and the project site. “With Obstruction” refers to modeled light levels that do account for the dense foliage between the receptor and the project site. The results of the analysis in the Draft EIR and Appendix D indicate that vertical light spill would not exceed the identified threshold of significance for both “No Obstruction” and “With Obstruction” conditions. The threshold of significance selected was for “Low District Brightness / Rural Residential” and approximates the use of the area surrounding the project site (CIE 2017). 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. As explained above, the vertical light spill results at other homes identified by the commenter would be less than the results presented in the lighting analysis based on the narrow, downward-focused condition of the proposed lighting system.

B5-57 Comment. For clarity of exposition, to inform the public fully, the Cal Softball Field Renovation Project Draft EIR should explain that NCAA has best practices for both televised and untelevised sports play. The best practices are not standards per se. One set of best practices is intended for playability and player safety. The additional set of best practices is intended additionally to accommodate the quality of televised sport broadcasting. The Draft EIR cites (pp. 3-16, 3-23, 3-25, 4.2-2) only NCAA lighting best practices for televised night games. For untelevised play, recommended light levels are lower, being 70 footcandles infield / 50 footcandles outfield. For regional or national TV broadcast, the NCAA’s best practices ratchet up—to 100 footcandles infield / 70 footcandles outfield.¹ This increase in lighting has nothing to do with playability, it’s about broadcast cameras. Untelevised games and nighttime practices can be accommodated with lower light levels.

Footnote:

¹ One footcandle is about the same as 10.76 lux.

Response. It is acknowledged that NCAA best lighting practices are not standards per se. However, the Approved American National Standard (ANSI) Recommended Practice for Lighting Sports and Recreational Areas provides that illuminance criteria are similar to those for baseball and for a Class II facility such as this one, are 100 footcandles infield/75 footcandles outfield (Refer to excerpts shown in Final EIR, Appendix C, Annex 2). The ANSI standard does not account for broadcast requirements as stated in Section 4.4 of the IES/ANSI standard, which states:

“.... Even though camera capabilities have increased dramatically, the lighting requirements for television broadcasting still exceed the lighting sufficient for play.

This Recommended Practice is intended as a reference for designing recreational sports facilities and does not focus on the details associated with designing sports lighting systems for professional

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broadcasting. It is recommended that designers who are involved with the design of lighting systems for use in professional sports contact the relevant broadcast company to obtain specific broadcast lighting requirements.”

Moreover, one of UC Berkeley’s primary project objectives is to 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, to support UC Berkeley’s ongoing Title IX commitment (see Draft EIR Chapter 3, Project Description). The NCAA best lighting practices for Softball, for Regional and National Broadcasts (NCAA 2011) meet these objectives.

B5-58 Comment. The Cal Softball Field Renovation Project Draft EIR acknowledges (p. 4.2-7) light pollution, which includes various forms of unwanted light in the night sky, such as glare, light trespass, sky glow from over-lighting. Excerpt:

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. (p. 4.2-7)

While acknowledging this, and while evaluating the effect of specified luminaires on spill light (or “light trespass”) and glare, the Draft EIR fails to evaluate the incremental contribution and cumulative effect of the proposed project on sky glow.

Response. The CEQA Guidelines Appendix G checklist question asks whether a proposed project would “create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?” The analysis provided in Draft EIR Section 4.2, Aesthetics and Appendix D provides for a substantive, quantitative analysis of light and glare. However, see Responses to Comments B5-59 and B5-60 for additional information about skyglow.

B5-59 Comment. For clarity of exposition, to inform the public fully of the potential individual and cumulative effects, the Draft EIR should evaluate and add perspective regarding sky glow. At a minimum, the cumulative sky glow impact of Cal Softball Field Renovation Project with Memorial Stadium and Witter Rugby Field should be evaluated.

Response. See the Response to Comment B5-60 below to address individual project effects on skyglow. Skyglow, though, cannot be quantified in this cumulative fashion. It is inherently not an additive quantity based on local changes. True skyglow (not localized horizon brightening) at this location is more attributable to sources associated with nearby high-density urban areas than to local sources. Importantly at this site, events at Memorial Stadium do not overlap with events at the softball field.

B5-60 Comment. Independent calculation of Upward Flux Ratio, a metric used for evaluating incremental effect upon sky glow, indicates that UFR could be expected in the range of 2.3 and up to 3. In comparison, the threshold of significant effect in Environmental Light Zone E2 is 2. This calculation assumes addition of only the 66 luminaires proposed for the Cal Softball Field Renovation Project, without the 35 foot x 9 foot scoreboard and without off-field pedestrian or parking lot lighting. This result is unsurprising as all sports facilities with lighting generate upward light from reflection—even those having no upward-directed

luminaires. The amount of reflected light depends on the amount of source light (lumens) and the reflective quality of the surfaces.

Response. The commenter states that “[Upward Flux Ratio] could be expected in the range of 2.3 and up to 3” and provides a supplemental calculation in Attachment C to his memo stating assumed inputs. The amount of source light and the reflective quality of the field is accounted for in the calculation. The following table provides a comparison using the actual project-specific inputs for this calculation, as well as a comparison to existing conditions:

Commenter's Calculation of Upward Flux Ratio with Assumed Inputs		Expert [HLB Lighting] Calculation of Upward Flux Ratio with Confirmed Project-Specific Inputs			Expert [HLB Lighting] Calculation of EXISTING Upward Flux Ratio with Inputs Derived from Field Measurements and Model		
Input	Value	Input	Value	Source	Input	Value	Source
E/E_m	1.05	E/E_m	1.00	Per manufacturer's calculations	E/E_m	1.00	No anticipated depreciation
$R_{ULO,a}$	0	$R_{ULO,a}$	9%	Per manufacturer's calculations	$R_{ULO,a}$	11%	Per AGI model used to simulate existing conditions
$R_{DLO,a}$	1	$R_{DLO,a}$	91%	Per manufacturer's calculations	$R_{DLO,a}$	89%	Per AGI model used to simulate existing conditions
p_1	0.25	p_1	0.25	Conservative - typical skyglow calculations assume	p_1	0.25	Conservative - typical skyglow calculations assume
p_2	0.32	p_2	0.25	15% ground reflectance	p_2	0.25	15% ground reflectance
u	0.52	u	0.823	Per manufacturer's calculations	u	0.521	Per AGI model used to simulate existing conditions
RESULT		RESULT			RESULT		
UFR = 2.3		UFR = 1.6			UFR = 2.6		

As shown, the proposed project complies with the CIE threshold of 2.0 UFR in Environmental Zone E2. Additionally, the proposed project would reduce skyglow compared to existing conditions. Final EIR Appendix C concluded that the impact of the proposed project on skyglow would be less than significant based on comparison to the CIE threshold. However, as skyglow is reduced compared to existing conditions, Final EIR Chapter 2, Revisions to Draft EIR, indicates that the proposed project would have *no impact* related to skyglow. This conclusion is also reflected throughout this Final EIR Chapter 3, Comments and Responses, where relevant.

Additionally, the proposed lighting system not only provides shielded downward-directed lighting, which is known to have the least impact on both skyglow and glare but has been specifically engineered by the manufacturer to avoid any direct light emissions between 85° and 100° above nadir which is known to be the zone most significant contributor to both glare and skyglow. Refer to the table below copied from Page 50 of the commenter's letter.

Table 1: The effect on the ability to view the night sky at various angles

 Indicative diagram	Angle of light emitted (degrees)	Sky glow effect	Glare effect
	100 - 180	Local	Little
	95 - 100	Significant	Some
	90 - 95	High	High
	85 - 90	Significant	High
	0 - 85	Minimum	Some

See also Final EIR Chapter 2, Revisions to Draft EIR, for minor changes to Draft EIR Section 4.2, Aesthetics, related to skyglow.

B5-61 Comment. Sky glow over a stadium or lighted sports field appears as a milky white “fog” (see Figure 4). It can be lessened or minimized but practically is unavoidable. The degree of visible sky glow depends, in part, upon viewing location and contrast in the field of view of the observer. Sky glow adversely affects not only star gazing but also nighttime viewing. Silhouettes of ridgelines or tree lines, which normally appear black, become grayed from sky glow over a stadium. Unlike the effect of glare, the effect of sky glow does not require a direct line-of-sight to a luminaire. Unlike spill light cast directly from luminaires and crossing the boundary of a lighted sports field, most sky glow in modern sports lighting installations is an indirect result of reflected light.

Response. The commenter states that “Sky glow over a stadium or lighting sports field appears as a milky white “fog”, referencing Figure 4 in their letter. Figure 4 has no scientific basis cited and appears to be a graphic derived from opinion only and based on lighting from Memorial Stadium. The current lighting at Memorial Stadium is mounted lower above the grade than the project’s proposed replacement lights due to the sunken nature of the playing field. There are significantly more individual luminaires that have a higher light output as the light level standards for football per NCAA standards for a Division 1 stadium are 100 footcandles average across a much larger area than the softball field. Therefore, even if Figure 4 was based on anything other than unsupported opinion, it is not representative of lighting impacts from the proposed project.

The commenter acknowledges that the localized near-horizon brightening due to the scattering of light by moisture in the air is “practically.... unavoidable.” Additionally, the near-horizon brightening will also increase the impact of the nearby metropolitan areas on the site, decreasing the relative effect on this horizon brightening due to local sources. The lights from Berkeley are the primary source of horizon brightening in the vicinity of the proposed project during most conditions. Every light, no matter how bright, will create a near-horizon brightening effect during the temporary marine layer weather events. The effect created by the proposed lighting will be less intense than the effect created by the existing lighting due to the downward, shielded orientation of the proposed lighting fixtures.

B5-62 Comment. To minimize the expected impact of sky glow mitigation measures, performance and design criteria, or restrictions on proposed lighting are warranted. The absence of these in the Draft EIR is at odds with acknowledgment given in Cal Softball Field Renovation Project Draft EIR of the cumulative lighting impacts from other athletic facilities in the project area such as the Memorial Stadium and Witter Rugby Field. In general, this defies the fact that nighttime use of lighted sport fields generally is acknowledged by both CEQA practitioners and lighting practitioners as potentially a significant source of spill light, glare, and also sky glow.

Response. As described in Response to Comment B5-60, the proposed project would have no impact on skyglow. Therefore, skyglow mitigation measures are not warranted. Draft EIR Section 4.2, Aesthetics and Appendix D analyze the impacts of the proposed project related to light and glare under both proposed project and cumulative conditions. Modeling of vertical light spill and maximum intensity (an indicator of glare potential) was conducted, and the results presented in Draft EIR Appendix D and Section 4.2, Aesthetics. Both the project and cumulative analyses demonstrate that the impact of the project related to vertical light spill would be less than significant (see Impact AES-3 and Impact AES-4, as well as Appendix D). The cumulative vertical light spill analysis of the proposed project includes the adjacent Witter Field, but does not include Memorial Stadium lighting, as events scheduled at Memorial Stadium do not

overlap with games scheduled at the Cal Softball Field. The project analyses demonstrate that the impact of the project related to glare would be less than significant (see Impact AES-3).

While lighted sports fields may have the potential to result in potentially significant source of spill light and glare, as noted by the commenter, modeling conducted for the proposed project in Draft EIR Appendix D, using appropriate quantitative thresholds, indicates that the impacts of vertical light spill and glare would be less than significant. 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 Draft EIR Appendix D). Lastly, the existing conditions for the proposed project include the use of the existing Cal Softball Field into the evenings for team practices and intramural use, which involves the use of existing field lights. Therefore, the proposed project would not result in new sports lighting on a site and area that is devoid of existing sports lighting.

B5-63 Comment. Analysis presented in the Draft EIR and Appendix D appears rigorous. However, looking carefully, we find scant details—not even the name of the photometric mode is mentioned more than parenthetically. The model, AGI32, is mentioned by name once, parenthetically, in Appendix D. How was the model applied (e.g., 3-D or flat, with or without terrain, with or without structures)? Based upon the photometric sheets presented at the end of Appendix D it appears that prediction plans were used at varying height above the plane of the playing field. Upward light output or reflected light were not evaluated.

Response. AGI32 is the software used in the technical analysis to provide a model of the existing conditions to provide approximation of the shielding impact of existing conditions. Additional information regarding the existing conditions model has been included as an annex to Final EIR Appendix C (see Annex 3). The output shown in Section 14 of the lighting technical report in Draft EIR Appendix D is provided by the Manufacturer, as stated, and all input information including luminaire information and geometric conditions are provided.

The AGI model constructed for the existing conditions was based on satellite imagery to ensure modeled geometry matches current conditions, including relative heights of the receptor sites relative to field level. The existing lighting was modeled using photometry of light fixtures that matching distribution (beam spread) of the existing fixtures. The model was then validated using a series of calibration points (namely, the horizontal illuminance measured at the four bases, midway along all four baselines, the pitcher's mound, and six locations in the outfield) that were field-measured and then validated in the model.

The Manufacturer's model for the proposed lighting conditions was provided by Musco's engineering team and is used as the basis for performance specification and warranty for their lighting system.

B5-64 Comment. The AGI32 model is highly capable; however, it appears to have been applied for a preliminary evaluation in a relatively simplistic flat-plane mode, which requires far less data input. The AGI32 model can simulate lighting effects across multiple calculation planes in addition to the playing field plane. AGI32 receiver calculation points can be aimed in any direction. Receiver elevations can be entered in cases of complex versus flat-plane topography. While the AGI32 model is highly capable, neither the Draft EIR nor Appendix D explains in lay or technical terms how the model actually was applied.

Response. See Response to Comment B5-63 above. The analysis was not based on a flat-plane mode. It was applied to match the existing topography and represents an accurate estimate of lighting impacts.

B5-65 Comment. The model output, numbers such as lux or footcandles for spill light and candela for glare, do not address sky glow and do not communicate degree of impact, individual or cumulative, on nighttime views. Scenic vistas and nighttime views are available from the trails and hillside vantages. The Draft EIR (p. 4.2-2) acknowledges these trails and outstanding scenic vistas:

The local elevation in the Hill Campus East provides for panoramic westward views towards the San Francisco Bay and City of San Francisco. 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.

Response. As described in Response to Comment B5-60, the proposed project would have no impact on skyglow. The Draft EIR Section 4.2, Aesthetics (Impact AES-1), evaluates the impact of the proposed project related to scenic vistas, including the effects associated with light and glare. The analysis indicates that, 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 Draft EIR Figure 4.2-8).

In addition, the proposed increase in total number of onsite light 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. The impact of the proposed project related to scenic vistas was determined to be less than significant (see Impact AES-1).

Additionally, as described in the Response to Comment B5-56 above, the view from locations at or above the height of the luminaires would not include views of the lights themselves, but instead views of luminaire housing. Therefore, there would be a less than significant amount of light or glare visible from the trails identified by the commenter. Views of the field were also observed to be almost entirely obstructed from publicly-accessible locations to the south and southwest of the project.

B5-66 Comment. Trails mentioned in the Draft EIR (p. 4.2-2, 4.2-7 & -8, 4.2-30,) include Upper Jordan Trail and an unnamed southwest-northeast trail running into the Hill Campus East from the eastern end of Canyon Road. In addition to trails mentioned in the Draft EIR (p. 4.2-13), there are Panoramic Ridge East-West Trail, Gwinn Canyon Trail, and Bay Ridge Trail (also known as the Skyline National Trail). These offer available scenic vistas from a variety of public viewing locations. The Panoramic Ridge East-West Trail in the Claremont Canyon Regional Preserve and Clark Kerr Fire Trail also in the Claremont Canyon Regional Preserve offer some of the best scenic views in the San Francisco Bay region.

Response. The trails mentioned in the Draft EIR Section 4.2, Aesthetics, including Upper Jordan Trail and an unnamed southwest-northeast trail running into the Hill Campus East from the eastern end of Canyon Road are identified in the analysis, as they are the closest trails to the project site. 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 are also identified (see Impact AES-1 and AES-2). The trails and other locations noted by the commenter, including Panoramic Ridge East-West Trail, Gwinn Canyon Trail, and Bay Ridge Trail (also known as the Skyline National Trail) and the Claremont Canyon Regional Preserve are located further away from the project site to the southeast and most of these areas are on the other side of Panoramic Ridge and/or would not have direct views of the project site. As such, these locations are outside of the assessment area for aesthetic impacts.

B5-67 Comment. Of spill light, glare, and sky glow, the Cal Softball Field Renovation Project Draft EIR addresses two of the three—spill light and glare. However, sky glow is more relevant to nighttime viewing. The Draft EIR appropriately recognizes (pp. 4.2-16, 4.2-33) the low ambient light setting on the edge of urban Berkeley by characterizing the light setting as E2. For the E2 zone, and for other defined ambient light zones, various lighting organizations such as CIE and ILP have recommended guidance on maximum acceptable and practically achievable levels of spill light, glare, and sky glow. The three metrics are vertical illuminance (in footcandles or lux) for spill light, luminous intensity (in candela) for glare, and upward waste light ratio or upward flux ratio (unitless ratios) for sky glow. Sky glow is acknowledged in the Draft EIR (p. 4.2-7), but it is not evaluated.

Unlike spill light and glare, effects of which generally are localized and specific to neighbors of a lighting installation, sky glow is an individual and cumulative effect and impairs local viewing of scenery and the night sky by a broader community. Therefore, it is especially important not only to acknowledge the sky glow effect, both individual and cumulative with Memorial Stadium and Witter Rugby Field, but also to evaluate the degree of impact on nighttime views. AGi32 model results presented in the Draft EIR and Appendix D fail to communicate any of these impacts.

Response. As described in Response to Comment B5-60, the proposed project would have no impact on skyglow.

B5-68 Comment. Corrections for shielding by vegetation are included in the analysis (see Table 4.2-6, p. 4.2-35). These corrections are made ad hoc, outside the photometric modeling, to account for obstructions between light source and receiver. These obstructions are neither buildings nor terrain but “dense foliage” between receivers and the project site. We have no assurance from the Draft EIR text or Appendix D that the same corrections applied for receivers A, B, C, and D should be applied to other receivers which were not evaluated and which could receive spill light from the Cal Softball Field. These receivers are illustrated here in Figures 1 and 3 (yellow-shaded area).

Response. The commenter takes issue with the selected receiver sites and states “we have no assurance... that the same correction factors applied for receivers... should be applied to other receivers which were not evaluated and which could receive spill light...”. Receptor Site A, which is located immediately adjacent to the site is reported to be below significance without any shielding impact of vegetation and due to the downward orientation of the luminaires. As is explicitly clear through the Manufacturer’s photometric analysis, independent of vegetation, light spill will only continue to fall off as one moves further from the project site allowing the reasonable conclusion that light spill at other receptor locations would also be less than significant. Additionally, excluding the impact of any obstruction due to vegetation, all receptor sites have been demonstrated to less than the appropriate significance thresholds.

B5-69 Comment. 1. An available metric for quantifying a project’s contribution to sky glow is Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation’s luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other

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surfaces) and compares this sum to the amount of light reflected from the playing field. A UFR of 2, or lower, results for facilities having no upward directed light and minimal reflected light except that reflected up from the playing field. Such facilities minimize their cumulative contributions to sky glow.

Response. Skyglow is officially defined by the International Dark-Sky Association, and generally accepted in practice, as “The brightening of the night sky that results from the scattering and reflection of light from the constituents of the atmosphere (gaseous molecules and aerosols), in the direction of the observer. It has two separate components: natural sky glow and artificial sky glow.” Local temporary brightening effects due to transient environmental conditions such as pockets of high humidity that lead to temporary brightening conditions due to increased scattering are not skyglow per the industry-standard definition. See Response to Comment B5-60 above for a full calculation of UFR, the metric relevant to skyglow, demonstrating the proposed project does not exceed the threshold.

B5-70 Comment. 2. (pp. 3-16, 3-23, 3-25, 4.2-2) The Cal Softball Field Renovation Project Draft EIR cites NCAA lighting best practice for televised night games. For untelevised play, the NCAA’s recommended light levels are lower, being 70 footcandles infield / 50 footcandles outfield. However, for regional or national TV broadcast, the levels ratchet up—to 100 footcandles infield / 70 footcandles outfield. This increase in lighting has the sole purpose broadcast quality and has nothing to do with safety or playability. Untelevised games and nighttime practices could be accommodated with lower light levels. Note: One footcandle is about the same as 10.76 lux.

NCAA does not call these “standards.” NCAA titles them as Recommended Best Lighting Practices and advises similarly for non-televised and televised intercollegiate play as follows:

TELEVISED: Following these recommended best practices will help ensure quality of light needed for the safety of participants, enjoyment of spectators, and quality regional and national television broadcasts, as required. (see Attachment B)

NON-TELEVISED: Following these recommended best practices will help ensure quality of light needed for the safety of participants and the enjoyment of spectators, as required. (see Attachment B)

Response. See Response to Comment B5-57 for a response to this comment.

B5-71 Comment. 3. (p. 4.2-1) The field itself including the dirt infield, turf outfield, warning track, home plate and foul areas is approximately 40,000 square feet (0.9 acre). The facility with bleachers, striped parking, landscape areas is larger.

Response. The model included the surrounding amenities (e.g., bleachers). Parking and landscape lighting were not included. The parking lot will be decreased in size with the proposed project and any lighting in the parking lot and landscape areas will be required to comply with CalGreen (Title 24 Part 11), which limits the permissible amount of uplight to make its impact negligible on the current findings. will have a negligible impact on the vertical spill light and glare in the Draft EIR, as well as the skyglow calculations included in the response to B5-60 above and, as such, would not change the impact conclusions presented in the Draft EIR or this Final EIR.

B5-72 Comment. 4. (p. 4.2-7) The Cal Softball Field Renovation Project Draft EIR acknowledges light pollution, which includes various forms of unwanted light in the night sky, such as glare, light trespass, sky glow from over-lighting. The Draft EIR further acknowledges that views of the night sky are an important part of the

natural environment and that excessive light and glare can be visually disruptive to humans and nocturnal animal species.

Response. The general statements referenced in the comment from the Draft EIR are intended to provide context for the analysis and are not impact conclusions. Draft EIR Section 4.2, Aesthetics and Appendix D provide a quantitative analysis of vertical light spill and maximum intensity (glare). The results of that analysis are summarized in Responses to Comments B5-56 and B5-62. As described in Response to Comment B5-60, the proposed project would have no impact on skyglow. Lastly, Draft EIR Section 4.3, Biological Resources, provides analysis of the potential for night lighting to impact wildlife. All impacts were determined to be less than significant (see Impact BIO-1, Impact BIO-4 and Impact BIO-5).

B5-73 Comment. 5. (pp. 1-7 and 6-3) The Cal Softball Field Renovation Project Draft EIR acknowledges as areas of concern and controversy both lighting impacts on nearby residents during softball games and practices and cumulative lighting impacts from other athletic facilities in the neighborhood of the project. Nighttime use of lighted sport fields generally is acknowledged by lighting practitioners as potentially a significant source of spill light, glare, and sky glow. Even so, potential impacts including spill light and glare are labeled in this Draft EIR as less-than-significant effects. But sky glow is not even evaluated.

Response. Draft EIR Section 4.2, Aesthetics and Appendix D provide a quantitative analysis of vertical light spill and maximum intensity (glare). As stated therein, the "Known Areas of Controversy" identified in Section 1.6 of the Draft EIR are concerns that are likely to generate the greatest interest based on the input received during the scoping process, rather than a statement or analysis of the actual impacts of the project. The results of that analysis are summarized in Responses to Comments B5-56 and B5-62. While lighted sports fields may have the potential to result in potentially significant source of spill light and glare, as noted by the commenter, modeling conducted for the proposed project in Draft EIR Appendix D, using appropriate quantitative thresholds, indicates that the impacts of vertical light spill and glare would be less than significant. Additionally, as described in Response to Comment B5-60, the proposed project would have no impact on skyglow.

B5-74 Comment. 6. (pp. 1-7, 4.2-32, -33, -34 and -35, and 6-3) Spill light and glare impacts appear to be evaluated in the Draft EIR and reported in Tables 4.2-4 and 4.2-5 for an optimized system having specific 90-foot tall pole heights, specific number and kind of luminaires, and specific luminaire aiming. The as-built system could differ, resulting in adverse spill light and glare effects. Therefore, performance and design criteria should be required or the installation certified (e.g., Dark Sky Certification).

Response. Installation certification for this specific application comes from manufacturer warranty-based validation that the installed system performs as designed. Given that, the proposed project sports lighting would be built as designed and performance and design criteria are warranted to provide for assurance that the installed system would perform as designed. Dark Sky Certification is not a requirement of the proposed project.

B5-75 Comment. 7. (Appendix D) The technical appendix is relied upon in the Draft EIR for conclusions about the degree of lighting effects. Neither the Draft EIR nor Appendix D convey in lay terms how the photometric model was applied (e.g., 3-D or flat, with or without terrain, with or without structures). The AGi32 model is highly capable but it can also be applied in simplistic modes with less data input for preliminary evaluations. The AGi32 model can simulate lighting effects across multiple calculation planes in addition to the playing field plane. AGi32 receiver calculation points can be aimed in any direction. Receiver

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elevations can be entered in cases of complex versus flat-plane topography. While the AGi32 model is highly capable, the Draft EIR and Appendix D do not explain how the model used actually was applied.

Response. See Final EIR Appendix C (Annex 3) for additional information regarding the model of existing conditions. See Response to Comment B5-63 above for additional information.

B5-76 Comment. 8. (p. 4.2-33) Shielding by vegetation is included in the analysis. These corrections are made ad hoc, outside the photometric modeling, to account for obstructions between light source and receiver. Unlike terrain or buildings, trees, shrubs, and their leaf canopies may not be so unchanging depending on age, condition, species, and events such as fire. It would be conservative to evaluate the spill light impacts without this ad hoc treatment of the model results and implicit assumption that the foliage is unchanging and permanent.

Response. See Response to Comment B5-68 for a response to this comment. The lighting analysis demonstrates that the Project's lighting impacts are less than significant, with or without shielding from existing vegetation. Therefore, while speculative, any future material change to the vegetation that currently exists between the softball field and the receptor sites would not change the impact conclusions in the Draft EIR.

B5-77 Comment. 9. (Table 4.2-4, p. 4.2-33, and Table 4.2-6, p. 4.2-35) Text in the Draft EIR and footnotes in Tables 4.2-4 and 4.2-6 do not identify receivers A, B, C, or D as points of maximum impact. Therefore, other nearby receivers along Canyon Road and along the associated trail could have higher cumulative spill light levels, which may exceed 0.46 lux, which is the threshold of significant effect.

Spill light (lux values) in Tables 4.2-4 and 4.2-6 should be explained, especially those having a "less than" ("<") symbol. The less than (<) and plus (+) symbols are inappropriate for lay presentation as their meanings are unclear. Addition of <0.06 plus <0.06 lux plus 0.06 lux could be up to <0.18 lux. The caption "Ambient+" needs to be explained as it makes little sense on its own. Interpreted as upper bounds, the reported lux levels outside the project site may approach or exceed the threshold of significant effect at A and other receivers.

Response. Modeling and measurements occurred at representative sites where there are known receptors. As described in Response to Comment B5-53, Receptor Site A is the private property in closest proximity to the project and can be reasonably assumed to be the worst-case scenario for spill light.

The uses of the "less than" symbol in Draft EIR Tables 4.2-4 and 4.2-6 are explained in the lighting technical report as indicating where measured light levels were below the meter threshold of 0.06 footcandles. It would be inappropriate to represent those values as zero, so the report accurately stated that they can only be reasonably shown to be less than 0.06 footcandles.

The "Ambient" column, as stated in the lighting technical report, is the spill light measured with all existing softball and rugby lighting off and is due to lighting in the area unassociated with the project.

The commenter's reinterpretation of the data presented in Table 1 of the comment is inaccurate. For example, for Receptor Site C:

- The commenter shows < 0.18 footcandles for the "Softball + Rugby + Ambient" condition. This is incorrect. Per Draft EIR Table 4.2-1, the existing conditions were field-measured to be below meter

threshold and therefore is <0.06 footcandles. The commenter appears to be misinterpreting the table of the existing conditions, which was thoroughly described in the technical lighting report, where three existing conditions were measured (“Softball + Rugby + Ambient,” “Rugby + Ambient,” and “Ambient Only”), resulting in the derivation of the “Softball Only” and “Rugby Only” lighting conditions. For example, the “Softball + Rugby + Ambient” condition was field-measured to be <0.06 fc and their derivation of this condition as <0.18 footcandles is incorrect.

B5-78 Comment. 10. (Table 4.2-5, p. 4.2-34) Glare (candela values) in Table 4.2-4 should be explained and rounded to the nearest 100 candela. Since the values represent brightness of individual luminaires or luminaire groups—and are not additive sums of brightness—the caption “Ambient+” needs to be deleted or explained in lay terms as it makes little sense on its own.

Response. The request to round the candela values to the nearest 100 is arbitrary and inappropriate when reporting field-measured values. Glare values of existing conditions are explained in Section 6 of the technical lighting report in Draft EIR Appendix D and are not purported to represent individual luminaires or luminaire groups but represent the brightest measurable area within the field of view that may or may not be comprised of luminaires. The type of meters used to measure brightness take a sample of measured values across a very small area of what is visible within the entire field of view, so in cases where the existing luminaires are fully obstructed, the brightest object may be the playing surface, streetlights, or other sources of direct or reflected illumination.

The headers of the table, consistent with other reporting in the lighting technical report, reference the lighting conditions. “Ambient + Existing Softball” and “Ambient + Anticipated Softball” clearly describes that the measured or simulated lighting conditions account for sources associated with the project and additional adjacent sources of brightness (ambient lighting from sources such as streetlights, houses, campus buildings, and nearby development).

B5-79 Comment. 11. (Table 4.2-6, p. 4.2-35) Text in the Draft EIR and footnotes in Table 4.2-6 do not identify receivers A, B, C, or D as points of maximum impact. Therefore, other nearby receivers such as those along Canyon Road and along the associated trail could have higher cumulative candela levels of 10,000 to 13,000 cd, which exceed the threshold of significant effect (7500 cd).

Response. See Response to Comment B5-56 above. Receivers A, B, C, and D are points of maximum impact based on their location relative to the Project site.

The commenter’s speculative conclusion is factually incorrect. The unit of candela is fundamentally not additive when considering glare within a field of view, and therefore this interpretation of “cumulative” by the commenter is factually incorrect and demonstrates a lack of understanding of the fundamental units included in the lighting technical analysis.

B5-80 Comment. 12. (pp. 4.2-16, 4.2-33) The Draft EIR appropriately recognizes the low ambient light setting on the edge of urban Berkeley by characterizing the light setting as E2 (see Figure 2). For the E2 zone, and for other defined ambient light zones, various lighting organizations such as CIE and ILP have recommended guidance on maximum acceptable and practically achievable levels of spill light, glare, and sky glow.

CIE 150: 2017 presents guidelines for assessing the environmental impacts of outdoor lighting and provides recommended limits for relevant lighting parameters to contain the obtrusive effects of outdoor lighting. Obtrusive effects of outdoor lighting are best controlled initially by appropriate design; therefore, the CIE guidance focuses on new installations.

Applicable guidance has been published, for example, by the Commission Internationale d'Éclairage (CIE) and Institution for Lighting Professionals (ILP), which provide criteria for evaluating impacts of outdoor sports lighting. The CIE and ILP guidance references provide thresholds of significant effects for all three (i.e., spill light, glare, and sky glow). CIE 2017 considers potentially adverse effects of outdoor lighting on nearby residents; users of adjacent roads (e.g., pedestrians, cyclists); sightseers; beacons and similar systems (e.g., air, marine, rail); and, astronomical observations. Effects of lighting on the natural environment can be difficult to quantify, and CIE 2017 does not address these effects. When there are fields, mountains, forests, rivers, lakes and/or coastline, located close to a lighting installation, there is the possibility, depending upon the season, of the lighting having an adverse effect on insects, plants and animals within the area of the proposed installation (CIE 2017).

CIE 2017 is intended for use by a) planning bodies, particularly local government authorities, to assist in assessing the potential obtrusiveness of outdoor lighting installations and b) designers of outdoor lighting to reduce obtrusive effects to an acceptable degree (CIE 2017). The same thresholds of significant environmental effect are adopted in the guidance published by ILP. See Attachment A for ILP's Guidance Note 01/21: The Reduction of Obtrusive Light.

Response. CIE 2017 is indeed the relevant international standard and was cited in the Draft EIR lighting technical report (see Appendix D) to determine the relevant threshold of significance for light trespass. It also serves as the technical underpinning for the relevant BN used to determine the threshold for glare, though the BN standard presents the information in a more simply applied format. Additionally, see Response to Comment B5-60 above for the analysis per CIE 2017 for skyglow.

B5-81 Comment. 13. (pp. 4.2-33 and 4.2-34) Of spill light, glare, and sky glow, the Cal Softball Field Renovation Project Draft EIR addresses two of the three—spill light and glare. The three metrics are vertical illuminance (in footcandles or lux) for spill light, luminous intensity (in candela) for glare, and upward waste light ratio or upward flux ratio (unitless ratios) for sky glow. Sky glow is not evaluated.

Response. See Response to Comment B5-60 for an analysis of skyglow.

B5-82 Comment. 14. (p. 4.2-7) Sky glow is acknowledged in the Draft EIR, but it is not evaluated. An available metric for quantifying a project's contribution to sky glow is Upward Waste Light Ratio (UWLR) or Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation's luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field. Independent analysis of the proposed project indicates that the UFR could be in the range 2–3. This is without consideration of the parking lot lighting, path lighting, or the 35 foot x 9 foot scoreboard. Analysis confirms the rather obvious fact that light will be reflected up off the field and bleachers.

Response. See Response to Comment B5-60 for an analysis of skyglow. See Response to Comment B5-71 above regarding parking lot lighting. Scoreboard specifications include shielding and dimming to minimize vertical light spill, glare, and skyglow, and will need to meet all relevant criteria included in Title 24. Given these specs, the scoreboard will not change the conclusions provided in the lighting technical report.

B5-83 Comment. 15. (p. 4.2-7) Sky glow will affect views of the night sky and scenic views from the Berkeley Hills. It's like a graying of the sky which impedes viewing clarity and viewing of fainter stars, constellations, or planets.

Response. See Response to Comment B5-60 above. Additionally, this local temporary brightening effect is not unique to sports lighting but is true of many lighting installations as stated in the San Marin High School Stadium Lights Project exhibit provided by the commenter (Page 7, paragraph 3). However, the current project is in a different location with different conditions than the commenter's reference at San Marin high school. As demonstrated in Response to Comment B5-60, the proposed project would have no impact on skyglow.

B5-84 Comment. Mitigation Measures and Continuing Best Practices (CBPs)

UC Berkeley would implement continuing best practices (CBPs) for aesthetics (AES) listed in the Cal Softball Renovation Project Draft EIR (p. 4.2-31):

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

However, neither is intended or would be effective for minimizing sky glow from sports lighting. These two CBPs are almost certainly intended for architectural lighting and not sports lighting. "Historic character," "exterior surface," "architectural screens," "shading devices," and "preferable to reflective glass" are terms that fit the context of building architecture but have not so much to do with specialized sports field or court lighting. These CBPs are intended to minimize spill light and glare from architectural and parking lot or path lighting.

Response. As described in Response to Comment B5-59 and B5-60, the proposed project would have no impact on skyglow. Therefore, skyglow mitigation measures are not warranted. Additionally, vertical light spill and glare impacts were also determined to be less than significant in Draft EIR Section 4.2, Aesthetics, and therefore mitigation measures for these lighting impacts are not warranted.

Both CBP AES-6 and -7 are implemented with the proposed project. The installation of shields and cut offs on light fixtures, the precise downward direction of installed field lights, operation of a lighting control system that would facilitate quick and computer-controlled fixture adjustments to ensure proper field illumination, and the optimization of the initial light design through aiming adjustment, pole location adjustment, and lighting height optimization were all conducted to reduce potential lighting impacts under CBP AES-6 and CBP AES-7. The proposed manufacturer leads the sports lighting industry in developing neighborhood-friendly sports lighting, including being an active supporter of the International Dark-Sky Association.

B5-85 Comment. Receiver Locations

The Draft EIR considers relatively few receiver locations for evaluating lighting effects. Receiver locations are described generally in the Draft EIR (p. 4.2-32, -33, -34 & -35), which identifies and evaluates the proposed project's lighting effects on four (4) receivers A, B, C, and D. From the Draft EIR context, we believe that the analysis basically was limited to receivers having a direct line-of-sight to the proposed luminaires in the Cal Softball Field.

Response. See Response to Comment B5-56 above. Receivers with a direct line of sight to the proposed luminaries would be exposed to more light and glare impact than any other receivers. Therefore, the receivers analyzed in the Draft EIR represent those that would experience the maximum potential light and glare impacts. The commenter has not identified any other receivers that would experience light or glare impacts above the significance thresholds.

B5-86 Comment. Many more receivers in the neighborhood and on the public streets and trails will experience the sky glow of reflected light over the softball field, Witter Rugby Field, and Memorial Stadium. The sky glow effect is not limited to viewers having a direct line-of-sight to the luminaires.

Response. See Responses to Comments B5-60 (skyglow) and B5-56 (receptor site locations) above.

B5-87 Comment. Many more receivers than A, B, C, and D also may have lines-of-sight to the proposed luminaires over the existing softball field. Table 2 (next page) lists proximate candidates. Some have lines-of-sight that may be obscured by intervening trees and shrubs but not by terrain. Viewing elevations of these receiver vary relative to the 90-foot tall luminaire mounting heights poles. Figures 1 and 3 illustrate the zone (yellow-shaded) having an approximate elevation range of 400-580 feet msl, which is at or below proposed luminaire mounting elevation of approximately 580 feet msl. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter B5 Table.]

Response. See Response to Comment B5-56 above.

Letter C1 John Stenzel

C1-1 Comment. RE: Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project

Thank you for soliciting public comment on the latest installment of the University's development plans--in this case, for the women's softball complex. Over my 31 years living near the second hairpin (Panoramic and Mosswood) I have seen how much the UC has ratcheted up the use of the rugby field and the women's softball facility, as well as the nearly half a billion dollar investment in Memorial Stadium and the High Performance Athletic Facility and the parking garages and on and on and on. For each incremental increase in construction noise, traffic congestion, light pollution, etc., we have seen a parade of DEIRs that low-ball the impacts, and none of these DEIRs contains an honest and complete discussion of alternatives, a fundamental tenet of CEQA compliance, nor a realistic analysis of the cumulative impacts of low-level noise on the mental and physical health of residents subjected to frequent bursts of stress-inducing noise pulses.

Response. The comment states the commenter's experience as being a neighbor to UC Berkeley. The comment is focused on previous development's impacts on the neighborhood. The commenter opines that previous EIRs have not contained adequate discussion of alternatives and have underestimated impacts. The comment does not specifically address the proposed project and impact conclusions within

the Draft EIR. See Responses to Comments C1-2 through C1-9 for other responses to issues raised by the commenter.

C1-2 Comment. The current DEIR for the building of a top-class softball stadium (let's not sugar-coat this with "renovation of a field" nonsense) is no exception. In dismissing every other possible location, section 6.3.2 is takes less than a page from the 300+ page document to dismiss every other siting alternative with what amounts to "This site would be not be possible because the NCAA requires X or Y" or "This site would be inconvenient for our athletes to walk to" (although most athletes use scooters and never stop at stop signs). Once again the longtime property owners in the neighborhood will pay a continuing price so that a few dozen athletes and their thousands of supporters can practice and play and party in a multimillion-dollar facility, located in a bottleneck of severely reduced road access, with a canyon chock-full of wildfire-prone unmaintained vegetation just above it and already-congested streets below. What could possibly go wrong?

Response. The proposed project is the renovation of an existing softball field, and the project meets the University's definition for major renovation; see Response to Comment B3-5. The comment suggests that the Draft EIR does not contain adequate analysis of alternatives. A range of sites were considered as demonstrated in Draft EIR Chapter 6, Alternatives. See also Response to Comment B3-3 for a summary of the alternatives analysis conducted in the Draft EIR, Chapter 6. Also see Chapter 2, Revisions to Draft EIR, of this Final EIR for consideration of an additional off-site alternative at Edwards Stadium. Additionally, the comment suggests that the commenter disagrees with the reasons discussed in the Draft EIR for rejecting alternative sites. The project objectives outlined in Draft EIR Chapter 3, Project Description (Section 3.5) center around the fundamental purpose of the project: providing an equitable facility for women's softball that is compliant with Title IX. As further outlined there, a site that is Title IX compliant must meet NCAA design requirements, which are further outlined therein. That the women's softball field be in a location with walkable access to campus academic and athletic resources is also a project objective. A lead agency has broad discretion in defining project objectives. Relevant case law provides that "CEQA does not restrict an agency's discretion to identify and pursue a particular project designed to meet a particular set of objectives." (*California Oak Foundation v. Regents of the University of California* (2010) 188 Cal.App.4th 227, 276.). CEQA Guidelines Section 15126.6(a) requires that an EIR describe a range of alternatives "which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." As further provided in CEQA Guidelines Section 15126.6(C), "failure to meet most of the basic project objectives" is "[a]mong the factors that may be used to eliminate alternatives from detailed consideration in an EIR." 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. *Yerba Buena Neighborhood Consortium, LLC v. Regents of University of California* (2023) 95 Cal.App.5th 779, 795-799. As such, the reasons cited in the Draft EIR, and referenced by commenter, for rejecting alternatives are consistent with CEQA.

Regarding wildfire concerns raised by the commenter, Draft EIR Section 4.7, Wildfire, provides an evaluation of potential project impacts related to wildfire and specifically refers to the wildfire protection plan prepared for the proposed project (see Draft EIR Appendix C), as well as the fire evacuation analysis prepared for the proposed project (see Draft EIR Appendix H). The fire evacuation analysis was performed to determine how long it would take for users and spectators of the Cal Softball Field, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. All proposed project impacts related to wildfire-related evacuation were determined to be less than significant.

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C1-3 Comment. The University has paid millions, no doubt, for consulting firms to write copious reports based on mistaken assumptions. Let's look at just one—the noise calculations. High levels of noise are harmful, no one would dispute that, so the noise reports all track high-decibel intrusions (and analyze ground vibration for many many pages) before concluding that the current project will have no adverse effects. From what I can gather, much of these calculations involve averaging over the course of a day, thus smoothing out whatever data the microphones on Mosswood Road neighbors' back decks might pick up (section 4.5.3)

Response. See Responses to Comments B5-37 through B5-54 for detailed responses to comments on the Draft EIR noise analysis contained in Draft EIR Section 4.5, Noise. These responses are also provided in Final EIR Appendix B, Response to Letter B5, Exhibit A (Noise). As described in Response to Comment B5-46, the period of the day in which competitive softball games would be hosted varies, and therefore comparison of average noise levels from a multi-hour competitive softball game against an ambient average of hourly noise levels across the daytime period (7 a.m. to 10 p.m.) is standard practice. The noise analysis was prepared by an expert and the detailed analysis supports the Draft EIR's conclusions of a less than significant noise impact.

C1-4 Comment. Yet despite plenty of medical evidence that moderate and low level noise intrusion causes cumulative impacts on mental and physical health, I see no analysis of an important contribution to stress from the construction projects and from the ongoing increased traffic that thirty or more softball games will bring: no one seems to acknowledge the ubiquitous noise pollution of hundreds if not thousands of backup beepers.

Response. Back-up alarms are included in the maximum noise levels reported for each piece of heavy construction equipment (FTA 2018). Thus, the construction noise modeling accounts for the use of back-up alarms. In addition, the number of heavy construction equipment anticipated to be operating simultaneously for Project construction would be no greater than 10, certainly never approaching the "hundreds if not thousands" referenced as a concern by the commenter. There are no back up alarms anticipated in connection with the project's regular operations. Passenger vehicles do not have backup alarms, and even if they did, spectators would park at nearby garages where the sound could not be heard by any residential receptors. See Draft EIR Section 4.5.1.3 for a discussion on the potential negative effects of noise on humans. There is no evidence that a short-term exposure to construction noise levels less than 85 dBA L_{eq} (the noise exposure level at which OSHA requires hearing protection) would result in a significant health impact. Construction noise modeling concluded that the closest residences could be exposed to construction noise levels no greater than 79 dBA L_{eq} (Draft EIR Section 4.5.3.3), and thus below a level considered potentially harmful by OSHA.

C1-5 Comment. The impact on access to emergency vehicles through the Rimway / Gayley Road / Prospect corridors is similarly given short shrift, and it's important to realize that thousands more vehicle trips will be expected for each of 30-50 games each year, no doubt not coordinated with Greek Theater events that already create nightmarish traffic scenarios in the same zone.

Response. The comment expresses concern regarding emergency vehicle traffic and issues with potentially increased traffic with Greek Theater events occurring at the same time as UC Berkeley softball games. The commenter claims that "thousands more vehicle trips will be expected for each of 30-50 games each year," which is inaccurate. There may be up to 25 games a year (up to 21 regular season games and 4 post season games), which is only one more than what the Draft EIR notes could occur under existing conditions (approximately 20 regular season games and unquantified post-season play), as

described in Response to Comment B5-19. Draft EIR Section 4.6, Transportation, provides the trip generation for the proposed project for typical and maximum game events, which indicates that the typical events would result in a net increase of 316 daily vehicle trips and the maximum events would result in a net increase of 108 daily vehicles trips (see Draft EIR Tables 3.6-3 and 3.6-4). Additionally, the proposed project would not result in 30-50 competitive games, but rather up to 25 such games.

Greek Theater events occur during the spring, summer, and fall periods, and typically have the potential to overlap with the Cal Softball season in April and May. For 2024, there is one instance (April 21) of a UC Berkeley softball game occurring at 12:00 p.m.; however, the Greek Theater concert is scheduled to open its doors at 5:30 p.m. Therefore, there would be extremely limited, if any, overlapping traffic congestion between the two events. As discussed in the Draft EIR, the final design of 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. 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 further described in Draft EIR Section 4.7, Wildfire, the project would include the implementation of CBP PS-2, which would include consultation with Lawrence Berkeley National Laboratory, Alameda County Fire Department, Oakland Fire Department, and Berkeley Fire Department on the adequacy of service levels and emergency access routes. Due to the expected number of vehicles generated, the ability and direction through signage to park in multiple locations not located on the project site, and the implementation of on-site emergency access improvements, emergency vehicle access would be expected to be minimally impacted by the proposed project. Further, as UC Berkeley continues to implement the recommendations in the Parking and Transportation Demand Management Master Plan (UC Berkeley 2011), directional signage and parking availability signage at each parking structure will direct attendees/users in case of an emergency. All of the parking structures are located in highly defensible areas and emergency services/law enforcement have the ability to control the outflow of these areas to prioritize the at-risk populations. The evacuation analysis included in Draft EIR Appendix H provided for a worst-case scenario assuming all attendees/staffs/coaches would evacuate at the same time, whereas under actual project operation conditions that may not be the case.

Further, Draft EIR Section 4.7, Wildfire, provides an evaluation of potential project impacts related to wildfire and specifically refers to the wildfire protection plan prepared for the proposed project (see Draft EIR Appendix C), as well as the fire evacuation analysis prepared for the proposed project (see Draft EIR Appendix H). The fire evacuation analysis was performed to determine how long it would take for users and spectators of the Cal Softball Field, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. The Rimway/Gayley Road/Prospect corridors noted by the commenter were considered in this analysis. All proposed project impacts related to wildfire-related evacuation were determined to be less than significant.

- C1-6** Comment. As anyone who lived through the yearslong Memorial Stadium debacle will remember, every piece of construction equipment, all the concrete trucks, every tradesperson's truck, brought a dozen or more piercing alerts that wafted up the hill into our consciousness. No these were not high-decibel events that Dudek measures so carefully, but OSHA no doubt requires these noisemakers to alert nearby people, to put them on notice of potential danger! And they work, insidiously and suddenly, even as the workers themselves have learned to ignore them. Your construction projects and facilities improvements come with a cortisol delivery instrument that penetrates each neighbor's home, and not just during daylight hours: despite UC's assurances, we had plenty of 4AM deliveries throughout the stadium retrofit.

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Response. The Project Description incorporates Construction Best Practice Noise CBP NOI-2 that requires construction to comply with night-time noise restrictions for Berkeley and Oakland. With respect to noise from construction equipment back-up alarms, back-up alarms are included in the maximum noise levels reported for each piece of heavy construction equipment (FTA 2018). Thus, the construction noise modeling accounts for the use of back-up alarms. In addition, the number of heavy construction equipment anticipated to be operating simultaneously for Project construction would be no greater than 10; as such, the intensity and duration of project construction would be less than that of the California Memorial Stadium renovation.

C1-7 Comment. For every football game we have another dose of TV trucks, delivery trucks, catering trucks, emergency vehicles—but “only” pre-game and game-day and post-game for a handful of games each season. But now in the even more constricted echo-chamber of lower Strawberry Canyon we are expecting to have thirty or more of these games each season, plus tournaments, plus night games with 1500-2000 spectators! Yet your “analysis” makes no mention of these cumulative impacts. From what I can discern from your flurry of charts and graphs, “ambient” analysis smoothes out the peaks and downplays the impacts of short intervals of not-especially-loud but nevertheless designed-to-catch-our-attention sounds that degrade and pollute the sonic environment for everyone within earshot.

Response. See Responses to Comments B5-37 through B5-54 for detailed responses to comments on the Draft EIR noise analysis contained in Draft EIR Section 4.5, Noise. These responses are also provided in Final EIR Appendix B, Response to Letter B5, Exhibit A (Noise). As described in Response to Comment B5-46, the period of the day in which competitive softball games would be hosted varies, and therefore comparison of average noise levels from a multi-hour competitive softball game against an ambient average of hourly noise levels across the daytime period (7 a.m. to 10 p.m.) is reasonable. See also Response to Comment C1-5 for information about the number of competitive games that would be played and the associated net increase in vehicle trips that would result with the proposed project.

The commenter claims that the analysis makes no mention of cumulative impacts. This is inaccurate. Draft EIR Section 4.5, Noise, does evaluate cumulative noise impacts in Impact NOI-3. 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. California Memorial Stadium lighting was not included in the cumulative noise assessment, as events scheduled at California Memorial Stadium do not overlap with games scheduled at the Cal Softball Field. 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, as shown in Draft EIR Tables 4.5-21 and 4.5-22 and the impact would be less than significant. Additionally, other technical sections included in Draft EIR Section 4, Environmental Setting, Impacts, and Mitigation Measures also evaluate cumulative impacts of the proposed project.

C1-8 Comment. As I've said in previous comments on DEIRs, I have a modest proposal to at least share the pain: if indeed these endless and ubiquitous beepers are inconsequential and not even worth mentioning, why not have a few hundred UC and Dudek employees accept a 24-hour speaker in their homes and offices, with a microphone mounted on the back deck of an upper Mosswood home? With each truck you will hear what we hear, an alert that stimulates our reptile brains to pay attention to a potential danger, a microdose of cortisol that corrodes our daily lives. If this is harmful or hateful to you, consider that this is what you are proposing for us. If it is truly inconsequential, you shouldn't mind—it's what you are offloading onto neighbors.

Response. See Response to Comment C1-6 for discussion of the impact analysis as it relates to back-up alarms.

C1-9 Comment. I should note that construction noise is only a small part of the problem: as I've noticed this year, for several hours each afternoon throughout the offseason, athletes using the batting cage can't seem to practice [practice] without amplified music thundering up through the natural amphitheater. This is in keeping with the practice of playing music throughout pregame and during the game and between innings, since these athletes can't possibly perform without having their personalized "walkup music" blaring for each at-bat, just like the big boys!

Response. The batting cages are currently behind the spectator stands, closer to the adjacent residences, and have an open chain-link fence enclosure. During batting practice, when music is played, it is presumably projected via public address (PA) speakers oriented toward the "home" spectator stands, in the direction of adjacent residences. With the proposed project, the batting cages would be inside the back building wall, with the building wall shielding batting cage noise from the adjacent neighbors. Also, the PA system speakers for the project would be oriented away from the adjacent neighbors, reducing noise contributions from the PA system use at these residences.

C1-10 Comment. Let each person supporting this project carry this noise into your homes and bedrooms each night until 11 PM on all of the 20 or 30 or 50 game days each year that follow. If you agree to that, all you athletes and parents, chancellors and planners, coaches and cheerleaders for women's athletics and champions of gender equity, I guarantee that you will better understand why we, your closest neighbors, do not embrace your vision for our future. Thank you for reading. Let me know when we can set up that microphone.

Response. The commenter opines that project proponents should experience noise associated with the project. This comment does not specifically relate to the impact conclusions or analysis of the Draft EIR. See Responses to Comments C1-2 through C1-9 for other responses to issues raised by the commenter.

Letter C2 Michele Liapes

C2-1 Comment. As a UC Berkeley alumna, I am writing to express my strong opposition to Campus plans to updated the rugby and softball facilities in Strawberry Canyon with expanded new lighting. First of all, I suggest that there is not enough interest in either rugby or softball to justify the new lighting for TV purposes, especially in the wake of the breakdown of the Pacific 10 conference.

Response. The comment expresses an opinion related to the interest of intercollegiate athletics. This comment generally opposes the project but does relate to the impact conclusions or analysis of the Draft EIR. UC Berkeley is committed to compliance with Title IX, which requires provision of equitable athletics facilities for male and female student athletes, regardless of the commenter's interest in the sport.

C2-2 Comment. Second, and most important, such artificial lighting has the almost certain potential to adversely affect nocturnal wildlife elsewhere in the canyon, particularly nesting owls.

Response. The Draft EIR Section 4.3, Biological Resources, addresses the potential impact to species as a result of the proposed project, including replacement of the existing lighting system. Crepuscular and nocturnal wildlife, such as the common great horned owl (*Bubo virginianus*), western screech-owl (*Megascops kennicottii*), and others, may nest or hunt in the undeveloped woodlands and scrub south

and north of the project site. However, as described in Draft EIR Section 4.3, Biological Resources, although lighting glare may increase from baseline (see Draft Section 4.2, Aesthetics, which conservatively assumes no reduction in glare based on trees/vegetation), the increase 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, while the light spectrum of proposed lights would be higher (5,700 K [see 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 [regular and post-season games] as compared to the approximately 15 to 20 regular season games per year under existing conditions [plus the unquantified post-season play, as described in Response to Comment B5-19]), 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 California Memorial Stadium and Witter 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, as described in Draft EIR Section 4.3, Biological Resources.

- C2-3** Comment. Please do not give this Commission's approval to new and unnecessary development that would so negatively affect a thriving and productive wildlife community nearby. We need these, and, once we've destroyed them, they're gone forever.

Thank you in advance for your consideration.

Response. The comment provides a closing remark. See Response to Comment C2-2 which addresses the commenter's concerns related to wildlife.

Letter C3 Stefanie Pruegel

- C3-1** Comment. I am extremely concerned about the massive new lighting arrays to enable TV broadcast of 21-25 night games per year that the UC is planning to install at Strawberry Canyon. This will result in light and noise pollution well beyond the actual stadium area, disrupting and further marginalizing nocturnal wildlife in the Canyon. This goes well beyond the wood rat being negatively impacted and includes owls, bats and countless other wildlife, even insects. I find the attention to these matters in the DEIR highly inadequate.

Response. See Response to Comment C2-2 for discussion of the project's impacts with respect to lighting on wildlife, including owls. Regarding bats and lighting, research has found that bat responses to night lighting is species specific, such that fast-flying and more maneuverable species prefer to forage near lights while slower-flying and less maneuverable species will avoid lights and/or utilize airspaces above lit areas (Rydell 2006, Stone et al. 2015, Longcore 2023). The project site is within the range of 15 bat species known to occur in California, including species within the 9 genera *Antrozous*, *Corynorhinus*, *Eptesicus*, *Eumops*, *Lasiurus*, *Lasionycteris*, *Myotis*, *Nyctinomops*, and *Tadarida*. Most of these genera (6 of the 9) have been recorded foraging at streetlights (Stone et al. 2015), suggesting they are not averse to lighting at night. Other research has found that replacement of mercury vapor lights with LED reduces

activity of some species of bats while increasing the activity of light adverse species, including those in the genera *Myotis* (Lewanzik and Voight 2017). In addition, insect prey responses to night lighting varies, with larger moths being more attracted to lights than smaller moths (van Langevelde et al. 2011).

However, most research on bats' interactions with night lighting is related to lighting which remains on throughout the night (e.g., streetlights). In these situations, bat responses to lighting would be chronic and consistent throughout the night, permanently altering the environment, bat behavior, and bat use of the landscape. Bat research provides suggestions to minimize the effects of night lighting on bats, such as avoidance, dimming or turning off lights for part of the night (as with the proposed project), reducing light intensity, and changing light type to avoid short wavelength "blue" lights such as metal halide or mercury lights sources (as with the proposed project) (Stone et al. 2015).

As described in Draft EIR Section 4.3, Biological Resources, wildlife occurring in the wildland-urban interface in the project site vicinity are habituated to the lighting until 10 p.m. that are the baseline conditions from the existing field lighting on the project site and adjacent Witter Rugby Field and California Memorial Stadium. The project conservatively assumes 25 games per year could result in lighting until 10:00pm. Field lighting will be turned off after 10:00 p.m. which would provide opportunities for any light-averse bat species with ample opportunities to utilize the airspace in the area. 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. Overall, the proposed project would have a less than significant impact on bats, as concluded in Impact BIO-1.

Regarding noise and wildlife, Draft EIR Section 4.3, Biological Resources provides mitigation measures for construction-related noise and acknowledges that operational noise would not increase during a typical weekday but would increase somewhat during typical and maximum game events until 10:00 p.m. from game spectators, vehicle parking, and human presence. Similar to lighting, noise would not be chronically present throughout the site but rather increase during game events, with a modeled relative change of up to 2.8 dBA L_{eq} for a typical event and up to 4.1 dBA L_{eq} for a "maximum event" (see Draft EIR Section 4.5, Noise, Tables 4.5-16 and 4.5-17). For comparison, that relative increase would be below the sound levels of human breathing (10 dBA L_{eq}) and well below the level of human whispering (20 dBA L_{eq} ; Greenfield 2022).

Generally, terrestrial wildlife responses to noise levels begin at approximately 40 dBA, however, responses vary by sources of noise and types of behavioral responses measured (Shannon et al. 2016). For example, birds have been shown to begin shifting the timing of their vocalizations in response to environmental noise sources at an average 63 dBA. However, if the noise source is related to transportation the vocalization shift may begin around 80 dBA (Shannon et al. 2016).

Although wildlife experience noise differently than humans, the increase in noise levels associated with the proposed project would not be continuous or chronic. 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 Draft EIR Section 4.5, Noise. The additional 2.8 dBA L_{eq} or maximum 4.1 dBA L_{eq} is not anticipated to cause a significant change in behavior responses from wildlife utilizing the area and although the proposed project may have some temporary noise effect on wildlife behavior it would not be expected to reach a level of negative impact on their populations.

3. COMMENTS AND RESPONSES

- C3-2** Comment. The plan also completely neglects to address the risk of wildlife which is greatly increased by the anticipated traffic and activities. The project is located in a Very High Fire Hazard Severity Zone – a fact conveniently disregarded the DEIR.

I strongly oppose the project and urge the responsible parties to reconsider.

Response. As described in Draft EIR Section 4.6, Transportation, 1 new vehicle (consisting of 2 new vehicle trips) would be generated during the typical weekday use of the proposed project. Approximately 158 new vehicles (consisting of 316 new vehicle trips) and 54 new vehicles (consisting of 108 new vehicle trips) would be generated for typical and maximum match events, respectively, of the proposed project.

Measures that have proven effective in reducing collisions include 1) building fences and over/under-passes along highways, and 2) reducing speed limits (Shilling 2023). The 8 existing access roads within the project vicinity all have posted speed limits of 25 miles per hour. The streets are generally two-lane undivided roadways that meander through the campus and residential areas. Stop signs and pedestrian crosswalks are common characteristics of these roadways. Although there will be an estimated 316 new vehicle trips (during typical events) and 108 new vehicle trips (during maximum events) held on 25 days per year, those trips will only occur during scheduled game events and vehicles traveling into the area will be driving at reduced speeds and in areas frequented by pedestrians. As such, if any pedestrians or wildlife cross the road, drivers will be traveling at relatively slow speeds and will be able to exhibit a quicker reaction and breaking distance than drivers traveling highway speeds. If traveling 20 miles per hour, the total stopping distance is estimated to be 63 feet (NHTSA 2015). These slower traveling speeds will minimize the chances of a vehicle-wildlife collision. In addition, according to the Real-time Deer Incidents and Wildlife-Vehicle Conflict (WVC) Hotspots Map (REC 2023), the nearest roadway hotspot with greater than 0 incidences per mile per year is Ashby Avenue/Highway 13, a four-lane undivided highway located approximately 0.93 mile south of the site; and UC Berkeley Campus is not a current hotspot for wildlife collisions (CROS 2023). Overall, the proposed project would have a less than significant vehicle-related impact on wildlife, as reported on in Draft EIR Section 4.3, Biological Resources.

The comment claims the Draft EIR does not acknowledge that the project site is located within a Very High Fire Hazard Severity Zone (FHSZ). However, it is shown on Figure 4.7-2 and stated throughout Draft EIR Section 4.7, Wildfire that the project site is within a Very High FHSZ. Draft EIR Section 4.7, Wildfire, provides an evaluation of potential project impacts related to wildfire and specifically refers to the wildfire protection plan prepared for the proposed project (see Draft EIR Appendix C), as well as the fire evacuation analysis prepared for the proposed project (see Draft EIR Appendix H). The fire evacuation analysis was performed to determine how long it would take for users and spectators of the Cal Softball Field, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. All proposed project impacts related to wildfire-related evacuation were determined to be less than significant.

Letter C4 James Isbeter

- C4-1** Comment. I am a neighbor of the University of California, Berkeley campus and have been since the early 1980s. I have seen the University impose many “renovations” on the community and the landscape since then. From the vantage point, the Draft EIR’s treatment of cumulative effects would be comical were it not so disrespectful and, quite simply, wrong.

Response. The comment states the commenter's experience as a neighbor to UC Berkeley. The commenter opines that the Draft EIR does not provide sufficient analysis of cumulative impacts; however, no specific comments are provided about the cumulative impact analysis provided in the Draft EIR. Draft EIR Section 4.1, Introduction to Analysis, discusses the scope considered for the analysis of cumulative impacts. Each topical section contained in Draft EIR Chapter 4, Environmental Setting, Impacts, and Mitigation Measures includes an evaluation of cumulative impacts, as the last impact presented in each section. See Responses to Comments C4-2 through C4-5 for other responses to issues raised by the commenter.

C4-2 Comment. Specifically: Impact Bio-5. Prior to the Clark Kerr campus and the development of the existing softball and rugby fields, the area between Centennial Drive and Claremont Avenue contain few impediments to the movement of wildlife and little light pollution. Through extensive fencing on the enlarged Strawberry Creek facilities, the Clark Kerr campus, facilities associated with the Clark Kerr campus, and portions of the Botanical Garden, wildlife corridors of movement have been restricted and, essentially pushed up further into the hills. The extensive lighting that has already been added to the rugby and softball fields as well as the Botanical Garden substantially changes the night time nature of the region, with consequences for nocturnal and diurnal [diurnal] wildlife alike.

Response. The comment explains that prior development on the project site and surrounding area has restricted wildlife corridors of movement and resulted in "consequences" to wildlife with respect to lighting. See Responses to Comments C2-2 and C3-1 for a discussion of the project's potential impacts to wildlife related to lighting. As described in Draft EIR Section 4.3, Biological Resources, and highlighted by commenter, 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 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, as described in Impact BIO-4.

As explained in Draft EIR Section 4.3, Biological Resources, once construction is complete, the use of the project site 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. Therefore, the 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 as described in Impact BIO-4. For these reasons, there are also no cumulative impacts with respect to these issues identified in Impact BIO-5.

C4-3 Comment. Now, the University proposes even more traffic and human activity along Centennial Drive. Events likely to be disruptive to wildlife have grown from the episodic football game traffic to something that occurs more often than not. The purpose of the expansion the University now proposes is to support a range of activities that will essentially be consistent, and without season.

Response. The comment claims that the project will result in additional traffic and human activity that could disrupt wildlife. See Response to Comment C4-2; the proposed project operations would not interfere substantially with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, as described in Draft EIR Section 4.3, Biological Resources. The commenter

further asserts that the “range of activities” associated with the proposed project will be “consistent and without season.” As indicated in the impact discussions throughout the Draft EIR, typical weekday operations are not expected to change as a result of the proposed project (see, e.g., Draft EIR Section 4.5, Noise, Impact NOI-1). Changes in operational impacts will only occur on days with maximum or typical events, which will occur on up to 25 days per year (see, e.g., Draft EIR Section 4.5, Noise, Impact NOI-1).

C4-4 Comment. Furthermore, the expansion of lighting will turn night into day even more effectively and for many more days a year. It may not seem like a substantial change over what exists now, but it is a significant change over what existed over 20 years ago.

Response. The comment claims that the project will contribute to an overall change in the lighting setting of the project area as compared to what existed 20 years ago. The commenter correctly notes that the proposed project would not be a substantial change as compared to the existing baseline. See Responses to Comments B5-2 and B5-3 that describe the existing approved uses of the existing softball field. CEQA does not require a project to compare potential impacts to conditions that existed 20 years ago. CEQA Guidelines Section 15125 requires that the environmental effects of a proposed project be evaluated against the physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation is published. This environmental setting will normally constitute the baseline physical conditions by which a lead agency, in this case the University, determines whether an impact is significant. The Notice of Preparation for the proposed project was published in November 2022 and therefore existing environmental conditions from approximately this time are presented in the Draft EIR.

C4-5 Comment. Impact Noi-3. Cumulative noise impacts. This conclusion is simply farcical. Anyone familiar with this area of Berkeley in the 1990s would agree that there has been a tremendous increase in the amount of disruptive noise generated in an ongoing matter by the expansion of the University’s facilities. The study’s conclusion that the cumulative impact is not significant can only be some kind of arithmetical game. For example, if the current noise level is disruptive 100 days of the year and it is only going to be increased to 110 days, perhaps the proposed expansion is not, by itself, significant. But if the question is what is the cumulative effect, then we must compare it to the status quo ante, in which the noise level was disruptive on only 30 days of the year (i.e., football games and the occasion concert in the stadium). Seen against that sort of template, suggesting that the University’s expansion is not part of a cumulative impact on the noise is ridiculous.

Response. Impact analysis under CEQA uses existing conditions as the baseline, rather than conditions that may have existed in the environment historically. CEQA Guidelines Section 15065 provides that “cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” Case law has clarified that when the effects of past projects are reflected in the baseline and are therefore necessarily included in the cumulative impact analysis as a result, a separate analysis of the effects of past projects is not required. (*City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009) 176 Cal.App.4th 889. With baseline conditions that consider the current existence of the women’s softball field, the incremental increase in noise associated with the proposed project taken in combination with other projects that have the potential to increase noise levels at residences in the vicinity of the project, the cumulative noise impact was determined to be less than significant (see Draft EIR, Section 4.5, Noise, Impact NOI-3).

C4-6 Comment. There are many other ways in which the Draft EIR simply ignores the reality of what has happened in this area over the past 4 decades. But I will leave it to others to address those.

Response. See Response to Comment C4-5. This comment otherwise serves as a closing remark and does not require further response.

Letter C5 Janice Thomas

C5-1a Comment. This is to request assistance accessing documents which have been incorporated by reference in the Draft EIR on the softball field renovation project. The documents which I need to review include the following:

- A3 GEO. 2018. Geotechnical Investigation Report. Levine-Fricke Softball Investigation Report. University of California, Berkeley. Draft. August 13, 2018.
- EBMUD. Letter from David J.h Rehnstrom, EBMUD to Shraddha Navaili Patil, UC Berkeley, regarding the "notice of availability - addendum to the 2020 Long Range
- Development Plan EIR for the Levine-Fricke Softball Field Improvements Project." January 13, 2020.
- UC Berkeley. 2014. "Emergency Operations Plan (EOP)."

Response. Upon release of the Final EIR, the requested documents were provided to the commenter via email by UC Berkeley staff. It should be noted that the prior 2020 Addendum for the proposed project cited the 2014 Emergency Operations Plan. The Draft EIR for the proposed project cites the 2022 adopted Emergency Operations Plan, and both were provided to the commenter.

C5-1b Comment. I am concerned about the adequacy of this study. Although the document is long, it lacks the substance one would need to evaluate the project in its environmental context.

Response. The comment serves as an opening remark. It generally raises concerns over the Draft EIR. The comment does not specifically address impact conclusions or analyses contained in the Draft EIR.

C5-2 Comment. At the start, the Project Location does not adequately convey information which decision-makers would need to decide if this is a good investment in the fiscal sense or otherwise. Key information which should probably be included on any ticket that a potential spectator buys, or presented to any investor or donor, and especially at the start of a 364-page tome, should relay the hazards of this precarious site. For starters, it is located in the least accessible part of Berkeley.¹ It is just east of the Hayward Fault, in a landslide area, and the new structures will be built in a liquefaction zone.

Footnote:

¹ <https://www.google.com/maps/@37.8688568,-122.2883345,14z?authuser=0&entry=ttnu>

Response. The proposed project location is an existing softball field and this project will renovate and upgrade the existing field. The comment opines that future spectators at the project site, as well as project proponents, should be informed of potential hazards related to the project site. The comment raises concerns related the site's location near the Hayward Fault and indicates that the site is located in a landslide area in a liquefaction zone. These issues are addressed in Draft EIR Chapter 5, Other CEQA Considerations; as detailed in this section, as well as in the Notice of Preparation and Initial Study (Appendix A-1), impacts related to fault rupture, landslides and liquefaction were determined to be less than significant. Specifically, 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 proposed 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 and therefore impacts related to fault rupture due to proximity to the Hayward Fault were determined to be less than significant. Further, the project site is not located in a landslide hazard zone and while there is an earthquake-induced landslide zone beyond the project's southern boundary, it is downhill from the project site. As such, impacts related to landslides were determined to be less than significant because the overall likelihood of landsliding to occur below the project site affecting planned structures is very low to negligible. Lastly, while the project site overlaps with a liquefaction hazard zone along the western portion of the project site, the geotechnical investigation found that 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 were also determined to be less than significant.

C5-3 Comment. The project location is also distinctive in other ways for what is not mentioned or left ambiguous. On the south-facing side of the canyon hillside is Lawrence Berkeley National Laboratory. On the north-facing side of the canyon hillside is Panoramic Hill. As described, the proximity is vague. In fact, the closest house is 90 feet from the closest point of the football field².

Although the land use zone is classified as Hill Campus West, the context is not the Greek Theater or Bowles Hall. The context is the canyon and the hillside residential neighborhood. None of the other buildings in the HCW are in the canyon.

Footnote:

² Levine-Fricke Softball Field Improvements Project, July 2020, Addendum, page 21.

Response. The Draft EIR includes description of the project location in multiple locations throughout the document. A general project location is provided in Chapter 3, Project Description and specifically provides that 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. Environmental setting descriptions are provided in each of the technical topics included in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures. The Draft EIR does not indicate that the project context is the Greek Theater or Bowles Hall, as the commenter claims. The hillside residential neighborhood and specifically the Panoramic Hill Neighborhood is referenced throughout the document and evaluated in detail where warranted. For example, Draft EIR Section 4.4. Cultural Resources evaluates the potential direct and indirect impacts of the proposed project on the Panoramic Hill Historic District. See also Response to Comment B4-3 for a description of the scope of analysis contained in the Draft EIR, as it relates to Strawberry Canyon. The project location descriptions vary by necessity, as it relates to supporting the evaluation of the specific technical topic. Commenter correctly asserts that the nearest residence to the project site is approximately 90 feet from the boundary of the softball field – a fact which is also disclosed in the Draft EIR (see, e.g., Draft EIR Section 4.5, under “Noise Sensitive Land Uses”).

C5-4 Comment. The area is state-designated as a Very High Fire Hazard Severity Zone (VHFHSZ). The fact that the proposed project is located in a VHFHSZ was mentioned one time in the DEIR.

Response. The comment claims the Draft EIR mentions that the project is within a VHFHSZ once. The entirety of Draft EIR Section 4.7, Wildfire, analyzes the impacts of the project's location within a Very High FHSZ and Draft EIR Figure 4.7-2 illustrates the project site as being within a Very High FHSZ. As indicated in Section 4.7, the proposed project includes a wildfire protection plan (see Draft EIR Appendix C) that evaluates and plans for the proposed project within the context of the VHFHSZ. Additionally, a fire evacuation analysis was also prepared for the proposed project (see Draft EIR Appendix H). The fire evacuation analysis was performed to determine how long it would take for users and spectators of the Cal Softball Field, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. All wildfire-related impacts were determined to be less than significant.

C5-5 Comment. The proposed project is surrounded on the south, the north, and to the east by the Hill Campus East and the Ecological Study Area. The juxtaposition of the proposed facility and the natural environs illustrates an insensitive relationship. Uses have heretofore been relatively low impact in comparison to the proposed. The hillside neighborhood within 90 feet of the existing field is listed on the National Register of Historic Places in celebration and appreciation for an architectural style which celebrated natural materials and the natural environment.

Response. The proposed project would be located on the existing Cal Softball Field site in an area that has already been developed with existing physical education and recreation uses, including Strawberry Recreation and Pool, Cal Softball Field, Witter Field, and California Memorial Stadium. See Response to Comment B3-2, which describes analysis and impact conclusions contained in the Draft EIR related to Panoramic Hill Historic District. See Responses to Comments C5-17, C5-18, and C5-19 related to the biological study area considered in the Draft EIR and discussion of the "Ecological Study Area" referenced by the commenter.

C5-6 Comment. Throughout the document key information is minimized. One of these is that the proposed project introduces night games into Strawberry Canyon and as many as 21-25 night games. There are no night games at Witter Rugby Field and there are no largescale, noisy, disruptive, routine, nighttime activities at the Strawberry Canyon Recreation Area. This is a new and disturbing use.

The scope of this project includes changes in use, specifically, the schedule of night games where the baseline, as reported, was one night game in the intercollegiate softball field's history. The 10:00 p.m. schedule of field closure is dependent upon on games being over, tie games being resolved, and all of the various business and cleanup operations being ended too. This seems unlikely.

As stated, the proposed new buildings and structures support a regular and routine program of night games where none exists currently. The DEIR mentions one night game in the softball field's history.

It is one thing for there to be multiple intercollegiate facilities near this hillside neighborhood. But night games at the stadium introduced problems we had never before experienced, and likewise, night games at the softball field will create yet a new set of problems.

Response. See Response to Comment B5-2. Night games are games that are played until 10 p.m. The existing softball field is routinely used until 10 p.m. using the existing lighting. The Draft EIR analyzes the impact of the new lighting in Section 4.2, Aesthetics and Appendix D. The Draft EIR Section 4.5, Noise, also analysis impacts of the increased spectators at games under typical and maximum scenarios. The lights will go off at 10 p.m., the commenter's speculation that they will stay on later is not supported by substantial evidence.

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C5-7 Comment. The DEIR states that the city's Community Noise ordinance will be followed, that the city's General Plan Transportation Element will be followed, but the environmental review document suggests otherwise.

Response. This comment asserts that the Draft EIR suggests that the City's Community Noise ordinance and General Plan Transportation Element will not be followed. See Responses to Comments B5-43 and B5-44, which indicate that the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code have been applied to assess operational noise from project stationary equipment at the closest residences within Berkeley and Oakland, respectively. See Responses to Comments B5-42 through B5-45, which explain the use of the FICON significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use). See also Response to Comment B1-4 for a discussion of the proposed project compliance with the City's General Plan Transportation Element, which is also discussed in Draft EIR Section 4.6, Transportation.

C5-8 Comment. Post-season games, and hence the number of additional night games at the new facility, are dependent upon the team's rank at the end of the season. Given the softball team's track record, it highly likely the maximum number of games will be played at Cal. "The Bears are consistently ranked in the top 25, have reached the postseason for 27 straight years, have reached the Women's College World Series 14 times (11 NCAA, 3 AIAW),[2] and have won 1 Women's College World Series Championship in 2002.³"

Footnote:

³ https://en.wikipedia.org/wiki/California_Golden_Bears_softball accessed 1/28/24

Response. The comment is acknowledged. The analysis and impact conclusions of the Draft EIR conservatively rely on the maximum number of games being reached and played at UC Berkeley.

C5-9 Comment. It bears mentioning that the proposed project is more than a field renovation. Moreover, the project was filed at the Governor's Office of Planning and Research as "redevelopment."

Response. While the project was filed with the Governor's Office of Planning and Research as redevelopment, this does not impact the analysis or conclusions of the Draft EIR. The proposed project meets the University's definition for major renovation; see Response to Comment B3-5. The OPR form does not contain an option to file the project as a renovation and, as such, redevelopment was chosen.

C5-10 Comment. The site for the proposed project is extremely complex. Through methodological wizardry, only one category of impacts – Transportation/Vehicle Miles Traveled – is considered significant and unavoidable. A more robust analysis might show multiple impacts which as a whole are greater than the sum of their parts.

Response. The comment incorrectly asserts that only impacts related to Transportation/VMT are considered significant. As identified in Draft EIR Section 4.5 Noise, construction noise impacts are also significant and unavoidable. The comment does not specifically address the analysis and impact conclusions of the Draft EIR.

C5-11 Comment. In general, the methodology bears scrutiny. One curiosity is the use of past seating capacity of 1,340 – inflated with temporary seating – as the baseline for analysis when the spectator attendance average was 500 people.⁴

And there are ambiguities, such as this: “The use of the softball facility would remain largely similar to current uses...(emphasis added).⁵”

Footnotes:

⁴ DEIR Cal Softball Field Renovation Project, page 4.6-21

⁵ Notice of Availability of DEIR Cal Softball Field Renovation Project 12/13/23

Response. As described in Response to Comment B5-6, the portable bleachers are installed every year in January and removed in May, after the Spring Season ends. Therefore, with respect to the competitive softball season, portable seating is not temporary as it exists throughout the season. However, to ensure that the analysis accurately captures the potential for environmental impacts, both a typical event scenario (based on existing average attendance of 500 spectators, referenced by commenter) and a maximum event scenario (based on existing maximum attendance of 1,340 spectators using seating capacity) are evaluated. There are also no ambiguities, because other than the potential for more spectators, the use of the softball facility would remain largely similar to current uses.

C5-12 Comment. AESTHETIC IMPACTS –

Skyglow unanalyzed.

The DEIR did not evaluate the effect of skyglow. By not evaluating skyglow, the DEIR eliminated this data as a condition which would have at least two effects. One is the effect on scenic vistas and two is the indirect effect on cultural resources.

The competition-grade lights are 70 footcandles in the outfield and 100 footcandles for the infield (horizontal illuminance). By way of comparison, Game Day lighting at Memorial Stadium – at “horizontal illuminance” – is 125 footcandles. During security and maintenance, lighting is 20 footcandles.⁶

Please see the attached photograph for an illustration of Skyglow from stadium lights at 6:38 a.m. on 1/25/24. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter C5 attached photograph.]

The photograph was taken from the sidewalk at the top of Bancroft Steps, facing north toward Memorial Stadium’s southern façade with the bright hillside known as Tightwad Hill in the background. The silhouette of the hillside known as Panoramic Hill appears to be touching the stadium and is in complete darkness as would be expected at this hour on a winter morning.

Skyglow is not masked by foliage in trees. It illuminates an entire area and creates the illusion of daylight. Lighting which is used at night but that approximates daytime is not restful or semirural or compatible with the woodland setting that is most dense at the south of the site, evident in riparian areas especially to the north of the site, and to the dense woodlands in the Ecological Study Area.

Footnote:

⁶ Draft Environmental Impact Report Southeast Campus Integrated Projects (2006) p. 3-27.

Response. See Response to Comment B5-60 above, which provides an analysis for skyglow and demonstrates that the proposed project’s impact is below the threshold of significance and reduced compared to existing conditions. As evidenced by this comment, there are other sources of existing light,

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including light from the existing softball field in the Panoramic Hill area. Complete darkness is not the existing baseline condition in project vicinity.

C5-13 Comment. Effect of night games.

The effect is worsened by the frequency of having 21-25 night games through the length of a semester and concentrated at the end with tournaments and post-season games. These events occur on week nights and not only weekends. The effect of 21-25 night games compared to zero night games has not been analyzed.

Response. See Response to Comments B5-2, B5-6, and B5-19. The correct baseline for the analysis is the existing use of the field for competitive softball games. Draft EIR Chapter 3, Project Description, acknowledges that some weekday games may be played. Table 3-2 indicates that Spring home competitions would be held Tuesday and Thursday through Sunday with post-season play occurring Friday through Sunday.

C5-14 Comment. There might also be aesthetic impacts from the recessed lights which will be added in areas of public circulation. It is unclear how many lights will be added, and thus, the potential impact is not adequately analyzed. If there are lights, they would preferably be angled downward, as they are reported to be. But the question of relevance involves a comparison between the existing number of lights compared to the proposed number of lights. Will the lights look like an airport landing strip?

Response. In addition to pole lighting that would be hooded and directed/angle downward, bollard, strip, track, wall, pendant, and surface mounted lights are proposed to be installed at the site. Most lighting fixtures would incorporate controls (e.g., daylight controlled with automatic time clock and photocell, dimming control, occupancy sensor, automatic time clock) to manage operations and minimize occurrences of unnecessary activation and illumination. Compared to existing conditions, implementation and operation of the project would result in an increase of lighting fixtures on the softball field complex; however, the number of proposed lights and illumination levels would be provided consistent with California Building Code and Campus Design Standards to provide sufficient illumination and visibility for spectators/users while also reducing light pollution. There is shielding on all the lighting, with lighting directed down towards the field. The Draft EIR and lighting study analyzed a comparison of the existing number of sports lights as compared to the proposed number of sports lights and found there would be a less than significant impact on vertical light spill and glare. In addition, skyglow impacts would be reduced as a result of the proposed project (see Response to Comment B5-60). The lights will not look like an airport landing strip.

C5-15 Comment. Impact on hillside residents.

In the existing conditions, there are four light towers, 50-feet tall, and support 1,000 watt light fixtures. The lights measure around 20-30 footcandles. The portable lighting structures are 53-feet tall and support 1,500 watt light fixtures. In contrast, in the proposed conditions there would be six poles with light mountings reaching 70 to 90 feet tall. The average footcandles in the outfield would be 70 and the average footcandles in the infield would be 100.

Response. See Draft EIR Section 4.2. Aesthetics and Appendix D for a detailed analysis of proposed project sports lighting in comparison to existing sports lighting. See also Responses to Comments B5-56 through B5-87 for responses to comments regarding the lighting analysis included in the Draft EIR.

C5-16 Comment. The DEIR describes Panoramic Hill neighborhood as being “southwest” of the project site. By omission, this is an error. The Panoramic Hill neighborhood is also south of the project site, e.g., 299 Panoramic Way. The scope of the Aesthetic analysis should include the part of the neighborhood which is due south of the project if it has not already done so.

Response. The Draft EIR provides appropriate analysis of the Panoramic Hill Neighborhood, which is identified as being located south and southwest of the project site, as described in Draft EIR Chapter 3, Project Description. The Project Description accurately states: “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.”

C5-17 Comment. BIOLOGICAL RESOURCES –

Inadequate methodology: BSA too small.

The methodology which was used to study biological resources identified a Biological Study Area (BSA) and then looked for candidate, sensitive, or special-status species within it. The BSA was defined as “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.”⁷

The study area was too small to identify potentially impacted species. Potential impacts from noise and light could easily extend beyond 500’ from the proposed project.

Footnote:

⁷ page 4.3-1

Response. The commenter does not provide any rationale for their assertion that potential impacts “could easily extend beyond 500’ from the proposed project.” Typically, the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will recommend no-disturbance buffers of 500 feet or less from listed or special-status wildlife or plant species to proposed ground-disturbing/construction activities. These buffers depend on biological resources occurring or potentially occurring within and surrounding a project site; and known species sensitivities to disturbances. For the current project, a 500-foot buffer is considered sufficient to capture impacts on species occurring in this urban environment that have adapted to existing noise and light levels. In addition, no raptor species for which larger buffers are often prescribed (e.g., up to 1 mile for golden eagles [USFWS 2021]) are expected to nest within 1 mile of the site; the closest golden eagle nest occurrence is in Sibley Volcanic Reserve approximately 3/5 miles to the south. See Responses to Comments C2-2 and C3-1 related to lighting, nocturnal wildlife, and habituation within the urban-wildlife interface.

C5-18 Comment. Exclusion of legitimate corridor.

The methodology studies wildlife movement corridors by referencing a wildlife movement corridor which has been mapped while failing to apply definition and criteria to recognize a wildlife movement corridor which exists in the Hill Campus East and which is contiguous with the project site. This would be the Ecological Study Area⁸ ⁹ which is contiguous with the softball field on the south and is across the street from Centennial Drive to the north of the project site. The ESA extends to, and is inclusive of, the Upper Strawberry Canyon, which is referenced below.

The DEIR states, “The project site and BSA (Biological Study Area) are not located in any established wildlife movement corridors.”¹⁰ Yet the DEIR mentions a “critical linkage mapped by Penrod et al. (2013) (and which) 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...bobcat, and black-tailed deer, but it is also intended to serve several other species, such as American badger... brush rabbit...California quail... loggerhead shrike... California red-legged frog... white-tailed kit, Wrentit, and Alameda whipsnake.”¹¹

Footnotes:

⁸ UC Berkeley Hill Campus Working Paper (2002), Figure 2. Hill Campus Land Use – 1990 LRDP.

⁹ Ibid. Figure 3. Hill Campus Land Use – 2020 LRDP.

¹⁰ Ibid. page 4.3-16

¹¹ Ibid. page 4.3-16

Response. Draft EIR Section 4.3, Biological Resources, Impact BIO-4 evaluates whether the proposed project would “interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.” The analysis for Impact BIO-4 states that “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”. These undeveloped areas are mapped as “Natural Areas” in Hill Campus East (UC Berkeley 2021a; UC Berkeley 2022). Indeed, the Hill Campus East is mostly undeveloped and provides wildlife residing near a university campus with the unique opportunity to utilize undeveloped areas around existing facilities. Wildlife may use these undeveloped hillsides for feeding, cover, reproduction, and movement and the analysis for Impact BIO-4 considers this.

While the existing softball field and associated facilities are situated adjacent to these natural areas, CEQA requires the evaluation to consider whether the proposed project would substantially interfere with the movement of any native resident or migratory fish or wildlife species, as defined above. As described in Draft EIR Section 3, Project Description, and Section 4.3, Biological Resources the proposed project is located within entirely developed areas with little or no remaining natural vegetation and limited wildlife habitat value. The softball field is currently fenced and provides little to no movement opportunities for wildlife traversing through the region. The proposed improved facilities would continue to be fenced and, as such, would not interfere with the existing movements of wildlife in the region. The Draft EIR also determined if the proposed project was situated in a region identified as a critical habitat linkage for wildlife movement and connectivity or if the proposed project would create new barriers that would alter

wildlife movement. As described in Draft EIR Section 4.3, Biological Resources the proposed project is not situated in such an identified area and would not create new barriers that would alter wildlife movement. In addition, project operations would be similar to existing conditions and 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. The “East Bay Hills-Diablo Range” critical linkage referenced by the commenter was, as commenter notes, included in the Environmental Setting discussion in Draft EIR Section 4.3, Biological Resources and, as such, was considered in the Draft EIR. As noted above, however, the project site is not situated in a region identified as a critical habitat linkage for wildlife movement and connectivity and the proposed project would not create new barriers that would permanently alter wildlife movement patterns, as described in Impact BIO-4.

C5-19 Comment. The DEIR did not report examination of the Ecological Study Area. A review of Figures 2 and 3 of the Hill Campus Land Use Map shows the ESA on both sides of the canyon and within 500’ of the project site.

Response. See Response to Comment C5-17 which addresses the commenter’s concerns related to evaluating areas beyond the 500-foot buffer and Response to Comment C5-18 regarding consideration of the Ecological Study Area. All areas within the Biological Study Area, defined as the project site plus a 500-foot buffer, were evaluated in Draft EIR Section 4.3, Biological Resources. This includes portions of the adjacent undeveloped areas designated as an “Ecological Study Area.” The term “Ecological Study Area” as noted in the 2002 UC Berkeley Hill Campus Working Paper is a designation for the purpose of preserving undeveloped areas for instruction and research (UC Berkeley 2002). As described in Draft EIR Section 4.3, Biological Resources, the proposed project is proposing to upgrade existing facilities located within entirely developed areas with little or no remaining natural vegetation. Therefore, no expansion of development is proposed within the adjacent “Ecological Study Area.”

C5-20 Comment. Please see recent photographs, dated 12/28/23, of two tributaries, one of which is Chicken Creek near the former Poultry Husbandry Building in Strawberry Canyon. Both creeks are within 500-feet of the project site. Please see the Helios EIR¹² for a description of biological resources in Chicken Creek. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter C5 attached photographs.]

Footnote:

¹² <https://ceqanet.opr.ca.gov/2007072107/2>

Response. The first feature mentioned in the comment is mapped in Draft EIR Figure 4.3-1, Vegetation Communities and Land Cover Types, and described in Draft EIR Section 4.3, Biological Resources (Subsection 4.3.1.5, Sensitive Biological Resources, Jurisdictional Aquatic Resources), and was therefore considered in our analysis under Impact BIO-3. The Chicken Creek channel mentioned by the commenter is approximately 800 feet east-northeast of the project site and therefore outside the Biological Study Area, but our conclusions would be the same. The proposed project would not impact either feature because no ground disturbance or construction is required in or near the channels, as further described in Impact BIO-3. See also Response to Comment B3-8.

C5-21 Comment. The two tributaries flow from the south-facing slope of Strawberry Canyon and are culverted underneath Centennial Drive where they connect to the Strawberry Creek culvert.

Response. See Response to Comment C5-20.

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C5-22 Comment. Inadequate survey.

Were the riparian areas studied? It would seem they would have been included since they are located within the 500' buffer. The one-and-a-half hour survey was conducted on 9/15/22. An hour and a half field survey from 9-10:30 a.m. is insufficient to study both the project site and a 500-foot buffer around the site. Moreover, despite the proposed project first being announced in 2018, there is just this single sampling of biological resources which occurred during a fall morning. Variation by season and time of day might have yielded different results. A sample size of one is inadequate.

Response. The biologist examined and photographed all riparian features during the field reconnaissance and they were considered in the Draft EIR Section 4.3, Biological Resources, Impact BIO-3 analysis. With respect to commenter's concerns regarding the length, date, and time of the field study, the potential for special-status species to occur is based on EIR biologists' cumulative experience conducting habitat assessments for special-status species throughout the Bay Area, knowledge of species' habitat preferences (e.g., soil types, elevation, vegetation communities), life history literature, and nearby occurrences in addition to observed conditions on the project site. The entire site is already developed and additional surveys would not change the biologists' conclusions in Appendices E-3 and E-4 which considered species' seasonal variability in their distribution. As such, additional field reconnaissance is not necessary to determine the potential for special-status species to occur at the project site. See also Response to Comment C5-23.

C5-23 Comment. The DEIR concludes that the only potential impact is to the San Francisco dusky-footed woodrat, and that this effect can be mitigated. The DEIR identifies no other species of concern.

Response. San Francisco dusky-footed woodrat is the only special-status species for which proposed project construction could have a substantial adverse effect and the impact was identified as potentially significant, but implementation of MM BIO-1 would reduce this impact to less than significant. Other special-status species evaluated in detail because they have a moderate potential to occur on or in the vicinity of the project site include special-status birds and bats (Cooper's hawk, white-tailed kite, olive-sided flycatcher, pallid bat, western red bat, and hoary bat), Alameda whipsnake, and Puma (mountain lion). While construction activities could impact the special status birds and bats, UC Berkeley would implement CBPs 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. The project would have less than significant impacts to the Puma and Alameda whipsnake. The rationale for these findings is supported by Draft EIR Appendices E-3 and E-4 and the analysis under Impact BIO-1 in Draft EIR Section 4.3, Biological Resources.

C5-24 Comment. Inappropriate removal of coastal live oak-bay woodland flora.

According to this interpretation of the Wildfire Vegetative Fuel Management Plan,¹³ vegetation would be removed 100' from the project site. Yet south and southwest of the project site are coast live oaks which are "native trees in the Bay Area, and are well-adapted to fire conditions."¹⁴

Footnotes:

¹³ See 4.7 – 31, footnote. “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.

¹⁴ <https://oaks.cnr.berkeley.edu/assessing-fire-damaged-coast-live-oaks-2/#:~:text=Effect%20of%20Fire%20on%20Oaks,well%20adapted%20to%20fire%20conditions>

Response. The commenter is concerned that the Wildfire Vegetative Fuel Management Plan (WVFMP) requires the removal of coast live oaks within 100 feet of the project site because these types of oaks are adapted to fire and are not a fire hazard. The WVFMP does not require living coast live oak trees be removed (UC Berkeley 2020). The University concurs that healthy coast live oaks should not be removed as a method to reduce wildland fire hazard.

WVFMP include a set of treatment standards for defensible space. In these standards, pruning of lower branches is specified. Dead trees must be removed in this defensible space area. In unusual cases, thickets of small oaks may be thinned, to both reduce fire hazards and also to promote the health of the remaining oaks.

C5-25 Comment. CULTURAL RESOURCES –

The DEIR failed to examine the impact on Strawberry Canyon as a potential cultural landscape and the impact on a historic district listed on the National Register of Historic Places, the Panoramic Hill Historic District¹⁵.

Cultural landscapes.

Cultural Landscapes are a category of historic resource described by the National Park Service and the National Register. <https://www.nps.gov/subjects/culturallandscapes/understand-cl.htm>
<https://www.denix.osd.mil/legacy/denix-files/sites/33/2022/01/Perspectives-in-Landscapes-Paper-2006-Legacy-06-294.pdf>. The absence of any study or consideration of Strawberry Canyon as potentially eligible as a cultural resource is a significant omission.

Strawberry Canyon holds much of California's history. Writings by the Berkeley Architectural Heritage Association (BAHA) about the landscape potential provide a deeper awareness of the state's culture and history. Various events are memorialized through the setting and the experience of being in these wilds, which have been sustained by virtue of moderating use and development over the years.

There is the Stephen Mather Redwood Grove (1st Director of the National Park Service), the University's Botanical Garden, Julia Morgan's Senior Women's Hall, which is located at the Botanical Garden, the history and creation of the Ecological Study Area, the Wurster, Bernardi, & Emmons designed Haas Club House at the Strawberry Canyon Recreation Area. These resources are documented in a newsletter of the Berkeley Architectural Heritage Association (BAHA)¹⁶. Other BAHA newsletters which describe Strawberry Canyon for its potential as a cultural landscape worthy of landmarking are found in the Summer of 2007¹⁷ and the summer of 2008¹⁸ newsletters. BAHA also hosted an event with Charles Birnbaum¹⁹, a nationally recognized expert on cultural landscapes.

BAHA's letter to Lawrence Berkeley National Laboratory about the impacts from the proposed Helios building also provides additional information about the canyon's resources as a cultural resource. https://berkeleyheritage.com/helios_baha_letter1feb08.html

Key figures in the Sierra Club's early history used to live in the Panoramic Hill Historic District (Marion Randall Parsons and Edward Taylor Parsons), or the vicinity (William Colby and Joseph N. LeConte). <https://www.sierraclub.org/library/key-figures-sierra-club-history> Hill resident Lincoln Hutchinson co-founded the Sierra Ski Club, and a lodge was named after him.²⁰ Their architecturally-distinguished houses reflected a lifestyle which invited the outdoors inside rather than shuttering it outside as was done during the Victorian era preceding Arts and Crafts design.

Architectural resources of distinction (National Register) in the vicinity include Memorial Stadium, which is at the mouth of the canyon, Bowles Hall on the west facing hillside just outside of the canyon, and the Greek Theater, which was designed by Julia Morgan, on Gayley Road.

Footnotes:

¹⁵ <https://npgallery.nps.gov/GetAsset/1f8ae583-b015-4cd8-a8ad-15573cdc7bd1>

¹⁶ Fall-2007/Winter 2008 Newsletter. <https://berkeleyheritage.com/newsletter/127.fall-winter2007-08.pdf>

¹⁷ <https://berkeleyheritage.com/newsletter/126.summer2007.pdf>

¹⁸ <https://berkeleyheritage.com/newsletter/129.summer2008.pdf>

¹⁹ https://en.wikipedia.org/wiki/Charles_A._Birnbaum

²⁰ <https://www.clairtappaanlodge.com/hutchinson-lodge>

Response. The comment suggests that the Draft EIR does not consider the project's potential conflict with, and impact to, Strawberry Canyon and the Panoramic Hill Historic District. See Response to Comment B3-2, which discusses Strawberry Canyon and describes analysis and impact conclusions contained in the Draft EIR related to Panoramic Hill Historic District. The commenter has not provided any substantial evidence that Strawberry Canyon is a cultural or historic resources. Moreover, the proposed project is the renovation of an existing softball field that will not introduce a new use into Strawberry Canyon. The footprint of the existing softball facility would remain unchanged with the proposed project. Finally, as a result of the proposed project, skyglow impacts would be reduced, as described in Response to Comment B5-60.

C5-26 Comment. Strawberry Canyon still has integrity of setting if only the land use is not urbanized. Night games are grossly artificial which is the antithesis of the values represented in Strawberry Canyon's history. Skyglow urbanizes the environment which is in contradiction to the rustic nature of the canyon's trails and environs.

The cultural resource impact analysis was also inadequate for failing to consider the effect of the project on the Panoramic Hill Historic District, which functions as a residential district ("domestic – single and multiple dwellings). The proposed project is within 90 feet of the historic district.

Response. See Response to Comment B3-2, which discusses Strawberry Canyon and describes analysis and impact conclusions contained in the Draft EIR related to Panoramic Hill Historic District. As explained in Response to Comment B5-60, skyglow impacts would be reduced as a result of the proposed project.

C5-27 Comment. “Under criterion C, Panoramic Hill is significant in the area of architecture as a neighborhood that represents the Bay Area Tradition²¹ in architecture, primarily the first phase associated with the Arts and Crafts Movement.²²” The historic district is profoundly linked to the canyon environs by shared history and values reflected in the district’s architecture.

Footnotes:

²¹ https://en.wikipedia.org/wiki/First_Bay_Tradition

²² <https://npgallery.nps.gov/GetAsset/1f8ae583-b015-4cd8-a8ad-15573cdc7bd1> section 8 page 1

Response. The comment provides historic context to the Panoramic Hill Historic District. See Response to Comment B3-2 for a discussion of the impact analysis contained in the Draft EIR related to Panoramic Hill Historic District.

C5-28 Comment. Importantly, the impact is to the district as a whole and not to any individual structure in the district. Integrity of setting would be lost from light and noise impacts which would create a more urbanized environment.

In short, the DEIR erred in not evaluating the effect on the visual character of Strawberry Canyon and how it would impact its potential as a cultural resource. Neither did the DEIR consider the integrity of setting and association of the Panoramic Hill Historic District.

Response. See Response to Comment B3-2, which discusses Strawberry Canyon and describes analysis and impact conclusions contained in the Draft EIR related to Panoramic Hill Historic District.

C5-29 Comment. GEOLOGY AND SOILS –

Strawberry Creek has flooded the Strawberry Creek Recreation Area. One notable occasion in 1962 led to “(t)he pool deck (being) buried under six inches of mud... The pool itself was filled with muddy water and debris.²³” More recently, the upper pool at the Strawberry Canyon Recreation Area was closed after a soil event (either due to rain or landslide) in which the upper pool was closed. Was the pool contaminated by hazardous and/or toxic substances from one of the tributaries flowing from the Lawrence Berkeley National Laboratory?

The university has documented issues related to soils and creeks and the interaction thereof²⁴.

Recently, the hillside on the northside of Centennial Road and across from the Witter Rugby Field and at a diagonal to the existing softball field had more than one landslide. The area is covered over with fabric of some kind and is now 154’ in length. Attached please find a photograph for your review. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter C5 photograph.]

The relevance of landslides is the potential to further compromise ingress and egress. There are, in other words, potential transportation impacts due to geological and soil conditions.

Footnotes:

²³ Finacom, Steven (Spring, 1998). The Strawberry Creek Flood of 1962. Chronicle of the University of California. Pages 107-109.

²⁴ <https://creeks.berkeley.edu/strawberry-creek-management-plan-1987/363-storm-drainage-system>

Response. The comment describes previous flooding and landslide events in the project area. The cited flooding does not relate to the project site. As detailed in Draft EIR Appendix A-1 and summarized in Draft EIR Chapter 5, Other CEQA Considerations, according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the project site is located in an area of minimal flood hazard (Zone X). The project is not located within a flood zone. Additionally, as part of the proposed project, UC Berkeley would implement the hydrological CBPs listed in Draft EIR Chapter 3, Project Description. Based on the design of the proposed project to achieve net zero runoff (see Chapter 3, Project Description), and the implementation of hydrological 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 proposed project would not be significantly impacted by rain or flooding events.

As described in Response to Comment C5-2, the project site is not located in a landslide hazard zone and impacts related to landslides were determined to 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 a similar question 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. This comment was cited and addressed in Draft EIR Chapter 5, Other CEQA Considerations, as follows:

“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.”

As reiterated above, 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. Therefore, the

proposed project would not have any ancillary impacts on evacuation in the event of a landslide at this intersection.

The slope being worked on the attached photograph is an example of the work done by UC Berkeley Facilities Services to support the hillside during rainy season. The comment also raises a question related to Lawrence Berkeley National Laboratory that is outside the scope of the EIR.

C5-30 Comment. Geology and Soils were studied in the Initial Study and impacts were deemed “less than significant.” The only area for which there was “no impact” was the capacity of the soils to support the use of septic tanks if sewers were not available.

Response. The comment summarizes impact conclusions of Draft EIR Appendix A-1 that are also reported on in Draft EIR Chapter 5, Other CEQA Considerations. The conclusions cited are accurate. The comment does not include comments or questions about the Draft EIR analysis or impact conclusions. See Responses to Comments C5-31 through C5-37 for responses to more detailed comments.

C5-31 Comment. It is noted that “the project site is located approximately 700 feet east of the Alquist-Priolo Earthquake Fault Zone for the Hayward fault...(that) (t)he project site overlaps with the liquefaction hazard zone along the western portion of the site and an earthquake-induced landslide zone lies beyond the project site’s southern boundary... Liquefaction zones are described as areas where historical occurrence of liquefaction or local geotechnical and ground water conditions indicate a potential for permanent ground displacements.²⁵”

It is also noted that “soils at the project site consist of an artificial fill topsoil layer (ranging between approximately 2 feet to 38 feet below ground surface, underlain by natural alluvium/colluvium deposits (2 feet to 27 feet) and bedrock of the Great Valley Complex (20 feet to 470 feet).²⁶” Has site-specific testing been done to determine what type of soil is underneath the area where the heaviest structures will be built? If so, please provide the documentation including the geotechnical investigation report (A3GEO 2018) listed.

It is furthermore noted that “(g)roundwater was not encountered in exploratory borings at the project site during the subsurface geotechnical boring...²⁷ It is noted that “(g)roundwater levels can fluctuate significantly with location, season, precipitation, leakage in and out of utilities, and other factors.²⁸ During what month was the testing conducted?

“The south- and west-facing slopes north of Centennial Drive are much drier than those to the south... Much of the area north of Centennial Drive was created by fill excavated during construction of Memorial Stadium or Centennial Drive ...²⁹”

Footnotes:

²⁵ Cal Softball Field Renovation Project Initial Study (November 2022). Page 28.

²⁶ Ibid. page 28.

²⁷ Ibid. page 28.

²⁸ Ibid. page 28.

²⁹ DEIR Cal Softball Field Renovation Project, page 4.3-7,8

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Response. The comment provides excerpts from Draft EIR Appendix A-1 related to the geologic and soil conditions of the project site. The comment inquires if site-specific testing was done to determine soil types; the commenter also asks what month of the year this testing was performed. A geotechnical investigation for the project was performed by A3GEO in 2018. According to this report, soil testing was done in 1959, 1992, and 2018 by various geotechnical firms (including A3GEO). According to Appendix B of the geotechnical investigation, subsurface borings were taken in July of 2018 to determine soil and bedrock characteristics; no groundwater was encountered during these borings. As indicated in the A3GEO report, groundwater was also not encountered in boreholes advanced by Herzog Associates in September 1992 or in boreholes advanced by WCSA around 1959. The A3GEO report, however, indicates the groundwater levels can fluctuate significantly with location, season, precipitation, leakage in and out of utilities and other factors. The foundation design and geotechnical recommendations do not rely on the lack of groundwater under the project site. For example, the geotechnical recommendations acknowledge the potential need to dewater while conducting excavations during construction. Additionally, while groundwater was not observed in any of the recent or historic test borings, indicating that the conditions to trigger liquefaction are likely absent, the deep foundation design founded on bedrock will address potential differential foundation settlement due to the presence of undocumented fill, localized liquefaction, and subsidence (A3GEO 2018). See Response to Comment C5-1a regarding providing requested documents to the commenter.

- C5-32** Comment. The field itself is in a liquefaction zone which is problematic from the standpoint of supporting the structures. There will be a stadium with a capacity for 1,511 spectators, as well as other structures, e.g., a stadium concourse³⁰. Does the University of California Seismic Safety Policy allow the construction of buildings in liquefaction areas which are as large as the proposed project structures? Will the concourse be on top of the stadium? Please provide a figure which shows the perspective from ground level.

Footnote:

³⁰ Ibid. page 3-23

Response. See Response to Comment C5-2 for a summary of impacts conclusions related to liquefaction. The University of California Seismic Safety Policy allows construction in liquefaction areas subject to geotechnical investigation and associated recommendations of those investigations. As detailed in Draft EIR Appendix A-1, a geotechnical investigation report was performed for the project by A3GEO in 2018. The report analyzed soil characteristics and topography of the site as they relate to the potential for landslides and liquefaction. This analysis, as summarized in Appendix A-1, concluded that these potential impacts would be less than significant through the adherence of recommendations of the geotechnical investigation, University of California Seismic Safety Policy, and University CBPs. Draft EIR Figure 3-8 indicates the location of the concourse. Part of the concourse is on top of the locker rooms, lounges, training room and storage. Perspectives of the project from ground level are shown on Draft EIR Figure 4.2-6 and 4.2-9.

- C5-33** Comment. The proposed project will need to have utilities built which will have connections to existing utilities.

“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.³¹ (emphasis added)”

Where it is stated that average attendance is 500 and that average anticipated attendance is 1000, which doubles the attendance, the impact hardly seems “marginal.”

Footnote:

³¹ Ibid. page 59.

Response. Draft EIR Chapter 3, Project Description Table 3-2 indicates that the existing average attendance at the Cal Softball Field is 500 spectators, and the average attendance would be 1,000 spectators as a result of the proposed project. The comment expresses an opinion that the increase in average attendance and associated increase in demand for utilities is not “marginal,” as described in the Draft EIR. While the increase in spectators itself may not be considered marginal, the presence of the 500 additional spectators at the project site for 2.5-hour games for up to 25 times per year would result in a marginal increase in demand for water supply in relationship to the total demand for water supply of the populations served by the East Bay Municipal Utilities District, which services the project site.

C5-34 Comment. Attached please find attached a letter from Professor Emeritus Garniss Curtis who objected to the construction of buildings at some locations at the Lawrence Berkeley National Laboratory site. Also attached is the Regents’ decision to decertify the Helios EIR, which would have allowed the construction of a building near Chicken Creek. These observations might be relevant to the proposed project, and thus, I am including this information. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter C5 attached letter.]

Response. The comment relates to a letter about construction of buildings at Lawrence Berkeley National Laboratory. The letter provides an opinion against constructing large buildings in the lower portion of Strawberry Canyon due to concerns related to the geology and soils of the canyon; the letter also identifies seismic and landslide risk concerns associated with the Hayward Fault. The comment also relates to an approval to decertify a Final EIR and rescind design approval for a research facility project proposed at Lawrence Berkeley National Laboratory. This approval was made to allow for further investigation and redesign of the project to address geotechnical concerns. By providing this letter and the approval to decertify a previous Final EIR, the commenter alludes to general geologic concerns related to development in the proposed project vicinity. The proposed project is the renovation of an existing outdoor softball field. Geologic issues are addressed for the proposed project in Draft EIR Chapter 5, Other CEQA Considerations, as well as in the Notice of Preparation and Initial Study (Appendix A-1). 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. As such, all impacts related to fault rupture, seismic shaking, landslides and liquefaction were determined to be less than significant. See also Response to Comment C5-2 for a discussion of the project in relation to the Hayward Fault.

C5-35 Comment. Attached is a map of the Hayward Fault and the liquefaction area north of the fault line in the location of the proposed project.³² [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter C5 attached map.]

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Footnote:

³² Geomatrix. Site Location Map and Location of Hayward Fault in Berkeley, California Memorial Stadium, University of California Berkeley.

Response. See Response to Comment C5-2 for a summary of impact conclusions related to liquefaction.

C5-36 Comment. Of concern then are several scenarios. One is that the sliding hillside on the northside of Centennial Drive will interfere with access to the proposed project. Secondly, the concern is that the soil characteristics at the site of the heaviest structures will not support construction and remain stable over time. Has the University conducted any geologic studies to determine the viability of building the proposed structures and holding the anticipated number of people in a liquefaction zone?

Response. As detailed in Draft EIR Appendix A-1, a geotechnical investigation report was performed for the project by A3GEO in 2018. The report analyzed soil characteristics and topography of the site as they relate to the potential for landslides and liquefaction. This analysis, as summarized in Draft EIR Appendix A-1, concluded that these potential impacts would be less than significant through the adherence of recommendations of the geotechnical investigation, University of California Seismic Safety Policy, and University CBPs. See also Responses to Comments C5-2 and C5-29.

C5-37 Comment. Of concern too is whether atmospheric rivers and other intense rain events will interact with these conditions and compromise the safety and security of people and structures.

Response. See Responses to Comments C5-2 and C5-29.

C5-38 Comment. NOISE –

The DEIR recognizes that there are "noise-sensitive land uses... (which) include residents to the southwest, south, and southeast of the softball field."

This is also to point out (using DEIR data) the angles of the slopes to the north and south of the softball field. The slopes range from 30-75%, as documented in Figure 4.3. The slopes are relevant to how sound is dispersed or not and how light can be reflected as described by the Panoramic Hill Association's experts.

The noise data measurement show that sound does not dissipate further up the hill. The measurements do not adequately represent the scope of the effect, the impact, the problem.

Response. The ambient noise measurement locations (depicted in Draft EIR Figure 4.5.1) were positioned in direct lines from the existing softball field to the closest residences to the facility. In this regard, suitable and adequate ambient noise data was collected to characterize the existing sound levels at adjacent residential neighborhoods during several softball game events and for periods with no softball games. The topography of the area from the existing softball field to the residential area, and including the residential area, was entered into the three-dimensional sound prediction model (SoundPlan) to ensure that the prediction of sound levels from the renovated softball field at the adjacent residential areas would be accurate. See also Response to Comment B5-40 for additional discussion regarding the consideration of topography in the SoundPlan model.

C5-39 Comment. The noise sensitive setting is further emphasized based on the City of Berkeley noise ordinance. The neighborhood is located in the Environmental Safety-Residential Zone, <https://berkeley.municipal.codes/BMC/23.202.070> which has a limit of 55 dBA. <https://www.nonoise.org/regulation/ordinance/Berkeley,%20California.pdf>

Please clarify that is it not only the “residences closest to the Project site³³” which are within the Environmental Safety-Residential (ES-R) zone but rather all of the houses within Berkeley’s jurisdiction on Panoramic Hill. The zoning is relevant to establishing the noise ordinance standards for the district.

Footnote:

³³ UC Berkeley CA Softball Field Renovation Project Draft EIR, page 4.5-11.

Response. The discussion under the sub-heading Noise-Sensitive Land Uses (Draft EIR Section 4.5, Noise) clearly describes the area within which the ES-R zoning applies. Not all residences within Berkeley’s jurisdiction on Panoramic Hill are included in the ES-R zoning; however, the R-1, R-2, R-1A, R-2A, and ESR zoning districts are all subject to the same City noise limits, as shown in Draft EIR Table 4.5-6. As explained in the Draft EIR and as described in Response to Comment B5-15, UC Berkeley is not subject to the City of Berkeley’s noise ordinance. See also Responses to Comments B5-42 through B5-47 that explain the appropriate use of the FICON significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use).

C5-40 Comment. The DEIR is inconsistent in describing the location of Panoramic Hill. Usually it is described as southwest of the project site, but it is also south of the project site and further up the hill. It is important to accurately describe the subject of what is being studied, and in this case is it is the study of noise impacts on Panoramic Hill residents.

Please correct that affected areas include Arden Road and not only Arden Path. Again, assumptions are made without foundation in terms of where measurements would be collected. The failure to measure more comprehensively suggests a failure to understand the difference between noise impacts in hillside residential environments and houses in flat terrain.

Response. The assessment of project noise levels is not limited solely to residences on Panoramic Hill. The location of residences in the vicinity of the project site, considered noise sensitive receivers and included in the noise analysis, are depicted in Draft EIR Figure 4.5-2. Thus, a description of the boundaries of Panoramic Hill is not used as the basis of noise analysis and is secondary to the depiction of the area of analysis in Draft EIR Figure 4.5-2. Specifically, representative residential receivers addressed in the modeling of project construction noise are depicted in Draft EIR Figure 4.5-3; residential receivers addressed in the modeling of project softball game noise are depicted in Draft EIR Figures 4.5-4 and 4.5-5, which also provide the boundaries of noise contours from game events that extend outward from all sides of the project site. With respect to the measurement locations employed for ambient noise data collection, the ambient noise measurement locations (depicted in Draft EIR Figure 4.5.1) were positioned in direct lines from the existing softball field to the closest residences to the site and facility. In this regard, suitable and adequate ambient noise data was collected to characterize the existing sound levels at adjacent residential neighborhoods during several softball game events and for periods with no softball games. The topography of the area from the existing softball field to the residential area, and including the residential area, was entered into the three-dimensional sound prediction model (SoundPlan) to ensure that the prediction of sound levels from the renovated softball field at the adjacent residential areas would be

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accurate. See also Response to Comment B5-40 for additional discussion regarding the consideration of topography in the SoundPlan model.

- C5-41** Comment. The existing description identifies different noise thresholds for the respective municipalities' noise ordinances but does not identify the jurisdictional boundaries between Oakland and Berkeley. Of sampled houses, which are in Oakland and which are in Berkeley? The different jurisdictions have different noise ordinances and standards.

Response. The jurisdictional boundary between Berkeley and Oakland is depicted on Draft EIR Section 4.5, Noise (Figure 4.5-2), in relation to the location of residences in the vicinity of the project site. Draft EIR Table 4.5-14 designates which residences modeled for construction noise exposure are within Berkeley, while Draft EIR Table 4.5-15 identifies the modeled construction noise receiver in Oakland. As explained in the Draft EIR, UC Berkeley is not subject to either the City of Berkeley's or the City of Oakland's noise ordinances. See Response to Comment B5-15 for additional information about these noise ordinances. See also Responses to Comments B5-42 through B5-47 that explain the appropriate use of the FICON significance threshold for evaluation of softball game noise (i.e., crowd activities and public address system use).

- C5-42** Comment. Please see the City of Berkeley Municipal Code, Community Noise Chapter 13.40, Table 13.40.a1. There it is clear that "levels not to be exceeded more than 30 minutes any hour." Also please note that between 7 a.m. – 10:00 p.m., the standard is 55 dBA but that between 10:00 p.m. – 7:00 a.m. the standard is 45 dBA.

The DEIR states that the operational hours end at 10:00. Does that mean the field will be shut down, and gates closed? It is unlikely that all the noise will abate by 10:00.

Response. The referenced City of Berkeley Municipal Code, Community Noise information was included in the Draft EIR Section 4.5, Noise (Table 4.5-6). As explained in the Draft EIR, UC Berkeley is not subject to the City of Berkeley's noise ordinance. As described in Chapter 3, Project Description, 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.

- C5-43** Comment. The crowd (up to a capacity of 1,511 spectators) cannot disperse in 360° direction but instead will be walking in one direction, westward on Centennial toward a parking lot or to one of the few available parking spaces on the street.

The closest parking lot is .3 mile away.

Response. Because minimal parking is proposed to be provided on the project site, most spectators would be anticipated to walk to and from the softball field as they do now, and as suggested by the commenter. Sound levels generated by spectators walking to and from the facility would be lower than those from the crowd cheering during the event, as such pedestrians would typically be engaged in conversations in small groups rather than shouting encouragement to their team, and there would also not be any noise during this activity from the public address system; the pedestrian activities would also be located further from homes to the south than the spectator seating areas for the softball facility, again providing a reduction compared to spectator crowd noise. Pedestrian activity would also generate noise levels that would be less than those generated from the operation of passenger vehicles transporting these spectators along

the same travel routes, the latter of which were analyzed in the Draft EIR and impacts were found to be less than significant.

- C5-44** Comment. There is also noise associated with service vehicles, broadcasting equipment, vendor operations, etc., which are noise sources not yet accounted for. These are new sources of noise because there have not hitherto been night games.

Response. As described in Chapter 3, Project Description, 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. See Responses to Comments B5-2 and B5-49 for additional information about the use of the field after dark.

The number of support staff and maintenance staff would not change with the proposed project (see Draft EIR Chapter 3, Project Description [Table 3-2]). Support staff includes trainers, grounds crew, sports information directors, public address announcers, scoreboard operator, statistician, videographer, television broadcast crew, audio professionals, camera operators and other related employees. Boosters currently run food booths in the parking lots during some softball games, but these uses would be moved inside the new facility. Under the proposed project, audible noise that might be associated with spectators purchasing food would therefore be reduced. Likewise, some existing television network broadcast vans may use electrical generators during broadcasts; the project would provide electrical power hookups for any network broadcast vans to eliminate the use, and associated noise, of such generators under the project.

- C5-45** Comment. Noise also has the potential to disrupt residential neighborhoods as many as 21-25 nights. This will especially be a problem if spectators park in neighborhoods instead of public garages.

Response. None of the roadways serving the residential areas adjacent to the softball field are directly accessible from the project site, and therefore parking in adjacent the residential areas would not be convenient or anticipated for softball game events. Also shuttles to on-campus parking lots would be provided for larger games.

- C5-46** Comment. The problem of noise from pedestrians leaving the facility at 10:00 p.m., not knowing the area, and being amped up from recreating, yelling, and screaming for a few hours, and potentially being intoxicated, has not been addressed but instead completely omitted from measurement or comment. Since there are no existing night games, perhaps this is why. There is no baseline.

Response. None of the roadways serving the residential areas adjacent to the softball field are directly accessible from the project site, and therefore the potential would not exist for spectators to mistakenly wander into the residential areas. The only entrances/exits from the proposed facility would be oriented toward Centennial Drive, which provides pedestrian access to parking shuttles and on-campus parking lots. Noise associated with potentially exuberant spectators walking out of the facility would have been captured in the noise measurements conducted of existing games. The proposed building itself would introduce a substantial new noise barrier extending up to 35 feet above the playing field/street elevation, which should reduce sound associated with street-level pedestrians departing from the proposed facility. Alcohol may be served and is not prohibited at softball games. UC Berkeley would have staff that support a variety of functions for home events at the Cal Softball field venue, such as ticket taking, ushering, security, and crowd control. These staff will contact UC Berkeley Police Department, if needed, to preserve

public safety. The commentor's speculation that spectators will be intoxicated is not based on any substantial evidence. See Responses to Comments B5-2, B5-6, and B5-19 for a discussion of the appropriate baseline used in the Draft EIR.

C5-47 Comment. TRANSPORTATION –

VMTs.

The proposed project also increases vehicles mile traveled (VMT) in more ways than previously identified. Already, VMT is identified as a significant and unavoidable impact; however, it is likely that the impact is worse than previously documented.

That is because the increase in VMT will likely not be offset by the proposed mitigation. “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... The key elements of the UC Berkeley TDM Strategic Plan include: transit pass subsidies, shuttle services including night safety shuttle service, permit parking priced to influence demand, pretax commuter benefits program, bike share program, carpool program, online commute planning tool, bicycle parking carshare opportunities, and a designated TDM administer (sic) that manages the TDM program (UC Berkeley 2021a)”³⁴

The university's best practice is used for students, faculty, and staff who visit the campus on a regular basis. But no evidence was shown which demonstrates programmatic effectiveness with spectators, whose travel pattern is different from commuters. In other words, the Draft EIR provides no evidence which shows that online commute planning tools, a carpool program, pretax commuter benefits, etc. would provide sufficient incentives to change spectator behavior for one event, or even several events.

Not only is the population different than the population on which the TDM was developed, the TDM is used primarily for daytime use rather than night use. The project is associated with an increase in number of games played at night.

Footnote:

³⁴ Ibid. 4.6-12

Response. The comment states that the overall VMT of the proposed project is worse than documented, especially during the night, and that the proposed TDM plan as stated in the Draft EIR would not apply to the proposed project. For purposes of the TDM plan, it is irrelevant whether an increase in games after dark occurs; the Draft EIR fully discusses the proposed project trip generation under the three analysis scenarios: typical weekday use, typical event (average attendance), and maximum event (maximum attendance based on seating capacity). As noted in the Draft EIR, the gameday TDM measures that would be implemented to potentially reduce automobile congestion, increase pedestrian and bicycle use, and encourage transit, cannot be accurately assessed for their reduction in trip generation. Therefore, the VMT impact is conservatively determined to be potentially significant for typical events. As stated in the Draft EIR, under the typical weekday use and maximum event 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. See Response to Comments A1-7 and B1-6 for additional discussion of the TDM Plan.

- C5-48** Comment. The DEIR reports that in a recent survey, “approximately 95 percent of spectators drove their own vehicle...”³⁵ Maybe a location downhill and close to BART would reduce spectators’ reliance on vehicles as their means of transportation to softball games.

Footnote:

³⁵ Ibid. 4.6-12

Response. The comment expresses an opinion that a different project location would reduce the use of personal vehicles for transportation to softball games. Draft EIR Chapter 6, Alternatives, analyzes other locations for the proposed project, as described in Response to Comment B3-3. Also see Chapter 2, Revisions to Draft EIR, of this Final EIR for consideration of an additional off-site alternative at Edwards Stadium.

- C5-49** Comment. Given that the proposed project will increase the number of games and the number of night games, and given the unproven VMT strategy, it is likely that VMT will increase beyond what was studied here, and which is already found “significant and unavoidable.”

Response. The comment expresses concern that the proposed project will increase the number of games played at night, and that VMT will increase beyond what was documented. See Response C5-47 for Draft EIR VMT impact conclusions, which conservatively do not rely on the implementation of TDM. Additionally, as stated in Response C5-47, an increase in games played after dark is irrelevant to the VMT impact conclusions because VMT considers daily trips and does not distinguish based on the time of day the activities are conducted. The Draft EIR fully analyzes the increase in terms of number of trips per each of the three scenarios analyzed.

- C5-50** Comment. Parking is also limited in the area, and the lots mentioned in the DEIR all require an uphill walk. Plus, the parking garages are expensive and residential neighborhoods could be substituted at no cost. Parking isn’t monitored at night so the Residential Parking Permit (RPP) system does not discourage parking in residential neighborhoods. The impact in terms of the environment is to drive around looking for a place to park.

If spectators park at a lot, they are walking or being shuttled 0.3 miles from the Stadium Garage, 0.5 miles from the Underhill Garage, 0.8 miles from the Lower Hearst Garage, or 0.9 miles from the Recreational Sports Facility.

Response. The comment states that parking is limited in the area, expensive, difficult to walk to, far away, and that cars may park in the residential neighborhoods at night illegally without a permit. As described in the Draft EIR, several parking garages exist within walking distance of the project site, and the capacity and fullness of each parking area varies by location and time, however during the peak times of the week and day there is adequate capacity to accommodate the increase in spectators. 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. As explained in the Draft EIR, there is adequate parking in the vicinity of the proposed project to support the increase in spectators under all scenarios. Therefore, there would not be a secondary impact related to people driving around to look for parking.

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C5-51 Comment. Conflicts with City of Berkeley's General Plan Transportation Element.

The Draft EIR states that it will comply with the City of Berkeley's General Plan Transportation Element. It does not. Please refer to Claremont Elmwood Neighborhood Association's comment on the DEIR Cal Softball Field Renovation Project for a description of the problem.

The transportation analysis does not consider whether an increase in trucks is anticipated during operations. The transportation analysis considers spectators, athletes, coaches, and staff, but does not consider the impact of other vehicles which are associated with expanded use.

The analysis of net increase in project trip generation (Table 4.6-3) does not include the various service personnel and vehicles whether trucks or cars. The analysis is deficient in this way.

Response. The comment states that the proposed project does not comply with the City of Berkeley's General Plan Transportation Element. The comment also expresses concern regarding an increase in trucks, or other service personnel vehicles. See Response B1-4 for discussion related to the City of Berkeley's General Plan Transportation Element. The project trip generation tables fully analyze the total increase in vehicles as it pertains to the permanent increase in trips associated with the three analysis scenarios analyzed in the Draft EIR. Maintenance related trucks or personnel would not change with the proposed project, as shown in Draft EIR Project Description Table 3-2. See also Response to Comment C5-44.

C5-52 Comment. The transportation analysis fails to provide a safe route for construction traffic. It is noted that "Regional construction traffic is expected to travel to the project site by using California State Highway 24, ..., 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)."^{36, 37}

These streets have a tonnage limit which is specified in the Designated Truck Route Map. Will construction vehicles weigh less than three tons? If so, the plan laid out in the DEIR is out of compliance with City's regulations and despite the Draft EIR's statement that it was in compliance.

Footnotes:

³⁶ Ibid. 4.6-24

³⁷ City of Berkeley. 2017b. "Restricted Movement of Trucks" [map]. Accessed on April 27, 2023.

<https://berkeleyca.gov/sites/default/files/2022-02/Designated-Truck-Route-Map.pdf>. City of Berkeley. accessed on 1/25/24

Response. See Responses to Comments B1-2 and B1-3.

C5-53 Comment. Neither does the Draft EIR provide a route from the corridors to the canyon. The Draft EIR leaves it up to the contractors to solve this problem. By deferring the solution, the impacts are unanalyzed. This is dangerous because the shortest route is through a city street, which is Canyon Road, and which is substandard in width with no sidewalks.

Response. See Responses to Comments B1-2 and B1-3. Additionally, Canyon Road would not be used to access the project site.

C5-54 Comment. The Draft EIR improperly concludes that “(i)mplementation of these CBPs (continuing best practices) 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.”³⁸ To the contrary, the plan does not comply with the City of Berkeley’s Department of Public Works, Transportation Division’s Designated Truck Route map.

Response. The comment states that the CBPs discussed in the Draft EIR would not comply with the City of Berkeley General Plan transportation-related policies, and the City of Berkeley’s Department of Public Works, Transportation Division’s Designated Truck Route map. As described in the Draft EIR, the CBPs identified in reference to construction traffic would be implemented by the proposed project, including the requirement by UC Berkeley that contractors implement a Construction Traffic Management Plan to reduce potential impacts to roadway circulation. Also see Response B1-3 for additional discussion regarding construction traffic congestion and truck routes.

Footnotes:

³⁸ Ibid. page 4.6-25

C5-55 Comment. WILDFIRE –

Emergency response or evacuation plan.

The DEIR did not mention Assembly Bill 747 and did not mention evacuation route assessment. https://abag.ca.gov/sites/default/files/documents/2021-11/Resource_Guide_05_Evacuation_Considerations.pdf

Response. The comment correctly states that Assembly Bill 747 was not mentioned in the Draft EIR. AB 747 requires that local jurisdictions identify and evaluate evacuation routes upon updating their local hazard mitigation plans or general plan safety elements. As described in Draft EIR Section 4.7, Wildfire, the City of Berkeley’s 2019 Local Hazard Mitigation Plan outlines evacuation paths for residents (City of Berkeley 2019). A project specific evacuation analysis was included as Draft EIR Appendix H and summarized in Draft EIR Section 4.7, Wildfire. Figure 4.7-3 shows the possible evacuation routes for the project site and surrounding land uses. As described in Draft EIR Appendix H and Section 4.7, under a conservative mass evacuation scenario, the proposed project would result in a maximum increase of 10 minutes 25 seconds. As concluded in the Draft EIR, the project would not result in a significant impact related to the impairment of an adopted emergency response or evacuation plan. See Draft EIR Section 4.7 and Appendix H for additional analysis of evacuation routes.

C5-56 Comment. The proposed project makes an existing evacuation nightmare worse. Rather than adding population to an area, the university should be reducing population in the area.

The proposed project continues to put Californians and visitors in danger of coming into a VHRHZ where there is extremely limited ingress and egress. The limited ingress and egress have not adequately been described, delineated, relative to the capacity of the roadways and the population which currently needs these roadways to evacuate the area. It is not only the softball field spectators, players, coaches, staff, vendors, service personnel, etc., who must access and leave the site, but also the residents who live in East Berkeley, which includes residents who live in the city’s hill areas north, south, with Panoramic Hill in between. There appears to be no adequate study of the capacity of the road and the size of the population which would likely use this road.

3. COMMENTS AND RESPONSES

Response. The Cal Softball Field Renovation Project Fire Evacuation Analysis – Technical Memorandum, prepared by CR Associates (Draft EIR Appendix H), comprehensively addresses all the roadways considered in the evacuation study. This memorandum analyzes various potential evacuation scenarios. An overview of the key assumptions and conclusions of Draft EIR Appendix H is provided below.

Population: The analysis includes every individual leaving the site, notably residents near the UC Berkeley Campus who would use the same evacuation routes as the project site's staff, players, and spectators, collectively referred to as the project's traffic. As stated in Appendix H, the process for selecting evacuation areas was conservatively designed to cover all types of land use in proximity to the project's location that might share evacuation routes with the project's traffic. The selected areas fall within the High and Very High Fire Severity Zones, according to maps from the City of Berkeley and the State of California. Regions outside the study area do not utilize the same roadways as the project's traffic and would not have access to the roads used by the project's traffic and the adjacent population.

Roadway Capacity: According to Draft EIR Appendix H, the evacuation analysis utilized microsimulation software to model evacuation traffic behaviors, such as stopping and going, as vehicles vie for exit routes. Attachment B of the memorandum reveals that actual roadway capacity during an evacuation is likely to be lower than theoretical capacity due to congestion from downstream areas. According to the Highway Capacity Manual, the theoretical capacity of a roadway is 1,900 vehicles per hour per lane. However, Attachment B notes that the real capacity of the evacuation routes is reduced due to downstream congestion. Therefore, the analysis thoroughly accounts for roadway capacity, the evacuating population, and other traffic considerations.

C5-57 Comment. Other features of this location which are related to evacuation have to do with the proposed project being located east of the Hayward Fault. The proposed project is accessed by a two-lane roadway in a designated landslide area. Figure 4.3-2.

The roadways are few.

The north-south corridor of Gayley-Piedmont-Warring-Belrose is heavily trafficked and carries residents from all of the hillside residential areas (north Berkeley, south Berkeley, and Panoramic Hill in between). The only way to access and leave the proposed project is by way of this corridor. The exception is to travel up Centennial Drive to Grizzly Peak which might not be an option when there is a fire east of the project site.

To get to the proposed project requires using Stadium Rim Way and then Centennial Drive. The alternative is to come up Prospect Road to Canyon Road to Stadium Rim Way to Centennial Drive.

Canyon Road is substandard in width without any shoulder and without a sidewalk. A garage is built into the hillside and opens out into the street without a setback. There are natural restrictions to this roadway being tucked in between a retaining wall on one side (east) and the stadium on the other side (west). The attached photograph shows the barriers which cannot be eliminated (retaining wall on one side and the stadium wall on the other). Please note too that there is a power line at this location which is leaning toward the roadway. If it falls, it would completely prohibit ingress and egress.

The Prospect- Canyon-Stadium Rim Way corridor is furthermore restricted due to the Hayward Fault which runs lengthwise through the stadium and also intersects this corridor.

Another restriction exists on Centennial Drive. There was a recent landslide, or other significant land movement, which necessitated covering it to prevent further movement. The length of the slide is 154' as measured on 1/21/24.

Response. The comment summarizes the commenter's concerns with existing vehicle evacuation routes from the project site. The reduction in parking detailed in the Draft EIR will result in less vehicles parking at the project site and thus less vehicles to evacuate from the immediate area. As stated in Draft EIR Appendix H, the project will result in the removal of approximately 85 parking spaces, leaving around 25 spaces available in the existing Witter Lot. It further details that the staff, players, and spectators of the proposed project, collectively referred to as the project's traffic, will park in the nearest parking facilities that have available spaces due to the limited parking adjacent to the project site. According to the analysis documented in Draft EIR Appendix H and its Attachment B, the initial analysis involved determining the number of available parking spaces through parking counts and traffic volume surveys conducted by National Data Surveying Services. Subsequently, the analysis allocated these available parking spaces to vehicles associated with the project or Witter Field rugby games, with the assumption that individuals from these groups would walk from these parking areas to the project site. Compared to the baseline condition, the proposed project would result in a reduction of approximately 70% in parking spaces available in the Witter Lot, leading to fewer vehicles departing from the project site during an evacuation. Therefore, while Canyon Road is substandard, as noted by the commenter, there would be fewer vehicles departing from the project site during an evacuation with the proposed project.

Draft EIR Appendix H, as reported on in Draft EIR Section 4.7, Wildfire, evaluated the north-south corridor of Gayley-Piedmont-Warring-Belrose (see Appendix H, Figure 2), and the evaluation included all of the hillside residential areas (north Berkeley, south Berkeley, and Panoramic Hill in between), identified by the commenter. Furthermore, as indicated in Draft EIR Appendix H (Figure 2), Grizzly Peak is not assumed as an evacuation route. Grizzly Peak Boulevard heading toward State Route 24 via Tilden Regional Park is not included as an evacuation route as this route travels through areas with a lot of vegetation and fuel. Grizzly Peak Boulevard is included as an evacuation route (heading westward or off the mountain) for residents and land uses that use Grizzly Peak Boulevard as their primary access. For example, those that parked at the golf course would need to drive down Grizzly Peak and Centennial Drive to get off the mountain. None of the traffic from the project site is assumed to travel up the mountain as that would not be reasonable nor would first responders/law enforcement support that type of evacuation behavior. Due to lack of on-site parking, the majority of the attendees and staff would have to park in the vicinity of the UC Berkeley main campus. While a few may continue to park at the project site with the proposed project, there would be a reduction in total number of vehicles at the project site when compared to existing conditions.

Regarding the comment about a leaning power line falling across a roadway, if any power line falls along any of the access routes to/from the project site, PG&E would address such a situation immediately to avoid safety issues and to restore power. See also Responses to Comments C5-2 and C5-29 for information about the Hayward Fault and landslides.

- C5-58** Comment. Rather than preparing an evacuation route assessment, the DEIR used evacuation modeling to estimate impact. Assumptions were based on number of existing seats (permanent + portable) compared to future seats (permanent) rather than on the difference between existing average attendance (500) and predicted average attendance (1000). The latter is a two-fold increase in attendance and expected use.

3. COMMENTS AND RESPONSES

Response. The commenter's claim that the evacuation analysis is based only on maximum capacity of the facility is inaccurate. As indicated in Draft EIR Section 4.7, Wildfire and Appendix H, the greatest increases in evacuation 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). The results for the maximum event scenarios are presented in Draft EIR Appendix H.

C5-59 Comment. Exposing people or structures to significant risks from wildfire.

A significant expansion of the built environment and a significant increase in night games will expose people to significant risks from wildfire and hazards. A glamorous facility and sporting event will be inviting them there.

Once at the facility, there are risks from the human capacity to ignite wildfires. Will there be any prohibitions on leaving the softball field area and walking around outside of the fenced area? There is no mention of restriction of movement either during the day or night. Will alcohol be served or will smoking cigarettes or marijuana out of the fence be prohibited? Will security guards be posted?

Whether under the influence of a substance or not, spectators are at risk of leaving the facility and wandering onto Centennial Road and being hit by an oncoming vehicle.

Response. The comment expresses concern regarding the exposure to wildfire hazards, specifically ignitions resulting from spectators attending games. Draft EIR Section 4.7, Wildfire addresses the exposure of people and structures to wildfire risk and ignition potential onsite and in the surrounding area. 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, increasing the likelihood for human caused ignition, however there are several measures that will be implemented as part of the project that will reduce wildfire risk onsite and in the surrounding area. Vegetation management as part of the WVFMP within Strawberry Canyon and the surrounding area would reduce fuel load adjacent the project site and surrounding area. The vegetation treatments that have been implemented in recent years include the removal of dead trees 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. 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.

The comment also mentions concerns about spectators being hit by oncoming vehicles along Centennial Road during games. Traffic hazards resulting from the project were addressed under Impact TRA-1 and Impact TRA-3 in Draft EIR Section 4.6, Transportation. As described in Section 4.6, the 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. 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 is not expected to increase the frequency or severity of collisions.

However, the project would implement CBP TRAN-1 and MM-TRA-1. CBP TRAN 1 would provide adequate pedestrian, bicycle and emergency access within the project site including upgrading the existing sidewalk along the project frontage on Centennial Drive. MM-TRA-1 includes 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 to facilitate safe egress and ingress of spectators before and after typical and maximum events. As concluded in Draft EIR Section 4.6, the project would result in less than significant impacts resulting from conflict with policies related to transportation or the creation of a hazardous design.

With respect to prohibitions on leaving the softball field area and walking around outside of the fenced area, spectators and participants will enter and exit the proposed project via the entrance gate on Centennial Drive. Fencing surrounding the site will limit other pedestrian movements. After 10 p.m., the facility would be locked and not accessible. Alcohol may be served at the Softball Field and is not prohibited at softball games. UC Berkeley is a non-smoking campus and therefore smoking cigarettes and marijuana is prohibited, as under existing conditions.

C5-60 Comment. ALTERNATIVE ANALYSIS –

Edwards Field is a very large field and stadium and represents track and field in its heyday. Edwards Field is also located in the athletic quadrant, which is at the border of Downtown Berkeley and close to other student athletic programs. Redevelopment of Edwards Field would provide an excellent setting for our female student athletes. An attached photograph shows a vantage point near the site from a hotel restaurant in Downtown Berkeley.

Response. See Response to Comment B4-2 and Chapter 2, Revisions to Draft EIR, of this Final EIR.

C5-61 Comment. IN CLOSING, The natural beauty of Strawberry Canyon is gradually being eroded by increasingly dense use of the area by intercollegiate athletics, and by overly aggressive vegetation management. Much will be lost for future Californians if the current trends continue.

The site also poses hazards which seem to not have been taken seriously. Sheer luck has taken us this far and must not be squandered.

I am entirely in support of women's intercollegiate softball. What I object to is the location.

Response. The comment provides a closing remark; it makes general statements related to the condition of the project area that do not relate to specific Draft EIR analysis or conclusions. See Responses to Comments C5-2 through C5-60 for response to detailed comments.

Letter C6 Judi Sierra

C6-1 Comment. I opposed the Cal softball field renovation project as it currently is proposed. After reading the DEIR I believe there was inadequate assessment of nocturnal wildlife. The area was surveyed at 9AM for an hour and a half. I have driven east on Centennial between 4-5AM for 30 years and have noted a variety of wildlife adjacent to the two current fields both in the parking lot, crossing Centennial and moving along the road on the north side. This includes a resident fox pair, deer from one to five with young in the spring, skunk and raccoons. Great horned owls perched and call in the nearby trees. Increased human activity and especially the lighting will have a profound impact.

3. COMMENTS AND RESPONSES

Response. See Response to Comment C5-22 that addresses the commenter's concerns related to the reconnaissance-level field survey length. See Response to Comment C2-2 and C3-1 related to lighting, nocturnal wildlife, and habituation within the urban-wildlife interface. The proposed project would not change the use or lighting of the softball field between 4-5 a.m.

C6-2 Comment. Increasing the light pole height from the 5-53 ft. to 60-70 ft. and 20-30 ft. candle to 70 ft. candle is going to affect ambient light no matter how much it is shielded.

Response. See Response to Comment C2-2 and C3-1 related to lighting and impacts to wildlife. See also Responses to Comments B5-56 through B5-87 for detailed responses to comment on the Draft EIR lighting analysis.

C6-3 Comment. If the current situation with the football stadium lights on before dawn, blinding drivers, creating a huge safety issue as they come downhill, is any indication of how lights will be managed, I am doubly opposed.

Response. The comment speculates what hours the proposed project will use field lighting. The project does not propose to use softball field lighting before dawn. As specified in Chapter 3, Project Description and in the lighting analysis (Appendix D), the proposed project would update the existing field lighting system, which consists of unshielded high-pressure sodium floodlights, with a modern LED (light-emitting diode) system featuring improved light quality, increased mounting heights, reduced light trespass into adjacent areas, and additional shielding. The effect created by the proposed lighting will be less intense than the effect created by the existing lighting due to the downward, shielded orientation of the proposed lighting fixtures. As such, the proposed project's updated lighting will result in reduced impacts to drivers as compared to existing conditions.

C6-4 Comment. I can only support alternative 1, 3, or 4. However, lofty they are, sometimes all objectives can't be met.

Response. The comment states a preference for certain alternatives presented in the Draft EIR and is acknowledged. The comment also states that "sometimes all objectives can't be met." A lead agency has broad discretion in defining project objectives. Relevant case law provides that "CEQA does not restrict an agency's discretion to identify and pursue a particular project designed to meet a particular set of objectives." (*California Oak Foundation v. Regents of the University of California* (2010) 188 Cal.App.4th 227, 276.). CEQA Guidelines Section 15126.6(a) requires that an EIR describe a range of alternatives "which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." The alternatives cited as preferential by commenter do not meet the majority of the project objectives.

C6-5 Comment. I played Cal Women's intramural sports pre- Title IX and it was fine.

Response. The comment expresses an opinion about Cal Women's intramural sports and is acknowledged.

Letter C7 Katherine Calvert

C7-1 Comment. I don't think that enough study has been done to determine if the planned new nighttime lighting for the rugby and softball fields will affect the area's wildlife, especially the bird life, which includes various raptors that hunt after dusk.

I urge a delay until a full, detailed study can be performed by biologists and experts in artificial lighting and nature.

Response. This comment raises concerns around the effect of the project's lighting on the area's wildlife. See Responses to Comments C2-2 and C3-1 related to lighting, crepuscular, and nocturnal wildlife, and Response to Comment C5-22 regarding the EIR biologists' familiarity with and consideration of "the area's wildlife." Local bird life was fully considered in the analysis and the presence of nocturnal owls is assumed. Additional studies would not change the conclusions. Draft EIR Section 4.3, Biological Resources considered potential project impacts related to night lighting (see Subsection 4.3.3.3, Analytical Methods and Impact BIO-1 and Impact BIO-4). Dudek's expert biologists prepared the analysis in the Draft EIR and responded to comments in this Final EIR. Their resumes are attached as Final EIR Appendix D.

Letter C8 Sara Baldwin

C8-1 Comment. I write as a neighbor who overlooks the proposed softball field renovation. You can see my location here, along with the distance to the Greek theater as well as the softball field. [See Final EIR Appendix A, Public Comment on Draft EIR, for Letter C8 attachment.]

Response. The comment serves as an opening remark; it notes the commenter's home location in relation to the project site.

C8-2 Comment. Noise: I don't see in the DEIR that you addressed the acoustical effects of the canyon on noise travel. I don't see that anyone measured realistic sounds/music/bats cracking/broadcasting amplification on upper Mosswood road or Panoramic. The grade is very steep from the softball field to our residences, and i hear softball practices like they are next door. I can hum along to songs I know during Greek theater concerts and sometimes find the noise objectionable, even INSIDE my house. You can see that the softball field is 4x closer. It seems impossible for the future noise pollution to not be extremely onerous. Especially for days and nights in a row during the hosting of tournaments. If you add in the removal of a bunch of vegetation for the 100' buffer (destroying wildlife habitat), the noise will be worse.

Response. Topography was considered in the noise analysis for the proposed project. See Responses to Comments B5-40 and B5-41 for a discussion of topographic data inputs used in the SoundPlan model to predict resulting softball game noise levels at vicinity residences. As indicated in Draft EIR Section 4.5, Noise, the noise model does take into account the sound-attenuating effect of, barriers (walls and structures of the softball facility), vegetation, and topography. The fact that the commenter can hear music from the Greek theater is not related to this project.

C8-3 Comment. 100' buffer and VHFHSZ: I appreciate the attention to the VHFHSZ concern. However, I think much more analysis needs to be undertaken. Introducing up to 1500 partying people to a VHFHSZ approximately one day/night every two weeks (25 games per year) does not seem reasonable at all. I have spoken to an employee Berkeley City club and they say that traffic gets congested and the partying in the dorms is very disruptive. Good luck getting Emergency Services to access anyone on Panoramic Hill if there's a fire, especially if it happens to be when there's a concert at the Greek AND a softball game. Or if God forbid residents need to escape off of Panoramic hill.

Response. As indicated in Draft EIR Chapter 3, Project Description, the existing project site can currently hold up to 1,340 spectators, with the proposed project increasing capacity to 1,500. This expansion means an addition of only 160 spectator seats, contrary to the net increase suggested in the comments.

3. COMMENTS AND RESPONSES

The project also plans to accommodate up to 21 regular season softball events and a maximum of 4 post-season games, which is only one more than what could occur under assumed existing conditions (approximately 20 regular season games and unquantified post-season play), as described in Response to Comment B5-19. As further described in Response to Comment B5-19, there is no limit on the number of games that could be held at the project site under existing conditions. For example, in the current 2024 Cal women's softball season, there are 22 home games scheduled during the season, exclusive of any post-season play.

Regarding wildfire and evacuation concerns raised by the commenter, Draft EIR Section 4.7, Wildfire, provides an evaluation of potential project impacts related to wildfire and specifically refers to the wildfire protection plan prepared for the proposed project (see Draft EIR Appendix C), as well as the fire evacuation analysis prepared for the proposed project (see Draft EIR Appendix H). The fire evacuation analysis was performed to determine how long it would take for users and spectators of the Cal Softball Field, as well as the surrounding community to evacuate to nearby urban areas in case of a fire emergency. All proposed project impacts related to wildfire-related evacuation were determined to be less than significant.

Regarding the 100-foot buffer noted by the commenter, the requirement for maintenance of a 100-foot firebreak is provided for in UC Berkeley's CBP WF-1 and is in accordance with California Public Resources Code Section 4291 (see Draft EIR Section 4.7, Wildfire, Impact WF-2). Furthermore, Draft EIR Appendix H, Fire Evacuation Analysis, clarifies that the evacuation analysis does not include contra-flow lanes, reserving these lanes for emergency services such as first responders and law enforcement.

Alameda County, the City of Berkeley, and the UC Berkeley, have adopted the Genesys Evac (previously known as Zone Haven) system for evacuations. In case of an emergency, evacuation orders would adhere to the guidelines set out in the Emergency Operation Plans of the County, City, or UC Berkeley. The Emergency Operations Center would be activated during such events, with the incident commander designating evacuation zones and issuing orders only for those areas deemed at risk. See the Draft EIR Appendix H (Attachment A) to review a list of relevant reference documents.

C8-4 Comment. Flora and Fauna: I can't believe that the wood rat is the only animal that will be Adversely impacted. Between my house and the softball field, I've seen skunks, possums, raccoons, hundreds of deer, turkeys, nests of hawks, Nests of owls, hundreds of songbirds, foxes with babies, etc. your 100 foot buffer will certainly disrupt the quiet enjoyment of dozens of mammal species, not including humans.

Response. See Response to Comment C5-23 regarding expert biologists' consideration of other wildlife species and the Continuing Best Practices (CBP) summaries in the impact analysis regarding how measures would be implemented to avoid significant impacts to local wildlife. Most of these species are not rare, endangered, or threatened and the proposed project would not result in additional or significant adverse impacts to these species as compared to existing operations at the project site.

C8-5 Comment. Additionally, I see that nobody knows where the Strawberry creek culverts are? I also do not see where anybody is Addressing the fact that this field is on top of strawberry Creek.

Response. Draft EIR Section 4.3, Biological Resources (Impact BIO-3) evaluates the proposed project in relationship to Strawberry Creek. Specifically, the analysis indicates that 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 in Draft EIR Chapter 3, Project Description. Based on the design of the proposed project to achieve net zero runoff (see Chapter 3, Project Description), and the implementation of hydrological CBPs, the proposed project would not have a substantial adverse effect on protected wetlands and other aquatic resources related to increased sedimentation or erosion.

C8-6 Comment. Lighting: I don't see where anyone measured the lighting impacts on my neighborhood. The only mockup I see is someone on lower Mosswood envisioned what the facility would look like. My house overlooks the field, my neighbors house overlooks the field. It might be possible that I will actually see 85 foot towers of lights. Plus, I cannot imagine the sky glow being reduced. This very much concerns me and my neighbors.

Response. See Response to Comment B5-56 for a description of the representative receptor sites evaluated in the Draft EIR, which indicates that vertical light spill results at other homes would be less than the results presented in the lighting analysis based on the narrow, downward-focused condition of the proposed lighting system. See Response to Comment B5-60 for an analysis of skyglow, which indicates that skyglow would be reduced with the proposed project.

Letter C9 Michael Kelly

C9-1 Comment. Dear Ms. Patil, the local residents of Panoramic Hill have many areas of concern regarding the proposed construction of a new Softball Field adjacent to our neighborhood, below are comments on just two of those issues of concern.

Response. The comment serves as an opening remark. The comment is acknowledged. As explained throughout the Draft EIR, the proposed project is the renovation of an existing softball field, not construction of a new softball field, as stated by the commenter.

C9-2 Comment. As a starting point in discussing cumulative impacts of this and other UC projects in the area it is relevant to first understand that many residents of Panoramic Hill in the area that borders the proposed project have lived in the neighborhood for decades. For example on Canyon Road, Mosswood Road and the near end of Arden Road there are at least 16 homes where the residents first moved into the neighborhood between 1963 and 1993.

The year 1993 was chosen in this discussion because that year represents the beginning of the modern expansion and intensification of use of the Strawberry Canyon area which continues to this day and of which the proposed project is a continuation.

For the 16 households which lived in the area in 1993 here is a simple factual description of the baseline activities which were experienced by nearby neighbors. At that time there were no intercollegiate sports activities in the immediate project area or the adjoining Rugby complex area. Historically, the project area

was used mostly during daytime hours for intramural student activities such as frisbee, soccer, or other games. In the northwest corner of the area were several tennis courts. Low level incandescent lighting was used on the field and tennis courts. There were no public address systems nor amplified music in this area; the most noticeable noise generation was often the sound of tennis balls being hit at the tennis courts.

Response. The comment provides a history of development and uses in the project area. The comment implies that the cumulative impacts of development of the Strawberry Canyon area since 1993 should be analyzed. See Responses to Comments C4-1 and C4-5 for a discussion of cumulative impacts. See also Responses to Comments B5-2, B5-6, B5-19, and B5-50 for a discussion of the appropriate baseline used in the environmental analysis. As explained in the 1992 IS/ND (Section 3.6) prior to the 1992 Project, the softball field was “equipped with an amplified sound system which is used for playing music during pre-game practice and for announcements during softball competitions. The speakers are aimed upward and broadcast sound widely outward, exposing nearby residents to these amplified sounds.”

C9-3 Comment. California Memorial Stadium (CMS) during this time period typically held seven or fewer daytime football games per year. Night games were rare and when they did occur temporary lights were brought in on trucks. According to the Campus’ records, only seven night games total had ever been played up until the mid 1990s. Use of the public address system in the stadium was rare outside of football games. Noise generation from programatic [programmatic] daily use of CMS before 1993 was significantly less at that time, music or PA use was significantly lower, no music was played during practices for example. Nighttime use of CMS was very modest.

Response. The comment provides additional information related to the historical use of California Memorial Stadium, specifically related to its lighting and public address systems. The comment does not relate to analysis or impact conclusions of the Draft EIR.

C9-4 Comment. The combined sports facilities in the Strawberry Canyon area have experienced a repeated intensification of use since approximately 1993. The facilities in this area include, California Memorial Stadium (CMS), the Student Athlete High Performance Center, Maxwell Family Field, Witter Rugby Field, Strawberry Softball Field and the Hass Clubhouse / Strawberry Canyon Pool Facility.

Each of these facilities has generated substantial programatic [programmatic] increases in use over the past 30 years, with the exception of the Strawberry Pool. Of particular significance for local neighbors are the increases in noise, light/glare, and traffic due to increased use of the facilities. It would be possible for the Campus to track the increased impacts on local residents by reading the comment letters which neighbors have submitted to all of the CEQA project studies in the area since 1993.

Response. The comment raises concerns about programmatic increases in use of sports facilities in Strawberry Canyon over the past 30 years. Impact analyses under CEQA use existing conditions as the baseline, rather than conditions that may have existed in the environment at some distant point in history. Draft EIR Section 4.2, Aesthetics and Section 4.5, Noise include cumulative sources of lighting and noise in these analyses, including those associated with the adjacent Witter Field. See also Responses to Comments B5-50 and C9-6.

C9-5 Comment. Over that time period; Maxwell Family Field has been redeveloped twice, Witter Rugby Field has had three separate construction, expansion or upgrade projects, the Student Athlete High Performance Center was constructed and upgraded, CMS experienced a massive reconstruction and expansion, later

including the addition of the Korea Visitor center, and finally the Strawberry Softball Field was constructed, has had subsequent additions and now has the proposed expansion project which we discuss here. Accompanying all this expansion has been ever increasing noise, glare and traffic.

In many of the comments submitted to the campus for previous projects you will encounter statements that residents felt overwhelmed by the increases that had already occurred. Essentially stating - “There is too much noise and glare already! How can you possibly be proposing to add more?”

Response. The comment provides a history of past development in the project area and makes reference to comments submitted on previous projects. See Response to Comment C9-6 that addresses the commenters specific comments related to cumulative impacts.

C9-6 Comment. Having described the existing state of affairs we now turn to the cumulative impacts analysis section of the DEIR.

Section 4.1.2.2 of the DEIR begins by stating;

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.

The DEIR goes on to state that:

This EIR uses a list-based approach for the development of the cumulative projects.

What follows in the DEIR is a table of 31 “Projects”, but that table ONLY INCLUDES current and future projects; no past projects in the Strawberry Canyon Sports complex are included, furthermore, none of the programmatic increases in use of the nearby facilities is considered as part of an assessment of cumulative impact.

Response. See Response to Comment C4-5. The commenter states that the use of existing athletic facilities, such as California Memorial Stadium, Maxwell Family Field, Witter Rugby Field, and the Strawberry Canyon Recreation and Pool, should be considered as part of the cumulative impact analysis included in the Draft EIR. The use of these facilities, and associated traffic conditions, are considered part of the baseline existing condition in the analysis for transportation and wildfire impacts (Draft EIR Sections 4.6, Transportation and Section 4.7, Wildfire); therefore, impacts related to transportation and wildfire were analyzed considering the use of the existing facilities. Events held at California Memorial Stadium do not overlap with events at the Cal Softball Field; therefore, cumulative lighting, glare, and noise impacts involving California Memorial Stadium were not specifically assessed in the Draft EIR. The Strawberry Canyon Recreation and Pool closes at 6 p.m.; the use of these facilities does not involve lights or generate significant noise. Finally, the use of Witter Rugby Field, which is located adjacent to the Cal Softball Field, has the potential to have overlapping events that could result in cumulative lighting, glare, and noise impacts. These impacts are addressed in the Draft EIR Section 4.2, Aesthetics and Section 4.5, Noise.

C9-7 Comment. Even though the Campus clearly understands that incremental increases in the noise, glare and traffic increase are a major issue in the area; as acknowledged on page 1-6 of the Executive Summary:

1.6 KNOWN AREAS OF CONTROVERSY

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.

Response. The comment, which provides an excerpt of Draft EIR Section 1.6, is acknowledged. The “Known Areas of Controversy” identified in this section, as noted therein, are “concerns that are likely to generate the greatest interest based on the input received during the scoping process.” As explained *Taxpayers for Accountable School Bond Spending v. San Diego Unified School Dist.* (2013) 215 Cal.App.4th 1013, 1042, “[c]ontrary to Taxpayers's assertion, the testimony of a community member that ‘we want to come home to peace and calm, not bright lights and noise’ does not constitute substantial evidence showing the lighting may have a significant effect on the environment. Under CEQA, the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons.” The Draft EIR has addressed these topics within Draft EIR Section 4.2, Aesthetics, Section 4.3, Biological Resources, Section 4.4, Cultural and Tribal Cultural Resources, Section 4.5, Noise, Section 4.6, Transportation, and Section 4.7, Wildfire.

- C9-8** Comment. It is our belief that this DEIR fails in its requirement to assess Cumulative Impacts because it does not include any previous projects in the area as part of its cumulative impact analysis, nor does it include the sometimes substantial un- acknowledge or un-assessed programatic [programmatic] increases in use in the area. We believe the campus needs to update this DEIR cumulative analysis by including the information and assumptions made in previous projects.

Response. See Responses to Comments C9-4 through C9-6.

- C9-9** Comment. There is a substantial grouping of homes near the project site, none of which are included as receptor sites in the lighting and glare analysis. The analysis chose four “receptor sites”, three of which are random spots in the woods and the fourth location is in a parking lot. None of the receptor sites are representative of actual receptors ie, neighbors whose bedrooms face the proposed project.

The analysis focuses on wooded areas and uses maps which obscure the presence of homes in the area.

For example, here is a section of the map include in the DEIR appendices showing positions of the “receptor sites” for glare analysis. [See Final EIR Appendix A, Public Comment on Draft EIR, Letter C9 for referenced map.]

Response. Receptor Sites A and C were specifically selected to provide context to the project site from the nearest residential lots, and the measurements were taken from the public street immediately adjacent to those residential lots. Both Receptor Sites A and C represent measurement points as close to “neighbors whose bedrooms face the proposed project” as was viable from the public right-of-way. Receptor Site B is located along the walking path to provide analysis relevant to the project’s impact on the wooded area. As explained in Response to Comment B5-56, the proposed project would have a less than significant impact on light spill, with or without the shielding effect of the existing vegetation. Additionally, the glare analysis conservatively assumed no reduction in glare based on obstructions from mature trees and vegetation between the lights and receptors.

- C9-10** Comment. Checking the photo provided in the DEIR for site “C” reveals that this map incorrectly identifies the actual physical location of site “C”, which according to the photo is actually many yards further north. An accurate map would show site “C” approximately as shown in the version we have updated below. [See Final EIR Appendix A, Public Comment on Draft EIR, Letter C9 for referenced map.]

Response. No measurements were taken from private property. Receptor Site C is properly noted in the EIR as being located on the roadway. The map in the DEIR is correct.

- C9-11** Comment. The map used by the Campus here is also very hazy in its depiction of homes in the area. Below is a version of this map with homes included. The homes which may have a view of the project are shown in red. [See Final EIR Appendix A, Public Comment on Draft EIR, Letter C9 for referenced map.]

Response. The map overlay of buildings is transparent to allow the contour lines to be evident as well, indicating the steep grade. While many of those homes may have a line of view to the project, see the Responses to Comments B5-56 which addresses the potential views from those homes.

- C9-12** Comment. The analysis also fails to anticipate or address the direct views of the new lighting poles and units which would be part of the project.

For example, the current lighting poles at the site are approximately 50 feet in height, while the new poles will be of 70 to 90 feet in height. Below is a rough simulation of the difference in height, with two new poles roughly placed at approximately 80 feet in height for quick reference. [See Final EIR Appendix A, Public Comment on Draft EIR, Letter C9 for referenced simulation.]

This change in elevation of light sources will put these lighting units in direct view of many neighbors.

Response. The analysis does account for the increased height of the new lighting poles. See Response to Comment B5-65. While the proposed lighting poles will indeed be taller, they will be significantly more focused downward with improved shielding. Therefore, nearly all of the views will be of the outside of the luminaires (the housing) and not of the light-emitting apertures. The “rough simulation” presented by the commenter does not appear to have accurately scaled representation while the technical analysis does include accurate scaling. The analysis shows that the new lighting will result in less than significant light and glare impacts from the maximally impacted receptors, as further described in Response to Comment B5-56.

3. COMMENTS AND RESPONSES

C9-13 Comment. Just as an initial example, let's take a real world look at how the elevation of the new lights facing the hillside will line up in relation to the elevation of homes and bedrooms on the hill.

The general elevation of the softball project is 495 feet above sea level. Therefore, the new lights will be an elevation of 565 to 585 feet.

Bedrooms facing the canyon at 37 Mosswood are at approximately 595 feet. Bedrooms at 29 Mosswood facing the canyon are at approximately 580 feet. Bedrooms at 21 Mosswood are at approximately 570 feet.

The direct view of new lighting is never acknowledged or studied in the DEIR.

Response. The direct view of the lighting is indeed captured in the Draft EIR Section 4.2 Aesthetics (and Appendix D) Receptor Sites A and C. Receptor Site A is located in the public right-of-way between 67 Canyon Road and the project site. Receptor Site C is located at the end of Mosswood Road, in the public right-of-way between Arden Path and the private drive that appears to serve 44 Mosswood Road. As shown in the Draft EIR, the direct line-of-sight to the luminaires from those locations does not exceed the threshold of significance.

C9-14 Comment. We look forward to an updated document that addresses these issues.

Response. The comment serves as a closing remark that is interpreted as requesting an updated EIR. See also Response to Comment B3-13 for information about what triggers the need to recirculate a Draft EIR.

4. Mitigation Monitoring and Reporting Program

Section 15097 of the California Environmental Quality Act (CEQA) Guidelines requires that, whenever a public agency approves a project based on a mitigated negative declaration or an environmental impact report (EIR), the public agency shall establish a mitigation monitoring and reporting program to ensure that all adopted mitigation measures are implemented.

This mitigation monitoring and reporting program (MMRP) has been prepared for UC Berkeley Cal Softball Field Renovation Project (project or proposed project). This MMRP is intended to be used by the University of California, Berkeley (UC Berkeley or the university), its contractors and mitigation monitoring personnel to ensure compliance with mitigation measures during project construction and implementation. Mitigation measures identified in this MMRP were developed during the preparation of the Draft EIR prepared for the proposed project.

The EIR for the proposed project presents a detailed set of mitigation measures required for implementation. As noted above, the intent of the MMRP is to ensure the effective implementation and enforcement of all adopted mitigation measures. The MMRP includes all mitigation measures identified in the Draft EIR and, for each measure, the party responsible for implementation and monitoring, timing implementation, and monitoring action and frequency are provided in Table 4-1 4-1).

4. MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 4-1. MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implementing Party	Implementation Timing	Monitoring Party	Monitoring Action	Monitoring Frequency
<i>Biological Resources</i>					
<p>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:</p> <ul style="list-style-type: none"> ▪ 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. 	Capital Projects, future project contractors, construction crews, and qualified biologist	Prior to vegetation removal or demolition	Project Manager, Capital Projects and Office of Physical & Environmental Planning, Office of Environment, Health & Safety	Confirm conformance	Once prior to each time vegetation is removed and/or prior to demolition
<i>Cultural Resources</i>					
<p>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:</p> <ul style="list-style-type: none"> ▪ 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: <ul style="list-style-type: none"> ○ All soil disturbing work within 35 feet of the find shall cease. 	Capital Projects, future project contractors, construction crews, and qualified archaeologist	<p>Confirm contractors are notified of procedures prior to ground disturbance</p> <p>Implement measure during construction</p>	Project Manager, Capital Projects and Office of Physical & Environmental Planning	Confirm conformance	During regular site inspections

TABLE 4-1. MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implementing Party	Implementation Timing	Monitoring Party	Monitoring Action	Monitoring Frequency
<ul style="list-style-type: none"> ○ 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. 					
Noise					
<p>MM NOI-1: Construction Noise. The proposed project shall implement the following measures related to construction noise:</p> <p>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.</p>	Capital Projects, future project contractors and construction crews	<p>Prior to construction</p> <p>During construction and demolition</p>	Capital Projects and Office of Environment, Health & Safety	<p>Include requirements in construction specifications and contracts</p> <p>Confirm conformance</p>	During regular site inspections

4. MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 4-1. MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implementing Party	Implementation Timing	Monitoring Party	Monitoring Action	Monitoring Frequency
<ul style="list-style-type: none"> 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. 					
<i>Transportation</i>					
<p>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:</p> <ul style="list-style-type: none"> Stadium Rim Way (north of Centennial Drive) 	Capital Projects, Project Architect, and California Golden Bears Athletics	<p>Prior to construction</p> <p>During installation</p> <p>Ongoing</p>	Capital Projects	Monitor implementation of pedestrian safety measures	Ongoing

TABLE 4-1. MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Implementing Party	Implementation Timing	Monitoring Party	Monitoring Action	Monitoring Frequency
<ul style="list-style-type: none"> ○ 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. <ul style="list-style-type: none"> ■ Stadium Rim Way/Canyon Road (south of Centennial Drive) <ul style="list-style-type: none"> ○ 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 <ul style="list-style-type: none"> ○ 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. <p>With the discretion of IA, a temporary crossing guard may be used to facilitate pedestrian traffic during maximum events.</p>					

4. MITIGATION MONITORING AND REPORTING PROGRAM

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APPENDIX A

**Public Comments
on the Draft EIR**



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January 29, 2024

UC Berkeley Cal Softball Field Renovation Project Draft EIR
 Shraddha Navalli Patil, Senior Planner
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 University of California, Berkeley
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 Berkeley, CA 94720-1382

SUBJECT: Alameda CTC Comments on the Draft Environmental Report (Draft EIR) for the University of California, Berkeley (UC Berkeley) Cal Softball Field Renovation Project

Ms. Navalli Patil,

Thank you for the opportunity to comment on the UC Berkeley Cal Softball Field Renovation Project Draft EIR.

The project consists of renovating and improving the existing 40,000 square foot Cal Softball Field to meet modern safety and competition standards and to support campus compliance with Title IX of the Education Amendments of 1972 through the provision of equitable athletics facilities for male and female student athletes. The use of the softball facility would remain similar to its current uses, but the project will increase the number of spectator seats from 1,340 to 1,511, install a press box, spectator concourse, replacement competition-grade lights, restrooms, public address system, expanded playing field dimensions, team locker rooms, a ticket booth, improved training facilities, entry plaza, landscaping, sustainable design features, access and bus stop improvements, and utilities. The project will remove approximately 85 parking spaces and retain 25 parking spaces in the exiting Witte Lot. The project also includes the implementation of a game-day transportation demand management plan and a project-specific wildfire protection plan.

A1-1

The project site comprises approximately 3 acres and is located on the campus of the University of California, Berkeley within the Hill Campus area. The project is bounded to the north by Centennial Drive; to the northeast by Strawberry Canyon Recreation Area; to the west by Witter Rugby Field; and to the south by a densely wooded area and the Panoramic Hill neighborhood beyond.

Alameda CTC understands that UC Berkeley is constitutionally exempt from local government regulations when using property under its control and in furtherance of its educational purposes. However, since the proposed project would add vehicles to Berkeley roadways, the project sponsor has considered the City of Berkeley's transportation policies in its evaluation of whether the project conflicts with a program, policy, or plan that addresses the circulation system. Alameda CTC, the Congestion Management Agency and Transportation Improvement Authority for Alameda County, comments on projects that are likely to generate over 100 trips pm-peak trips, which are subject to review under the Land Use Analysis Program (LUAP) of the Congestion Management Program (CMP). The proposed project expansion would appear to generate over 100 additional pm-peak trips; Therefore, Alameda CTC respectfully submits the following comments:

A1-2

Congestion Management Program (CMP) Review

- SB743 changed the metric used to evaluate the effects of a proposed land use projects on the transportation network, the County Congestion Management Program (CMP) legislation still requires project sponsors to evaluate the effects of the project on the CMP network of roads outside of CEQA. In general, project sponsors have met this requirement by producing a memorandum separate from the CEQA document and submitting it to Alameda CTC. The CMP Roadways near the project include:
 - Telegraph Avenue
 - Bancroft Way
 - Shattuck Avenue
 - University Avenue

A1-3

Use of Countywide Travel Demand Model

On page 4.6-33, the DEIR states that the Alameda CTC Travel Demand Model may not be capable of analyzing a sporting event that would vary in intensity and which provides a small number of regional vehicle trips. As a result, estimation of VMT generated by project was performed qualitatively per Section 15064.3 Subdivision (b)(3) of the OPR Technical Advisory. While the analysis is conservative, the project impact is considered significant and unavoidable, even with the implementation of mitigation measures.

A1-4

Transportation Demand Management Program

Alameda CTC appreciates that the project sponsor would keep on implementing University Continuing Best Practices during the construction and operations of the project as stated in Appendix B: University Continuing Best Practices, which includes air quality and transportation best practices that would help increase the use of alternative modes of transportation to access the project on game days.

A1-5

Bike and Pedestrian Plans

The City of Berkeley is home to several [Countywide Bikeways Network](#) corridors in the vicinity of the project: Bancroft, Telegraph, Hillegass, and Milvia. The Alameda CTC Commission has adopted a policy requiring bike infrastructure on the Countywide Bikeways Network and funded by Alameda CTC discretionary sources to meet an All Ages and Abilities (AAA) standard. This new standard provides heightened levels of safety for bicycle riders of all skill levels.

A1-6

Alameda CTC is pleased to learn that the project sponsor will improve pedestrian access to the project as stated on page 4.6-29. These improvements include: Replacing of missing bollards along the stadium side for the road, implementation of wayfinding signage from the stadium garage to the Cal Softball field, painting pavement pedestrian markings and rumble strips, implementation of stop signs, removal of vegetation along the route to the stadium, and the possibility of using a temporary crossing guard on game days.

Cumulative Transportation Impacts

According to the qualitatively VMT analysis, even with proposed project mitigation (Impact TRA-1), the cumulative impact would remain significant and unavoidable as stated on page 4.6-37. However, Alameda CTC encourages UC Berkeley to continue working with the City of Berkeley and with AC Transit and BART in coordinating ways to promote and encourage the use of sustainable travel modes as an ongoing practice for university operations and for special events, such as women's softball games. Implementation and monitoring of TDM measures, updates to Pedestrian and Bicycle Master Plans,

A1-7

Shraddha Navalli Patil,
January 29, 2024
Page 3

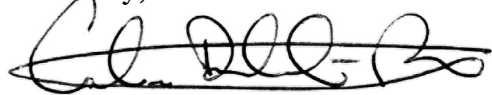
parking management programs, and other pricing strategies are some of the tools available to project sponsors to curb VMT generated by projects.

↑ A1-7
| Cont.

Thank you for the opportunity to comment on this DEIR. Please contact me at (510) 208-7400 or Aleida Andrino-Chavez at (510) 208-7480 if you have any questions.

↑ A1-8

Sincerely,

A handwritten signature in black ink, appearing to read "Colin Dentel-Post", written over a horizontal line.

Colin Dentel-Post
Principal Planner

cc: Aleida Andrino-Chavez, Associate Transportation Planner



Planning Departmental <planning@berkeley.edu>

Softball Field Renovations - EIR

Dean Metzger <drm1a2@sbcglobal.net>
Reply-To: Dean Metzger <drm1a2@sbcglobal.net>
To: "Planning@berkeley.edu" <planning@berkeley.edu>

Sat, Jan 27, 2024 at 9:13 AM

Attachment

Claremont Elmwood Neighborhood Association
PO Box 5108
Berkeley, CA 94705
info@claremontelmwood.org
www.claremontelmwood.org

January 27, 2024

Chancellor Carol Christ
University of California, Berkeley
Berkeley, CA

Ref: Draft EIR Comments: "UC Berkeley Cal Softball Field Renovation Project"

Dear Chancellor Christ,

The Claremont Elmwood Neighborhood Association is writing regarding the environmental impacts which would result from implementation of the Cal Softball Field Renovation Project.

Located in the part of Berkeley which is most difficult for the public to access, the proposed project is located on the east side of Memorial Stadium and is accessed by Stadium Rim Way and Centennial Road. Centennial Road runs the length of the canyon and connects to Grizzly Peak at the top of the Berkeley hills along the ridge.

The implications of this location for the project site means that every spectator, every vendor, and anyone associated with any aspect of construction or operations, must travel through a Berkeley neighborhood to access the site.

CENA has a particular interest in how construction traffic will access the project site. As described in the DEIR, construction vehicles "would use designated City of Berkeley truck routes, along ... Piedmont Avenue, Warring Street, Derby Street, and Belrose Avenue ..." (City of Berkeley, 2017b) all of which are located in CENA neighborhoods. Yet with reference to Designated Truck Routes, and contrary to the implication in the DEIR, any vehicle with tonnage over 3 tons would be prohibited from using these thoroughfares.

Event spectators will have to access the new softball field the same way as the construction vehicles.

B1-1

B1-2

B1-3

The Draft EIR also states that it will follow the City of Berkeley's General Plan Transportation Element. Yet the proposed project does not "improve (the) quality of life in Berkeley neighborhoods by calming and slowing traffic on all residential streets." It increases traffic on the few corridors which can be used for ingress and egress to the project site.

B1-4

We also note the increase in vehicle miles traveled (VMT). For each game, there are 316 new vehicle trips. We also note that there are more games overall, and that there will be night games where none exists now. Night games extend to 10:00 pm, and traffic will be leaving the isolated location and leaving Berkeley for some time afterward.

B1-5

As conditions exist currently, 95% of the spectators arrive at the site by vehicle. The University anticipates reducing that high volume while using continuing best practices. However, the best practices are designed for Cal faculty, staff, and students who commute to campus. The interventions are untested on spectators and thus not established as a best practice with empirical evidence of predictive effect.

B1-6

Ideally, an alternative would be found that would produce less hardship on residential neighborhoods, which provide an important foundation for building healthy families, safe communities, and good citizenship.

B1-7

Thank you for consideration of these concerns. We hope the DEIR will be revised accordingly.

Sincerely,

Dean Metzger
President
Claremont Elmwood N.A.



UCB Softball Field Renovation 2024.rtf

30K



CLAREMONT ELMWOOD

NEIGHBORHOOD ASSOCIATION

Claremont Elmwood Neighborhood Association

PO Box 5108

Berkeley, CA 94705

info@claremontelmwood.org

www.claremontelmwood.org

January 27, 2024

Chancellor Christ Carol
University of California
Berkeley, CA

Ref: Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project"

Dear Chancellor Christ,

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B1-8

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CENA has a particular interest in how construction traffic will access the project site. As described in the DEIR, construction vehicles "would use designated City of Berkeley truck routes, along ... Piedmont Avenue, Warring Street, Derby Street, and Belrose Avenue (City of Berkeley 2017b)..."(City of Berkeley, 2017b) all of which are located in CENA neighborhoods. Yet with reference to Designated Truck Routes, and contrary to the implication in the DEIR, any vehicle with tonnage over 3 tons would be *prohibited* from using these thoroughfares.

B1-9

The Draft EIR also states that it will follow the City of Berkeley’s General Plan Transportation Element. Yet the proposed project does not “improve (the) quality of life in Berkeley neighborhoods by calming and slowing traffic on all residential streets.” It increases traffic on the few corridors which can be used for ingress and egress to the project site.

|
B1-10
|

We also note the increase in vehicle miles traveled (VMT). For each game, there are 316 new vehicle trips. We also note that there are more games overall, and that there will be night games where none exists now. Night games extend to 10:00 pm, and traffic will be leaving the isolated location and leaving Berkeley for some time afterward.

|
B1-11
|

As conditions exist currently, 95% of the spectators arrive at the site by vehicle. The University anticipates reducing that high volume while using continuing best practices. However, the best practices are designed for Cal faculty, staff, and students who commute to campus. The interventions are untested on spectators and thus not established as a best practice with empirical evidence of predictive effect.

|
B1-12
|

Ideally, an alternative would be found that would produce less hardship on residential neighborhoods, which provide an important foundation for building healthy families, safe communities, and good citizenship.

|
B1-13
|

Thank you for consideration of these concerns. We hope the DEIR will be revised accordingly.

Sincerely,

Dean Metzger
President
Claremont Elmwood N.A.



Planning Departmental <planning@berkeley.edu>

Request for Reference in Softball DEIR

4 messages

Michael Lozeau <michael@lozeaudrury.com>
To: UC Berkeley Planning <planning@berkeley.edu>

Sat, Jan 27, 2024 at 12:48 PM

Dear Berkeley Planning,

At page 4.5-23 of the DEIR circulated for the Cal Softball Field Renovation Project, it references "applicable research papers presented at the 2011 Institute of Noise Control Engineers (INCE) national conference (Hayne et al., 2011)." The referenced papers are not listed in the DEIR's references section. Do you have a copy of the referenced papers that I can arrange to copy on Monday, January 29, 2023? Or, even better, can you please e-mail me a copy of the referenced papers?

B2-1

Thank you for your assistance,

Michael R. Lozeau
Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, California 94612
(510) 836-4200
(510) 836-4205 (fax)
michael@lozeaudrury.com

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply e-mail Michael@lozeaudrury.com, and delete the message.

UC Berkeley Planning <planning@berkeley.edu>
To: Shraddha Navalli <shraddha@berkeley.edu>

Mon, Jan 29, 2024 at 11:08 AM

[Quoted text hidden]

Physical and Environmental Planning
300 A&E Building
UC Berkeley

website: capitalstrategies.berkeley.edu
phone: (510) 643-4793
email: planning@berkeley.edu

1/29/24, 6:19 PM

UC Berkeley Mail - Request for Reference in Softball DEIR

Mon, Jan 29, 2024 at 11:24 AM


UC Berkeley Planning <planning@berkeley.edu>

To: Michael Lozeau <michael@lozeaudrury.com>

Bcc: Alison Krumbein <Alison.Krumbein@ucop.edu>, Shraddha Navalli <shraddha@berkeley.edu>

Michael,
See attached information per your request.

Thank You,
[Quoted text hidden]
[Quoted text hidden]

 **Hayne et al 2011.pdf**
749K

Michael Lozeau <michael@lozeaudrury.com>
To: UC Berkeley Planning <planning@berkeley.edu>

Mon, Jan 29, 2024 at 11:46 AM

Thanks very much.
[Quoted text hidden]
--
[Quoted text hidden]



January 29, 2024

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

By Email to: planning@berkeley.edu

Subject: Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project

Dear Gentlepersons:

This is our comment letter regarding UCB's above-entitled Draft Entitled Environmental Impact Report (DEIR). The Berkeley Architectural Heritage Association (BAHA) is a nonprofit with over 1,000 members. BAHA's mission is to promote, through education, an understanding and appreciation for Berkeley's history, and to encourage the preservation of its historic structures and cultural resources. Incorporated on December 9, 1974, the organization has been active since 1971.

B3-1

The DEIR is inadequate because it fails to discuss the impacts of the above-entitled proposed project on the cultural and historical Strawberry Canyon, and on the Panoramic Hill Historic District (PHHD), the latter of which is listed in the National Register of Historic Places (NRHP). (See Attachment – Application and Grant of NRHP status.) While UCB has good intentions in wishing to improve its softball field for women, it overlooks the

B3-2

damage that it is creating on these two significant cultural and historic gems. The renovation is anything but that, and the new field's size and operations will detract from them. The DEIR also fails to adequately consider less deleterious alternatives, other than moving the playing field to Albany. It must be revised after considering the proposed project's aesthetic, historic and cultural impacts beyond potential archaeological artifacts and it must then be recirculated for public comment.

↑ B3-2
Cont.

B3-3

The failure to respect, maintain, and preserve historic and cultural items belonging to the People of the State of California and in trust under UCB's control is a longstanding problem that BAHA has brought to the current Administration's attention on numerous occasions. The excuse of funding limitations rings hollow because of the Administration's history of poor financial management leading to extreme cost overruns, especially in pursuit of more and expanded sports activities. The stadium is the most recent major example of poor planning. All of these failures relate to UCB's prioritizing sports competition over the university's core function to educate high school graduates for a more productive state, country, and world. That is UCB's strength and value, not competing with other colleges on winning softball games.

B3-4

The DEIR repeatedly quotes the UCB chancellor as troubled about women having unequal access to the same softball field experience as the men. The proposed project is allegedly necessary because the current facility does not meet NCAA standards and the project would provide various amenities including more softball intercollegiate competitions, capacity for television broadcasting, seating for 1,500, a press box, and the like. While the DEIR bills the project as "renovation," it appears totally disconnected from the original field, which UCB strangely finds unusable. More significantly, the DEIR overlooks the project's negative impacts on the adjacent Strawberry Canyon (Canyon), and on the PHHD.

B3-5

B3-6

Prior UCB Administrations' preservation values were decidedly different from those of the current chancellor and UC corporate management. The educated public and UCB professors understood the high value of the Canyon and PHHD for the benefits that they bestowed on the community, including UCB students. The DEIR fails to examine the project's impacts that will negatively impact both.

B3-7

/

A. The DEIR Failed to Consider Protecting the Canyon and the PHHD From the Proposed Project's Negative Impacts

UCB (formerly the College of California) hired Frederick Law Olmsted in 1865 to lay out the Berkeley Property Tract for a gracious residential neighborhood adjacent to the campus. After visiting the Canyon, he identified the mountain gorge and flowing creek waters as nearby scenic amenities:

As this road follows a stream of water from the open landscape of the bay region into the midst of the mountains it offers a great change of scenery within a short distance, and will constitute a unique and most valuable appendage to the general local attractions of the neighborhood.

Janice Thomas, then BAHA President provided a history of the Canyon from Olmsted's 1865 visit to 2005:

http://berkeleyheritage.com/berkeley_landmarks/strawbcanyon.html. The history chronicles the Canyon's benefits through the eyes of Berkeley residents who recorded it periodically for over 150 years. It describes the views on all sides of the canyon including the Golden Gate, fire trails that open into nature and that offer "tranquility and inspiration" leading completely away from city life, the creek with its multiple tributaries, and the many diverse trees and plants.

Even UCB's own website discusses the importance of protecting the Canyon's creek:

Strawberry Creek is a major landscape feature of the University of California, Berkeley, and a primary reason the site was chosen in the 1860s as the location for the campus. More than 3,000 university students, and many elementary and high school students from surrounding communities, use Strawberry Creek each year as a resource for education and research. (<https://creeks.berkeley.edu/creeks-and-watersheds/strawberry-creek>.)

Despite the Canyon's admitted benefits, the DEIR contends that an adjacent, made-for-streaming, loud (22 speakers all around the field), and glaring light enough to cancel the view of stars is a necessity. Frederick Law

B3-8

B3-9

Olmsted would be shocked by such an assertion and the public should be as well.

↑ B3-9
Cont.

In 2022, The Cultural Landscape Foundation (TCLF) honored the bicentennial of Frederick Law Olmsted, Sr.'s birth (1822-1903), the father of landscape architecture. It featured examples of Olmsted designed parks facing multiple threats including "inappropriate change or even erasure." (<https://www.tclf.org/sites/default/files/microsites/landslide2022/introduction.html>.) In TCLF's article, "Landslide 2022," it discussed the ways that important cultural and historic landscapes like the Canyon here are being destroyed, despite the original conservation values that went into preserving them for over 150 years.

TCLF notes that expanding or placing institutional structures adjacent to parks is one way that public entities damage or destroy them. The Canyon, like many parks, was left alone primarily for respite and passive enjoyment by UCB and Berkeley's citizens over the decades. The Stadium, as the first large encroachment into the Canyon, was highly controversial from the very beginning in 1921 due to the damage that it created for Berkeley residents who valued the open space and beauty of the then untouched Canyon. (See article by BAHF past President and local historian Susan Cerny (1940-2016) "Memorial Stadium – controversial from the start," http://berkeleyheritage.com/berkeley_observed/berkeleyobserved90203.html.)

B3-10

Like other significant parks, including those designed by Olmsted, the Canyon is now coming under pressure again to support a new, greatly expanded university use. "Urban parks, which Frederick Law Olmsted, Sr., called "green lungs," were initially conceived as democratic spaces that were free and open to all. They were also part of the social contract between the public and the municipalities or other governmental organizations that built and maintained the parks." (TCLF article.) Here, the university is failing to meet its stewardship obligation to avoid expanding physically and operationally a softball field in such close proximity to the Canyon.

B3-11

In its article, TCLF also discusses that another way to damage or erase parks is through diminished or lost connectivity:

Connectivity is unfettered access for all and the ability to participate in dedicated communal public space. Connectivity was a core value of Frederick Law Olmsted, Sr., and his successors, as demonstrated in hundreds of projects throughout

the nation. Neighborhood parks and park systems were created to be places for easy and unfettered access, also serving as the connective tissue within and between neighborhoods.

B3-11
Cont.

In the application for listing in the NRHP, the authors explained the history of how the PHHD connected with the Canyon and how they each contributed to the other:

At the time of the neighborhood's beginning, the floor of Strawberry Canyon was known as Strawberry Valley, and Strawberry Creek flowed through the canyon above ground. Then, a "beautiful natural place", the creek has since been culverted and the ravine filled. The University's Botanical Gardens were also in the vicinity. The properties located at 1, 9, and 15 Canyon Road were sited so as to benefit from these amenities as much as for the panoramic views. Despite the absence of the creek and the botanical gardens in contemporary times, the [PHHD] structures stand as a reminder of the neighborhood's early relationship between natural and built environments. (App., Sec. 7, pg. 1, November 9, 2004.)

B3-12

Enlarging the physical and operational aspects of the softball field with 1,500 visitors, 22 loudspeakers, urban-appearing facilities for the press, and the like so close to the PHHD and the Canyon contributes to disconnecting the residential neighborhood and the Canyon. The DEIR must discuss these impacts under cultural resources, aesthetics, noise, and historic resources. A revised DEIR must address the impacts, discussed above and elsewhere in the public comments and UCB must also recirculate the revised document to comply with CEQA.

B3-13

B. UCB Is Legally Required to Analyze Project Impacts to the Canyon and PHHD

BAHA is not requesting a "favor" from UCB – the university is legally required to adequately analyze the impacts of the softball field's expansion and increased usage on the Canyon and PHHD. (*City of Hayward v. Trustees of California State University* (2015) 242 Cal.App.5th 833.) There, the First District Court of Appeal upheld the trial court's finding that the state university had failed to adequately analyze the extent of the master plan's impacts on neighboring parklands. It ordered, in relevant part, that the university prepare a revised EIR in which it analyzed impacts of "site-specific

B3-14

projects to [the] parkland[s] and to reconsider the feasibility findings with respect to funding of off-site mitigation measures.” (*Id.*, at p. 859.) UCB must do the same here.

↑ B3-14
Cont.

Thank you for considering our comments.

Sincerely,

Leila H. Moncharsh

Leila H. Moncharsh
President, BAHA

LHM:lm

Attachment

124

United States Department of the Interior
National Park Service

National Register of Historic Places
Registration Form

7

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Panoramic Hill

other names/site number University Terrace, University Hill

2. Location

street & number Panoramic Wy, Canyon Rd, Mosswood, Orchard Ln, Arden Rd. ☐ not for publication

city or town Berkeley

☐ vicinity

state California code CA county Alameda code 001 zip code 94704

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ☒ nomination
☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of
Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property
☒ meets ☐ does not meet the National Register Criteria. I recommend that this property be considered significant ☐ nationally
☐ statewide ☒ locally. (☐ See continuation sheet for additional comments.)

William Wayne Smith 28 MARCH 2005
Signature of certifying official/Title Date

California Office of Historic Preservation
State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional
comments.)

Signature of commenting or other official Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that this property is:

- ☒ entered in the National Register
☐ See continuation sheet.
☐ determined eligible for the
National Register
☐ See continuation sheet.
☐ determined not eligible for the
National Register
☐ removed from the National
Register
☐ other (explain): _____

Signature of the Keeper

Date of Action

OPR

10/21/05

Panoramic Hill
Name of Property

Alameda, California
County and State

5. Classification

Ownership of Property

(Check as many boxes as apply)

- ☒ private
☒ public-local
☐ public-State
☐ public-Federal

Category of Property

(Check only one box)

- ☐ building(s)
☒ district
☐ site
☐ structure
☐ object

Number of Resources within Property

(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
61	18	buildings
		sites
14 (roads, paths, walls)	1 (wall)	structures
1 (fountain)		objects
76	19	Total

Name of related multiple property listing

(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

6. Function or Use

Historic Functions

(Enter categories from instructions)

Domestic – single and multiple dwellings

Current Functions

(Enter categories from instructions)

Domestic – single and multiple dwellings

7. Description

Architectural Classification

(Enter categories from instructions)

Shingle; Bungalow/Craftsman; Mission/Spanish

Colonial Revival; Beaux-Arts

Materials

(Enter categories from instructions)

foundation Earth, concrete

roof Shingle; Terra Cotta; Concrete

walls Shingle; Brick; Granite; Stucco; Concrete; Fabricrete

other Brick; Iron; Copper; Ceramic Tile; Glass; Concrete;

Fabricrete

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

See Continuation Sheets

Panoramic Hill
Name of Property

Alameda, California
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- ☐ A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B Property is associated with the lives of persons significant in our past.
- ☒ C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations

(Mark "X" in all the boxes that apply.)

Property is:

- ☐ A owned by a religious institution or used for religious purposes.
- ☐ B removed from its original location.
- ☐ C a birthplace or a grave.
- ☐ D a cemetery.
- ☐ E a reconstructed building, object, or structure.
- ☐ F a commemorative property.
- ☐ G less than 50 years of age or achieved significance within the past 50 years.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Areas of Significance

(Enter categories from instructions)

Architecture

Period of Significance

1901-1950

Significant Dates

Significant Person

(Complete if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

Bernard, Maybeck; Coxhead, Ernest; Morgan, Julia;

Steilberg, Walter; Ratcliff, Walter H., Jr.; Thomas, John Hudson; Wright, Frank Lloyd; Atkins, Henry; Paine, Robert; Ratcliff, Robert; Wurster, William.

Primary Location of Additional Data

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☒ Local government
- ☒ University
- ☒ Other

Name of repository:

See Continuation Sheet

Panoramic Hill
Name of Property

Alameda, California
County and State

10. Geographical Data

Acreage of Property: 12.3 acres

UTM References

(Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	10	666060	4191480	3	10	666360	4191360
2	10	660250	4191600	4	10	666170	4191210
				5	10	666100	4191300

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Janice Thomas & Fredrica Drotos

organization Berkeley Architectural Heritage Association date November 8, 2004

street & number 37 Mosswood Road telephone (510) 549-1171

city or town Berkeley state CA zip code 94704

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.

A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name

street & number telephone

city or town state zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC. 20503.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Panoramic Hill, Alameda County, CA

Section number 7 Page 1

Panoramic Hill Historic District
Alameda County, California

NEIGHBORHOOD CHARACTER

The Panoramic Hill Historic District is a woodsy, hillside residential neighborhood consisting primarily of single-family detached houses built primarily from 1901 through the 1940s in various stages and manifestations of the Bay Area Tradition. Whereas the proposed district is located in Berkeley, California, part of the hillside neighborhood is in Oakland. The Berkeley section is in the lower elevations and where early development occurred.

The hill itself is geographically distinguished by Strawberry Canyon to the north and Hamilton Gulch to the south. In this way, the hill's borders, and also the neighborhood's boundaries, are naturally articulated. Situated in the East Bay Hills, the hillside's predominant orientation is west.

The neighborhood is uphill, within walking distance, and east of what is now known as the University of California at Berkeley's Central Campus. The western face of this hillside neighborhood orients to the panoramic views of the San Francisco Bay, the Golden Gate, Mt. Tamalpais, and to historically significant University structures, e.g. the Campanile. The northern face of the Panoramic Hill neighborhood looks across Strawberry Canyon to another hill where the Lawrence Berkeley National Laboratory and the University's Hill Campus are also located. The Hill Campus includes the Witter Intercollegiate Rugby Field, the Levine-Fricke Intercollegiate Softball Field, and the Strawberry Canyon Recreation Area, which are located at the base of the Panoramic Hill neighborhood, and undeveloped open space known as the Ecological Study Area, which is located to the east of the neighborhood. The northwestern face of the neighborhood orients to the California Memorial Stadium.

To the immediate west of the Panoramic Hill neighborhood is housing zoned for multiple units. With the college campus nearby, many of these dwellings are sororities, fraternities, and co-ops. To the southwest of the neighborhood is historic Hillside Court and Hillside Avenue, which is zoned for single-family use.

At the time of the neighborhood's beginning, the floor of Strawberry Canyon was known as Strawberry Valley, and Strawberry Creek flowed through the canyon above ground. Then, a "beautiful natural place"ⁱⁱⁱ, the creek has since been culverted and the ravine filled. The University's Botanical Gardens were also in the vicinity^{iv}. The properties located at 1, 9, and 15 Canyon Road were sited so as to benefit from these amenities as much as for the panoramic views. Despite the absence of the creek and the botanical gardens in contemporary times, the structures stand as a reminder of the neighborhood's early relationship between natural and built environments.

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In general, contributing houses in the district are as unique as the sites upon which they were built because each house is custom-designed for the peculiarities of the hilly topography. Although some houses are stucco and others a patented concrete known as Fabricrete, most of the houses are clad in still unpainted and unstained wood shingles. Natural building materials, e.g. redwood, are glorified, albeit modestly, in these houses and serve both functional and aesthetic purposes. The relationship between indoors and out-of-doors is evident in expansive window elements granting bay and/or canyon views, numerous west facing and/or north facing balconies, and the prevalence of outdoor rooms, e.g. patios and porches, juxtaposed against living rooms, dining rooms, and sleeping quarters.

The district includes 79 buildings, of which more than 60 contribute. The vast majority were single-family dwellings (and ancillary structures) at the time of their construction although two apartment buildings were built in the neighborhood during the early 1900s. Today the district is zoned single-family although there are numerous exceptions. Many single-family homes have secondary units and in other cases what were originally single-family houses have been divided up into several living units.

The area was developed before the road was macadamized and before the automobile was the preferred and common mode of transportation. There is only one road into the neighborhood, Panoramic Way, and it is narrow and switches back and forth like good hiking trails cut for steep terrain. The road follows the contour of the hill rather than the hill being shaped and cut out to conform to the structure. Off of this one road are three streets, i.e. Canyon Road, Mosswood Road, and Arden Road, which also come to dead ends and which are within the district boundaries. An extension of Panoramic Way dead ends at the first switchback, but this more recently built area is not included in the district. Panoramic Way also continues up the hill beyond the boundaries of the district.

Pedestrian pathways are characteristic of the neighborhood. The most elaborate is a public pedestrian thoroughfare built in a classical Beaux-Arts style known as Orchard Lane. Other public pathways include Mosswood Lane and Arden Steps. Given the meandering route of Panoramic Way, the several arterial pedestrian paths facilitate more efficient foot travel.

Several houses have their main entrances off of these public pedestrian thoroughfares, e.g. 1 and 3 Orchard Lane, and 101 and 107 Panoramic Way. In addition to public pathways, there are also numerous jointly-owned private walkways, e.g. the concrete walkway shared by 5-11 Panoramic Way, 23 Panoramic Way, and 73, 75, and 77 Panoramic Way.

After the road was macadamized and the automobile popularized, numerous garages were built. Several have apartments built above them, e.g. a combination concrete garage and brown shingled apartment at both 1 Panoramic Way and 14 Mosswood Road. In the case of 6 Mosswood Road, both the garage and apartment were built of concrete. In another instance a two-story house was built above a two-car garage, e.g. 101 Panoramic Way. Garages were also sometimes built into retaining walls, e.g. 15 Canyon Road.

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Although some fences have been added over the years, there are several clusters of houses where properties blend with little evidence of where one highly irregular lot begins and the other ends. For example the back yards of 67 Canyon Road and 37 Mosswood Road and the side yard of 29 Mosswood Road and 37 Mosswood Road are spacious, open, unfenced and an appropriate transition to the undeveloped University land to the immediate east.

There are numerous retaining walls, one of which is interrupted or cut out for a staircase and concrete fish pond (at 72 Panoramic Way). The sculpted spout is used to direct water drained from the natural underground springs. To this day water seeps from the adjacent retaining wall. A tall concrete retaining wall, with tapered pillars on top and with a trellis on top of the pillars, curves around the northwest base of the district at 15 Canyon Road. On Arden Road a privately owned retaining wall at the entrance of 100 Arden Road is made entirely of clinker brick. A concrete retaining wall at the second hairpin between 101 and 107 Panoramic Way on the uphill side is broken up by the upper extension of Orchard Lane. The concrete retaining wall on the downhill side of Panoramic Way at the second hairpin creates just enough space for the niche upon which 74 Panoramic Way is built. In these various ways, the hillside development of houses, retaining walls, streets, fountains, and fences is in tune with nature.

PUBLIC INFRASTRUCTURE

Panoramic Way, a steep and narrow road that switches back and forth at sharp angles through the Panoramic Hill neighborhood, up the hill to the Oakland border and beyond, was carved out in 1888 by Charles A. Bailey as he developed University Terrace. So perilous was the dirt road that, as late as 1917, only one hill resident owned a car; even horses were apt to stumble as they tried to navigate the sharp turns. Though the road was never properly graded, it was eventually paved, and though discussions to create a second access road took place, Panoramic Way has retained its original form and remains the only access road to the Panoramic Hill neighborhood.ⁱⁱⁱ

Canyon Road was spelled Cañon Road on a 1910 map of the University Hill subdivision, the spelling being a reflection of the Spanish heritage of the Peralta tract that predated existing development. Before University Hill was developed, the same road was shown on University Terrace subdivision maps in 1888 but without a street name. Before University Terrace was developed, the same road could be seen on Boardman's 1868 map of the Berkeley Property Tract but without a street name. The road itself is flat unlike every other road on Panoramic Hill, joins Panoramic Way at its entrance to the neighborhood, extends around to the canyon side of the hill, passes the adjacent California Memorial Stadium, and ends in a substandard cut-de-sac. A map of Strawberry Valley in 1875 shows the same road extending into the canyon.^{iv}

Mosswood Road begins at the second hairpin turn on Panoramic Way, curves around the hillside, runs parallel to Canyon Road, and ends in a substandard cul-de-sac on the north facing side of the hill. The University's Ecological Study Area can be accessed from Mosswood Road as the street borders the undeveloped area, which is coastal live oaks, bay trees, and native ferns in this particular

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ecosystem. From Mosswood Road, a footpath has been worn from human traffic and goes downhill to the Strawberry Canyon Recreation Area and uphill to the Lower Jordan Fire Trail. The road was laid out by Warren Cheney in 1910 for the University Hill subdivision.

Arden Road begins on Panoramic Way and ends in a cul-de-sac just uphill of Mosswood Road. The road was laid out by Warren Cheney for the University Hill subdivision in 1910.

Orchard Lane is a public pedestrian path developed by Warren Cheney in 1910 as part of his University Hill subdivision. Designed by Henry Atkins, the classical Beaux-Arts concrete staircase connects the beginning of Panoramic Way to Panoramic Way at the second hairpin. A more simplified version of Orchard Lane picks up at the second hairpin and connects to Arden Road. The beginning of Orchard Lane is graced with corner piers which were originally topped with urns but have since been lost to vandals. The pathway is lined with poplar trees planted by architect Walter Steilberg when he lived at 1 Orchard Lane. The pedestrian pathway curves up the hill and is defined by balustrades. Each landing benefits from a concrete bench and becomes a place to linger. Whereas the lower section of Orchard Lane is adorned with benches, balustrades, and corner piers, the second section of Orchard Lane is an unadorned concrete stairway with numerous landings. Several houses "front" on both upper and lower sections of Orchard Lane, including (but not limited to) 1 and 3 Orchard Lane and 101 and 107 Panoramic Way. Orchard Lane is not only an arterial pedestrian corridor stairway for movement within the neighborhood but also a visual link to the Bancroft Steps downhill of the neighborhood, also designed by Henry Atkins, and ultimately a practical route to Piedmont Way and the University. Orchard Lane was made a City Landmark in 1991.

Arden Steps is a steep concrete staircase of 100 steps connecting Mosswood Road to the cul-de-sac at Arden Road, which is where Arden Path begins, and extends to Panoramic Way at the upper reaches. This public staircase was part of the University Hill development, and in 1915 a house was built at 38 Mosswood with the main entrance off of Arden Steps. The staircase has a utilitarian design consisting of a retaining wall and galvanized steel railing on its east side, a curb on the west side, and two small landings along its length.

Mosswood Lane was named Stockade Lane when University Hill was first subdivided in 1910. However, in 1922 when Walter Steilberg built a Fabricrete cottage fronting on the footpath, he renamed the public thoroughfare. Whereas Orchard Lane is formal in design, and whereas Arden Steps is a steep climb, Mosswood Lane is an unimproved path with gentle slope and curvature. Boy Scouts reinforced the integrity of the path with railroad ties (circa 2000), and gravel was laid on the lower elevations during a garden tour (circa 2001) but otherwise the path remains unchanged. The path is lined with redwood trees on one side with fallen redwood needle-like leaves softening the footpath itself. The homes that flank each side of the path are the rear yards and back sides of historic and architecturally important dwellings including two by Julia Morgan and two by Ernest Coxhead and one by Frank Lloyd Wright. The curved retaining wall of a Beaux-Arts terrace at 3 Orchard Lane also backs up to Mosswood Lane and was designed by Bernard Maybeck although the retaining wall is now covered by overgrown ivy.

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PRIVATE DEVELOPMENT

1. 1 Panoramic Way – TWO CONTRIBUTING: cottage and garage - combination;
playhouse pergola and garage combination (a)

Year built: 1921; 1931
Architect: Steilberg, Walter
Original owner: Steilberg, Walter

This small three-room brown shingle cottage sits above a two car concrete garage at the base of Walter Steilberg's family home. The redwood garage doors with decorative cut-outs are hinged and roll along a metal track inside the garage. A bay window with decorative mullions on the western elevation once opened to panoramic views of the bay. Exterior decorative details include Chinese perforated tiles that also serve as vents. Indoor and outdoor relationships strengthened with a Dutch door at the south elevation which opens onto a wide brick walkway and pergola that runs parallel to Panoramic Way until it meets a brown shingle playhouse with amber glass in windows at the end. The playhouse has a low-pitch gable roof with an 18 lite picture window with centered decorative medallion. Supporting the walkway and pergola is a concrete retaining wall with a built-in garage constructed in 1931.

2. 5, 7, 9, 11 Panoramic Way - ONE CONTRIBUTING: apartment building

Year built: 1912
Architect: Morgan, Julia
Original owner: Price, Clifton

"This two-story and basement apartment building is designed around an interior court on a hillside where the views, and hence the fenestration, are of major importance. Upstairs, a large bay over the arched entrance is flanked by groups of 4 windows together, then another bay at each end. On the first floor the large banks of windows at the corners have balustrades that repeat the design of the front of the central arch, and suggest balconies without breaking up the masses. Brick steps lead up to a small terrace from an entrance at one side. There is a suggestion of half-timbering, not used in a medieval sense as much as for design element to emphasize the windows. The central lower façade is indented, with the plain supports creating pattern interest." The half-timbering has been painted off-white, the color of the stucco, and is not original. Part of the front lawn, the hedge, and retaining wall were removed in 1995 to make way for a parking pad for residents and guests' vehicles. A trellis covers. The change does not negatively impact the integrity of the structure.

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3. 18, 20, 22, 24 Panoramic Way – TWO CONTRIBUTING: house; [20, 22, 24 PWay]
house (a) [18 PWay]

Year built: between 1911 and 1921^{vi}
Architect: unknown^{vii}
Original owner: unknown

This fourplex is made from two separate buildings which have been physically joined. Both buildings have very shallow street setbacks and appear as one story on the street side but are multi-story from the rear. One of the buildings (18) is stucco whereas the other (20, 22, 24) is clad in brown shingles. The stucco building has an arched entry way that is flanked by small six- lite casement windows. A projecting bay window to the north sits atop a below street-level garage. The garage has side-hinged doors. The wood shingle building is L-shaped with a complicated front gable roof with exposed rafter tails. Three gently pitched parallel gables recede from back to front. The house has a side main entrance. A cantilevered porch wraps from the south side to the western exposure with scroll sawn Swiss chalet inspired balcony railing. A pair of off-center double-hung sash windows and an ornamental leaded glass casement window with Craftsman inspired window frames adorn the simple front façade.

4. 23 Panoramic Way – ONE CONTRIBUTING: house
NON-CONTRIBUTING: detached garage rehabilitated 1987 (a)

Year built: 1901
Architect: Maybeck, Bernard
Original owner: Boke, George H.

This two story wood frame home on a concrete foundation with a shallow gabled roof, wide overhanging eaves with exposed rafter tails is sheathed on the first floor with horizontal redwood boards and on the second with vertical boards overlaid by horizontal boards, creating a kind of half-timbering effect. The roofline of the front façade is interrupted by a large dormer with a sweeping gable containing four wood casement windows with single lites. The exterior was originally oiled but has since been stained a brownish color to preserve the wood from sun damage while blending in with the environment. The house was originally designed without a roof over the front porch, but early photos show the roof was added long ago. One enters the house via a half-level below the main floor. The living room windows, originally three pairs of casements with a single horizontal division, were replaced by fixed sheets of glass by the second owner, and then returned to the original fixed pane windows by the third and current owners^{viii}. These three large windows occupy the west elevation first floor, while four smaller casement windows occupy the dormer directly. The view is oriented toward the San Francisco Bay. The shallow gable roof, wide overhanging eaves, carved balustrades, and cross-log corners all add to the chalet feeling. Board balusters hand sawn in a Swiss motif ornament a sleeping porch on the eastern exposed second story. Posts have been added underneath to support the sleeping porch. The original wood shingle roof has been replaced with a

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composition shingle roof of similar character. One of the most innovative features is the continuous L-shaped space that connects the living and dining room, presaging more modernist dwellings.

A three car garage located uphill behind the home is accessed by Panoramic Way as it winds to its second switchback (across from and below 74 Panoramic Way). The garage is true to the original style of the Boke House with its shallow gabled roof and its stained cedar shakes. It is one story on the street level and two stories from the backyard level of the Boke House with storage on the first or backyard level. Five single lite casement windows open the garage to bay views.

5. 25 Panoramic Way – TWO CONTRIBUTING: house;
detached garage (a)

Year house built: 1908
Designer/builder: Broad, A.H.
Year garage built: 1926
Original owner: Deane, Margaret

This two story single-family dwelling with side gabled roof has an exterior clad in unpainted and unstained redwood shingles. A side entrance porch with projecting gable mimics the Boke House next door. A projecting bay on the southwest façade contains four sash windows, and two flat projecting bays on the second story each contain a pair of sash windows. Because the house is built near the first hairpin turn on Panoramic Way, the house fronts on Panoramic Way while the garage at the rear of the house also has access from Panoramic Way. The two car garage is brown shingles and has a shallow gabled roof. The structure is enhanced by two square windows each containing four square lites on the western wall opening the garage to SF Bay and Golden Gate views.

6. 27 Panoramic Way – ONE CONTRIBUTING: house

Year built: 1903
Designer/builder: Hoover, Edgor
Original owner: Lewis, Exum Percival

This two and one half story simple rectangular brown shingle single-family dwelling with side gable moderately pitched roof and overhanging eaves was built on what remains of a brick cistern used to hold water for the University in its early days.^{ix} The front entry is from a shed roofed porch which projects from the northwestern façade. Situated between an uphill and downhill section of Panoramic Way, the house is two stories from below, facing the bay. From above and behind, the house is one story and appears to be a very small cottage shallowly set back from Panoramic Way after the first hairpin turn. Fenestration on the eastern façade consists of a pair of small, vertically elongated wood-frame sash windows. A pair of multi-lite French doors dominates the southern exposure. The front western exposure is no longer visible to the passerby, due to the lush vegetation grown up and around the structure.

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7. 30 Panoramic Way – NON-CONTRIBUTING: house – extensive alterations

8. 32 Panoramic Way - NON-CONTRIBUTING: house – extensive alterations

9. 36 Panoramic Way – ONE CONTRIBUTING: house

Year built: 1908

Designer/builder: May, Frank M.

Original owner: Buckham, J. W.

This two-story hillside house mimics the imagery of a chalet with features such as scroll sawn balcony, vertical wood siding, and carved ornamentation, all of which are similar to the well-known Boke House at 23 Panoramic Way. The shallow side-gable roof is complicated on both north and south sides by three shed dormers 'perforating' the roofline at the eave and supported by wooden side-brackets flanking each sash window. Built on the downhill side of Panoramic Way, a terrace and balcony face into the hillside. The approach is from the northeast where the kitchen entrance is most obvious and under a small shed roof. Exposed beams support the gently sloping shed roof. The main entrance to the southeast is accessed by way of a gable roofed entry porch. The combination half-timber and board-and-batten exterior is now painted cream with green trim.

10. 38 Panoramic Way – ONE CONTRIBUTING: house and garage combination

Year built: 1917

Architect: Steilberg, Walter

Original owner: Steilberg, Walter

This three story stucco presents a half story façade to the street and steps down the hill to become three stories on the western elevation. The roof is a series of low-raking gables which widely overhang the walls of this asymmetrical cruciform floor plan. The end beams are finished in scroll sawn carving. The entrance is recessed with woodcarvings around the front door. Massive stucco-faced chimney pierces the roof at the south with a pitched chimney cap. Twin front facing gables project on the front northern exposure; one houses a narrow single-car garage while the other a large segmented arch window of leaded, opaque, colored glass. Steilberg's first wife Rowena crafted the wood carvings around the entry door and was responsible for the sculptural detail on all of his early buildings.

11. 59 & 61 Panoramic Way (formerly 69 & 71) – TWO CONTRIBUTING: house;
detached garage (a)

Year built: 1928-1929

Architect: Steilberg, Walter

Original owner: Atkinson, Florence

Architect: Moise, Howard

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A two story, single family, wood shingle clad structure with a low-raking gable roof, broad eaves and projecting end beams atop a concrete foundation, follows an L-shaped plan. The home was built into a triangular lot inside the first hair-pin turn on Panoramic Way, with a very shallow setback on the uphill side and nestled in among redwood trees. Steilberg composed the home to conform to the setting so that the southern wall is angled away from what is now a tree stump but would have been a mature tree when the house was designed. On the western facade a second redwood was used in place of a decorative pillar holding up a trellis over the half round portico containing a rooftop terrace. A stone retaining wall combines with a concrete retaining wall covered with wooden lattice curved to follow the contour of the hillside. Above the retaining wall is a terrace. A pergola gateway with wooden columns, tapering from bottom to top with hand carved cross braces, marks the entrance from the eastern side. The second story was designed in 1954 by architect Howard Moise although visual inspection does not reveal where the addition begins and ends. The house was later subdivided into two apartments with the entryway to one apartment on the eastern (uphill) side of the lot. The entryway is inset with a substantial wooden lintel where the original street number (#71) is carved. To the left of the entry is a window screened by six green glazed perforated Oriental tiles. Additional fenestration includes two-lite casement windows placed asymmetrically. A north-east corner window configuration groups three windows per side separated by natural redwood vertical supports and two incised horizontal bands at the top. A large, mullioned bay window dominates the south-facing elevation. A red brick chimney is prominent on the northwest elevation. A single-car wood frame garage is wedged into the narrowest part of the lot at Panoramic Way's first hairpin turn. Lattice work overlapping in squares atop wood siding gives the garage the appearance of an oversized Japanese jewel box; the effect is enhanced by ochre glazed perforated Oriental tiles on the eastern side and similar tiles glazed "Steilberg-green" on the western side.

12. 60 Panoramic Way – TWO CONTRIBUTING: house
retaining wall (a)

Year built: 1913
Contractor: Rowe, Henry
Original owner: Moore, William J.

This two and one half story single-family dwelling is built on the uphill side of Panoramic Way near the first hairpin turn. The exterior is clad in natural wood shingle and topped by a front gabled roof with overhanging eaves which are supported by exposed roof beams. The chimney is clinker brick. On the first story of the western façade is a square bay with three double-hung windows consisting of multiple lites and an inset entry porch. The front door has a vertical inset panel flanked by side lites of diamond-paned leaded glass. The second story contains a pair of three-sided bay windows under a secondary hip-roof overhang. A stone retaining wall of local volcanic rhyolite about 4 feet in height wraps around the property line at the street, adjoining the retaining wall at 62 Panoramic Way. A flight of steep stone steps leads to the wooden entry porch.

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13. 62 Panoramic Way – TWO CONTRIBUTING: house
detached garage (a)

Year built: 1908
Designer/builder: Rowe, Henry
Original owner: McDowell, Mrs. Laura

This two and one half story single-family gable roof house in natural wood shingle is built on the uphill side of Panoramic Way. The west-facing main entrance has been altered with salvaged nineteenth-century double French doors with a large four lite square transom above. The entire entry structure is a half-round two story tower topped by an enclosed balcony. The street level garage is integral to the concrete retaining wall and was structurally reinforced in the early 1990s, but maintains its integrity. A pair of wooden side-hinged doors open out to the street.

14. 64 Panoramic Way – ONE CONTRIBUTING: house
NON-CONTRIBUTING: garage and apartment – altered (a)

Year built: 1908
Contractor: Rowe, Henry
Original owner: Rountree, Mrs. E.

Two and one half story gabled roof shingle clad house has elaborately bracketed eaves. Built on the uphill side of Panoramic Way, the property is accessed by way of a concrete staircase shared with 66 Panoramic Way. Main entrance to house is on the north side, protected and defined by a gable-roofed open porch. Windows are undivided double-hung sash. A ground floor addition with a deck opening off the main floor is a non-contributing feature. Although constructed as income-property with apartments, it appears to be a single-family dwelling.

15. 65 & 67 Panoramic Way – TWO NON-CONTRIBUTING: house; [65 PWay]
house [67 PWay] -
later construction (c. 1964)

16. 66 Panoramic Way - ONE CONTRIBUTING: house

Year built: 1908
Architects: Morgan, Julia and Hoover, Ira
Original owner: Turner, Elsie Lee

This three story, brown shingled rectangular house sits on a concrete foundation beneath a complicated multi-level side-gabled roof with exposed rafter tails. The original gable roof entry porch has been enclosed. Built on the uphill side of Panoramic Way, the property is accessed by way of a concrete staircase shared with 64 Panoramic Way. Originally, a single family house, it now has

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multiple entrances to accommodate four apartments. The main and original entry is on the southside and accessed from the shared concrete landing. The gable entrance into 66 B, has overhanging eaves and support brackets; the brackets are decorated with a distinctive arrow pointing earthward. The second and third story exteriors are clad in stained wood shingles. The first story exterior is clad in clapboard siding with a pair of four-lite casement windows to the north and a pair of large picture windows to the south on the western facade. The second story has a flat bay with a single lite picture window flanked by two – four-lite casements. A long shallow shed dormer with a pair of four-lite casement windows dominates the western roofline on the third story. The dormer is supported by four carved wooden angle brackets. The fundamental contributing features remain intact, while alterations and additions are sympathetic.

17. 70 Panoramic Way – ONE NON-CONTRIBUTING: house – substantial alterations in 1960s

18. 72 Panoramic Way – TWO CONTRIBUTING: studio;
fountain (a)

Year studio built: 1939
Architect: Ratcliff, Robert
Original owner: Ratcliff, Robert
Year fountain built: 1939
Sculptor: Paine, Robert

This small one story two room structure on the uphill side of Panoramic Way was built as a studio by and for architect Robert Ratcliff. The studio is clad in horizontal wood siding with a shed roof. Entry is through a Dutch door with a handcrafted doorknob. A brick chimney is on the back side. Reinforced concrete retaining walls along the steep side of the roadway open to reveal a split level concrete stairway and reinforced concrete railing containing a rectangular fish pond fed a constant supply of fresh water from the mouth/spout of a sculpted Poseidon-like character draining water from a natural spring in the hillside. The architect Walter Steilberg, while being interviewed by the architectural historian Sally Woodbridge, commented, "...it was only through the wisdom of Mr. Paine—Robert Paine, the sculptor, who was the father of Mrs. Robert Ratcliff—that the spring was drained. He made a fountain of it for their house and that, for the time being, put a stop to it. Water ran the year round; if he hadn't done that, we would have had more slides there."^x

19. 74 Panoramic Way – ONE CONTRIBUTING: house

Year built: 1941-1952
Architect: Ratcliff, Robert
Original owner: Ratcliff, Robert

The low, horizontal lines of this single-family house are created by varnished clapboard siding, a split-level floor plan, and a shallow gable roof. Carefully tucked into a hairpin on Panoramic Way, the downhill side of the house is supported by a retaining wall, which also supports the road cut for

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Panoramic Way. The entrance from the downhill side of the second Panoramic Way hairpin is marked with a shallow, concrete urn supported by a base of pressed bricks stacked at cross angles with a garden stairway of the same brick. The house was built in several stages with significant additions in 1952 including a projecting glass stair tower at the south end. A series of six large square picture windows on the western facade is contrasted with minimal window openings on the eastern side. Variation in materials includes a sand-colored pressed brick chimney and a stucco covered chimney. An asymmetrical gable roof gradually becomes symmetrical.

20. 73, 75, 77 Panoramic Way – ONE CONTRIBUTING: apartment building

Year built: 1904
Designer/builder: Broad, A.H.
Original owner: Ford, Jerome C.

This three story rectangular structure with side gable roof on the downhill side of Panoramic Way is actually a three unit apartment building. Each floor of this brown-shingle, Craftsman style structure is a separate apartment with no interconnecting stairway, and each has its own entrance directly to the outdoors. The eastern façade has a small enclosed porch with two stacked shed roofs and a trellis composed of heavy beams and cross-members. Fenestration consists primarily of double-hung sash. Balconies upstairs and down dominate the western façade. A small north facing balcony provides the entry porch for the apartment below. A rustic wooden pulley rigged beside the balcony would have eased the transport of heavy items to the second floor residence. Wood sash windows have been replaced with aluminum but do not significantly diminish the structure's overall integrity.

21. 94 Panoramic Way – ONE CONTRIBUTING: house

Year built: 1917
Owner/designer: Paine, Robert Treat
Original owner: Paine, Robert Treat

This modest yet eclectic bungalow was designed by the sculptor Robert Treat Paine. Paine designed the bungalow with his love of ships in mind and lived here with his wife and two daughters throughout his adult life. The roofline has a delicate camber leaving the impression one is in the bow of a ship. Taking advantage of the cheapest materials, including salvaged wood, Paine used tarpaper for the exterior siding on the first story, alternating with post and beam wood panels. The north side is now sheathed in copper which was a renovation by Ratcliff family members during the past decade. [Paine's daughter Evelyn married Robert Ratcliff, and the bungalow remains in the Paine/Ratcliff family to this day.] A balcony is cantilevered over hand carved outlookers with flat scroll-sawn balustrades on the west side of the cabin. On the second story, the exterior perimeter consists of clapboard siding. A row of nine ribbon windows each with twelve small square lites, open the small 'master' bedroom to the majestic bay views. A second bedroom contains a northern wall of built-in bookshelves and end tables reminiscent of crew quarters in a ship's hold. The corners of the south wall of the upper story are cambered. A balcony at the front (east side) serves as a roof over the

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entry while ornamental scrolls on heavy wooden brackets support the balcony. A final feature of this unique home is the bronze door knocker of a sculptor with anvil declaring this the studio of Robert Treat Paine. Attached to the front door made of vertical planks with large metal studs, the doorknocker's existential inscription reads: "The bird of time has but a little way to fly and to the bird is on the wing."

22. 101 Panoramic Way – ONE CONTRIBUTING: house and garage combination

Year built: 1931
Architect: Steilberg, Walter
Original owner: Ferguson, Mary Vaneveren

This three story Fabricrete single-family dwelling with an intersecting gable terracotta tile roof is located on the uphill side of Panoramic Way. The first story consists of a two-car garage designed with heavy fabric curtains in place of a door. Two stories of living space rise above the garage with the bedroom level below the main living area and entrance. The dwelling faces the Bay with the main entrance on the side accessed from Orchard Lane. On the other side of Orchard Lane is the main entrance of 107 Panoramic Way, and the two dwellings are complementary in Mediterranean and Spanish Revival idioms. The front door is accessed through a covered inset entryway; the low, small portal has a lintel above adorned with decorative scrolling. The heavy Fabricrete interior is remarkable for its barrel-vaulted ceiling in the living room. French doors from the living room open onto a balcony oriented toward the Bay and ornamented with Steilberg's signature, glazed, Oriental, perforated, ceramic tiles. The L-shaped plan with breadth in front has a kitchen wing in the back. Fenestration consists of steel sashes and casements. A three-sided bay on the southwest side has a tile hip roof and amber glass window panes. An addition in 1953 by architect Robert Ratcliff enclosed the north elevation porch and is the only alteration to the house. The addition is complementary although in the Ratcliff vernacular, as illustrated by frameless glass window slides.

23. 107 Panoramic Way – ONE CONTRIBUTING: house and garage combination

Year built: 1926; 1939
Architect: Miller, Chester
First owner: Bortweit, V.F.

This three and one half story single-family dwelling follows an L-shaped plan and borrows from Mediterranean, Pueblo, and Spanish Colonial Revival features including a flat roof with tile-covered eaves and a white stucco exterior. Situated on the uphill side of Panoramic Way, its main entrance is across from 101 Panoramic Way on Orchard Lane. The first story consists of a two-car garage cambered at 45 degree angles to connect the vertical and horizontal elements. Garage doors are tongue and groove and hinged on the side. The west elevation is dominated by an oversized casement window; a huge multi-paned picture window composed of three parts. The center is a vertical piece of unadorned glass flanked by tall narrow mullioned casement windows. The whole

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configuration is six panes high. The half story consists of a square penthouse room with pyramidal hip tile roof rising above the main flat roof. A round edge parapet wall simulates adobe construction. Windows have steel sashes of various shapes.

24. 1 Canyon Road – TWO CONTRIBUTING: house;
Beaux-Arts stairway and retaining wall (a)

Year built: 1906
Architect: Coxhead, Ernest
Original owner: Torrey, Frederic

This three-story rectangular single-family dwelling with side-gable roof, overhanging eaves, and natural wood shingles, is built on the uphill side of Canyon Road at the back of its lot. Originally accessed by way of log steps, within several years the entrance stairway was formalized in a Beaux-Arts classical style designed by Henry Atkins in the vernacular of nearby Orchard Lane (see below). The steeply pitched gabled roof is punctuated by three dormers with broad sash windows. Two plain brick chimneys flank each side gable. The first story is dominated by a massive bay window supported by large wood brackets. Originally the front door was sited at the back of the house to maximize vistas of the bay, creek, and the UC Botanical Gardens from the interior. The house has since been reconfigured to accommodate several apartments. The entrance from the back has been relocated to the southern side where there is a large patio and pergola. An open loggia once extended off the dining room to the north. In the 1950's a sleeping porch on the main level was enclosed with double-hung aluminum windows. The exterior from the front is largely intact, and in general, the house retains its integrity.

25. 5 Canyon Road – ONE CONTRIBUTING: (1) garage and cottage combination

Year built: 1935
Architect: Steilberg, Walter
Original owner: Torrey, H.B.

A one-story brown shingle cottage atop a three-car Fabricrete garage was built on the uphill side of Canyon Road with no street setback. The garage is composed of three graceful ivy-covered doorless arches. The second story fenestration consists of three sets of wood windows, including a pair of casements flanked by two bays. The structure has a side-gable low pitched roof with overhanging eaves and a side entrance accessed from the same Beaux-Arts stairway to 1 Canyon Road.

26. 9 Canyon Road – ONE CONTRIBUTING: house;
ONE NON-CONTRIBUTING: detached garage (a) – later construction

Year built: 1908, but extensively remodeled in 1920s
Architect: Morgan, Julia, Ira Hoover, William C. Hays
Architect: William C. Hays

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Original owner: Hutchinson, Lincoln

A two story rectangular single-family house with moderately pitched side gable roof; this dwelling was originally built as a brown shingle and redesigned after a fire in the 1920s when a story was added and the structure sheathed in stucco. Three great arches and a three-story tower of small paned windows dominate the west elevation with the former providing support for an open-air terrace above and the latter allowing ample light and views. Built on the uphill side of Canyon Road and at the back of the lot, the house is accessed by the classical concrete stairways shared with 1 Canyon and designed by Henry Atkins.

27. 15 Canyon Road – THREE CONTRIBUTING: house;
detached garage (a)
retaining wall (b)

Year built: 1904
Architect: Coxhead, Ernest
Original owner: Rieber, Charles

This massive three-story brown shingle is located at the base of the Panoramic Hill neighborhood and irregularly shaped to conform to the lateral curve of the hillside. The house was sited so as to afford direct and unimpeded views of the San Francisco Bay and Golden Gate as well as Strawberry Creek and the UC Botanical Gardens through the oversize bay windows. The steeply pitched side gable roof is punctuated by five steeply pitched gable dormers; clinker brick chimneys dominate the north and west elevations. A two story leaded glass window opens the interior staircase to northern light. Windows on the back are double-hung with diamond-paned leaded glass in upper sash. The main entrance is on the back side accessed by a winding brick path through a sheltered garden. A studio and terrace on the northeastern slope face the Bay and Canyon. A concrete retaining wall topped by tapered pillars supporting a trellis surrounds the property, and includes a single car garage cut within. Some superficial changes do not diminish the integrity of the overall structure. Originally single family, the house was subdivided into three units during World War II.

28. 33 Canyon Road - ONE CONTRIBUTING: house

Year built: 1907
Owner/designer: Whitney, Albert^d

This single-family L-shaped home is clad in wood shingles under a low slung gable roof of wood shakes atop its original brick foundation. The main entry is from the south west side by way of a brick walkway. The living room forms the L-shape of this structure and appears to be a very old addition to the original rectangular structure. A modest wing with a shed roof on the back of the house has multiple light windows. Other fenestration is mainly composed of expansive casements with six small panes at the top; small eight paned windows near main entrance door; and four ribbon windows at attic level on the northern exposure. Located uphill of and accessible from Canyon Road via a steep

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path, the more convenient pedestrian access now that automobiles are used to access the neighborhood, is downhill from Mosswood Road and via Mosswood Lane. From Mosswood the house appears to be a modest one story structure, while the Canyon Road approach presents two and one half stories with panoramic views of Strawberry Canyon and the San Francisco Bay. The property flows to the terraced garden at 15 Canyon Road just below, which is separated by a modest weathered split-rail fence. A wood-framed single panel glass door on the eastside kitchen entrance and some minor window alterations on the eastern side do not negatively impact the overall integrity of the structure.

29. 37 Canyon Road – ONE NON CONTRIBUTING: house - later construction (c. 1969)

30. 39 Canyon Road – ONE NON CONTRIBUTING: house - later construction (c. 1971)

31. 45 Canyon Road - ONE CONTRIBUTING: house and garage combination

Year built: 1924
Architect: Steilberg, Walter
Original owner: O'Connor, Lenore

This small rectangular cottage with shallow street setback was the last of four cottages (see 47, 49, and 51 Canyon Road) built on one lot by owner Lenore O'Connor. Today the cottages are part of a condominium association with the grounds commonly maintained. Built at the base of the hill on a heavily wooded north facing slope and oriented toward Strawberry Canyon, the cottages blend into the site. Although similar in style (e.g. scroll-sawn balconies, combination horizontal siding/redwood shingle), each is unique and sensitive to the idiosyncrasies of individual sites. One unique feature of 45 Canyon Road is the complicated roof which is apparent especially from the perspective of the back and southwestern side where two sides of the roof come together to create an unusual triangular point for what is an otherwise ¼ pitch gable roof. On the rustic exterior, the upper story is shingled whereas the main story is vertical boards with a cornered notch at the bottom of each board. The foundation is reinforced concrete and brick, and the chimney is also brick. Casement windows and a balcony with scroll-sawn railing are some of the features consistent with the other cottages. The garage doors of the two-car garage are paneled with small squares and rectangles and nearly gothic pointed windows, or cut-outs, which are now filled in with opaque material.

32. 47 Canyon Road - ONE CONTRIBUTING: house

Year built: 1927
Designer/builder: Lassing, T.F.
Original owner: O'Connor, Lenore

This cottage sitting at the back of the lot has completely rustic horizontal board siding and no shingles. Balconies, scroll-sawn porch railing, and a gable roof are compatible with details of

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neighboring cottages. A small modern addition does not detract from the structure's overall contribution.

33. 49 Canyon Road - ONE CONTRIBUTING: house

Year built: 1908
Designer/builder: Lassing, T.F.
Original owner: O'Connor, Lenore

Built in 1908 at the back of the lot, this cottage has rustic horizontal board siding below and board-and-batten above with all siding left alone, unpainted, weathered, and natural. Casement windows have small panels in a square plane. A penthouse story has interesting gable roof.

34. 51 Canyon Road - ONE CONTRIBUTING: house and garage combination

Year built: 1924
Architect: Steilberg, Walter
Original owner: O'Connor, Lenore

Built at the front of the lot with shallow street setback, this two story cottage with reinforced concrete and brick foundation has board and horizontal battens covering the first floor exterior and natural wood shingle covering the second floor exterior under a simple gable roof. The modest living quarters are located on the second story above a one car garage with hinged wooden barn doors enhanced by decorative window vents. The second story fenestration consists of a decoratively mullioned three panel with side lights and a multi-lite casement on the north and an expansive three panel French doors opening onto a side porch entry with scroll-sawn Swiss chalet style railings. In 1982, a sympathetic alteration converted a second garage to additional living space with two pairs of four light wooden windows and a street level entry under the second story porch. The alteration does not significantly alter the integrity of the structure.

35. 53 & 57 Canyon Road - ONE NON CONTRIBUTING: two unit building - later construction, 1970

36. 61 Canyon Road - ONE NON CONTRIBUTING: house - later construction (c. 1987)

37. 67 Canyon Road (formerly 51 Canyon Road) - TWO CONTRIBUTING: house;
detached
garage (a)

Year built: 1911
Owner/designer: Stratton, George Malcolm^{xii}

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This single family house rises three and a half stories from the street on the uphill side of Canyon Road; the bulk and mass is striking. The wood shingled structure has a double steeply pitched side gabled roof with overhanging eaves. The front gable has been altered by the addition of two large skylights facing north. The main entrance is on the west side by way of a concrete and brick stairway, made complex by many turns and levels. The west facing entry portal is defined by a Tudor-arched door way, a built-in bench on one side, board and batten siding, and a single-paneled wooden door. A one story western wing off the main house has a side-gable roof. A second story open face balcony on the north side is supported by massive wooden brackets that, although sympathetic, are not original. Balcony railing was replaced with compatible modifications in 2003. Built on a sub-standard cul-de-sac with very shallow street setback and facing Strawberry Canyon, the house is bordered by a forest of coastal live oaks and bay trees in the undeveloped land known as the University of California at Berkeley's Ecological Study Area. The physical location at the base of the hill and at the geographic interface between the neighborhood and the University makes this house a socio-geographic landmark. A five foot high concrete retaining wall following the contours of Canyon Road has been recently retrofitted but maintains the original brick steps to the expansive entry. While the public side of the home is austere, the back side opens onto a lush terrace garden providing a private outdoor living area for the residents. Windows are mostly plain double hung sash. A window has been added to the street-side of the house on the floor below the main entrance. The overall structure retains its integrity. A one-car garage is built into a concrete retaining wall of the hillside is unaltered.

38. 4 Mosswood Lane - ONE CONTRIBUTING: cottage

Year built: 1930
Architect: Steilberg, Walter
Original owner: Steilberg, Walter

This one and one half story Mediterranean style cottage is built of Fabricrete with a shallow gable roof of terracotta tiles and was Steilberg's response to the devastating Berkeley Hills fire in 1923. This was meant to be a low cost home impermeable to fires and other disasters. The windows have steel sashes, the sills are tile. The only wood in the structure are the kitchen cabinets, the doors and bookshelves built-in beside the fireplace and the table in the breakfast nook. The cottage is accessible only by foot off Mosswood Lane and from the rear of the Steilberg family compound at 1 Orchard Lane and 1 Panoramic Way; the cottage is a hidden gem. A roof top terrace, accessed by a graceful curving substandard stairway, breaks the roofline on the front eastern elevation. Metal frame multi-lite windows are plentiful. A large picture window on the western façade allows an expansive bay view from the living room. An oversize fireplace in the living room provides heat throughout the house due to the foot thick concrete walls which have pigment rubbed in while still wet so that the interior never requires painting, which was another cost saving feature. Even the lighting fixtures were designed by Steilberg. Using capiz shells for the built in shades, a technique adapted from antique Chinese domestic paning, he felt they would be a low cost solution to lighting. The front door is similar to the one Steilberg designed for 6 Mosswood Road, that is, an arched doorway with leaded designs in colored glass. Venting is cleverly concealed behind Steilberg's trademark glazed green Oriental

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perforated tiles. The half story on the western elevation consists of a small bedroom or study accessed by a steep, gently curving interior stairway.

39. 6 Mosswood Road – ONE CONTRIBUTING: cottage and garage combination

Year built: 1924
Architect: Steilberg, Walter
Original owner: Mel, Charles

This two story Mediterranean style Fabricrete cottage with terra-cotta tile shed roof sits atop a foundation of five large archways forming five garage spaces with entry off of Mosswood Road on a sub-standard lot. A flat projecting bay window flanked by two four lite casements rests above two north west facing arches. An iron and glass balcony is buttressed by Fabricrete piers and centered above the fourth archway on the western façade accessed by multiple lite French doors. A side entry is tucked away, not visible from the street, and accessed by a concrete stairway shared by 8 and 10 Mosswood. The entry door is arched with leaded glass panes. In 2004, the two most southern garages were altered with the addition of side hinged custom built wooden barn doors, which are compatible with and do not detract from the whole, and replace original (but deteriorated) hanging curtains.

40. 8 Mosswood Road - ONE CONTRIBUTING: house

Year built: 1919
Architect: Allen, Harris
Original owner: Mel, Charles

This two and one half story home sits on the uphill side of Mosswood Road and behind 6 Mosswood Road and shares the entry stairs for 6 and 10 Mosswood Road. The exterior is finished in ship-lap siding on the first story and jazz stucco on the upper one and one half stories with a low gabled roof and overhanging eaves. The side entry is on the north under a gabled portico through an arched doorway.

41. 10 Mosswood Road – ONE NON CONTRIBUTING: house – significantly altered

42. 11 Mosswood Road - TWO CONTRIBUTING: house;
cottage and garage combination (a)

Year garage-apartment built: 1925
Year house built: 1929
Architect: Morgan, Julia
Original owner: Jepson, Willis

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This two story rectangular structure with stucco exterior and shallow hipped terracotta tile roof is one-room deep and symmetrical with single lite casement windows dominating all sides. The narrow depth and window dominance afford spectacular views of the bay from each room. Corner windows are canted on all four corners. The windows of the southeastern and southwestern elevations are arched, while all others are single or double rectangles. The back yard is terraced with a 10 foot high concrete retaining wall that edges the property and forms a privacy barrier between the garden and the public Mosswood Lane to the west. The front yard towards the east is level. The front gate located at the second switchback of Panoramic Way (where Mosswood Road begins) is a reminder of days when there were fewer cars navigating the switchback. Ironwork configured in a herbarium theme flank the front arched entry way door. Three fireplaces are distinctive, especially a carved "Herbarium Mantel" by Jules Suppo. The interior also boasts a single person "birdcage" elevator between the first and second stories. Exterior alterations include a wooden privacy fence and alternate gated entrance on the northeast side at the street as well as a sliding glass door which led to an outdoor balcony (later added and now dismantled) along the southwestern side of the house. The sliding doors are not visible from the street and therefore do not detract significantly from the overall integrity of the structure. The two car garage with small apartment above was originally built for Willis Jepson, renowned Botanist and UC Professor, while Julia Morgan completed the design and construction of his home at 11 Mosswood.^{xiii} The apartment is a rectangular stucco structure with terracotta tile hipped roof. Fenestration consists of multi lite casement windows and a set of French doors opening to a small ornamental balcony on the southern exposure. Entry is gained from the west up a narrow flank of wooden stairs across a portico running the length of the second story western façade.

43. 13 Mosswood Road - TWO NON-CONTRIBUTING: house;
retaining wall (a)

Year designed: 1939
Year built: 1975
Architect: Wright, Frank Lloyd
Original owner: Feldman, Joseph

Built entirely with four materials – glass, wood, concrete, and brick - the exterior of this one-story is rust-colored custom-made brick on the street side and floor to ceiling walls of glass on the back and sides where panoramic bay views, terraces, and living spaces meet. A cantilevered roof creates a spacious carport and entrance at the front and provides cover for the terracing on the sides and back. The terrace has been expanded and carried toward the street while access to the terrace has been increased by replacing a window with a door. The downward sloping site is supported by a massive brick retaining wall that not only creates the terrace but is reminiscent of the retaining wall built sixty years earlier at 100 Arden Road (see photo 61.a.1). The horizontal lines of the house are strengthened by the rooflines, the brick pattern, and even a horizontal metal railing painted in rustic red. The interior board and batten walls are made entirely of California clear heart redwood; light fixtures and other interior detail are all original designs of Wright. Clerestory windows surrounded by a band of redwood cutouts serve as walls. The house was originally conceived in 1939 for Lewis N.

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Bell in Malibu but built at the Berkeley location in 1974. The posthumous project was authorized by Olgivanna Wright and overseen by Taliesin Foundation architects.^{xiv} The design, materials and foundation were reworked to suit the northern California character of the new site. For example, "(t)hirty thousand bricks were specially made to the 2 ¼" Eastern U.S., rather than the 2 5/8" California, standard to fit Wright's 13" unit system, here applied to a two-foot-grid parallelogram module."^{xv} The house is significant and its importance is underscored by the support of the Frank Lloyd Wright Building Conservancy. Ronald L. Scherubel, Executive Director of the organization has provided some explanation of the building's history and important qualities.

In the late 1930s, Lewis N. Bell engaged Frank Lloyd Wright to design a house for him on a hilly Los Angeles site. Wright accepted the commission and the plans were completed in 1939 calling for a house of brick and native wood to be nestled into the Hollywood Hills near Mulholland Drive, commanding a sweeping view of Los Angeles. Regrettably, due to the high cost of the construction, the Bells did not proceed with the building of what would have been one of Mr. Wright's more charming, small, early Usonian houses. Wright and Taliesin retained the original drawings.

In 1974 Mr. And Mrs. Joe Feldman went to Taliesin looking for a Frank Lloyd Wright plan that they could build. After some deliberation with officials at Taliesin, including Kamal Amin, a senior architect and structural engineer with 23 years in the Taliesin Fellowship, Bruce Brooks Pfeiffer, currently head of the Frank Lloyd Wright Archives, and Olgivanna Wright, Wright's widow, they chose the plans for the Bell House as most appropriate for Joe Feldman's site.

The construction followed the original 1939 plans prepared by Wright, as closely as the more modern building and seismic codes would permit. California clear heart redwood is used in the board and batten walls and for trim. The most significant changes include flipping the plans into a mirror image of the original layout to better fit the new site, and constructing a more substantial retaining wall out of brick instead of board and batten. Being in an earthquake zone and on a very steep hill, the main challenge was to insert the necessary reinforcement to maintain the integrity of the aesthetics without the slightest of design changes. None of these modifications detract from the significance of the final structure.

The Feldman House is extremely significant in that it fills a gap in the record of Wright's actual built works, allowing architectural historians and students to see an important early step in Wright's development of the Usonian house, following so closely its introduction with the Jacobs 1 House in 1936, albeit through the eyes and talents of the Taliesin Architects' later adaptation. The house exhibits Wright's early genius for making a very small space seem so large and open. It was his first use of the hexagonal modular design in a smaller house, after its successful introduction in the much larger Hanna House in 1936. The hexagon form which almost eliminates corners, coupled with the expansive windows, allows the living space to flow out onto the deck making the interior space appear much larger than its square footage suggests.

The Feldman House is not yet fifty years old and for that reason has been named a non-contributor. However, as the building approaches the fifty-year mark, it should be re-evaluated and, if integrity is maintained, re-classified as contributing.

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44. 14 Mosswood Road - FOUR CONTRIBUTING: house;
detached garage (a)
cottage (b)
retaining wall (c)

Year house built: 1919
Architect: Baird, Mabel R.
Original owner: Baird, Robert H.
Year garage built: 1936
Architect: Steilberg, Walter
Original owner: Hutchinson, Lincoln

Built on the uphill side of Mosswood Road, this rectangular brown shingle, two and one half story house is entered through a projecting covered porch. An early alteration, it is flanked on the street side with two evenly placed large square four lite stationary windows. Two pairs of French doors originally formed the entryway, which is the same door treatment for 16 Mosswood Road which was also designed by Mabel Baird. The current owner has (as a seismic upgrade) converted the entryway to a single pair of working French doors with a stationary side light utilizing the original doors in the conversion. However, this alteration has not adversely affected the integrity of the original design. A second story sleeping porch forms the wide dormer above the entrance and is inset with three casement windows. The back eastern facing wall of the house is tucked into the hillside. The architect made clever use of the natural features of the site by abutting a tiled terrace to the second story master bedroom. The terrace is reached through multi-lite French doors. Below the terrace, a servant's quarter is tucked off the kitchen entrance to the home. The roof is gabled, and the interior is sheathed in redwood. In 1936 the then owners commissioned Walter Steilberg to design a three car garage. Made of a patented method of making reinforced concrete known as Fabricrete (see section 7, Walter Steilberg), the garage is adorned with simple Art Deco inspired details on the façade. Above the garage is brown shingle north-facing studio with two projecting bay windows to the north, one to the east, and one to the west topped by a gabled roof with exposed rafter tails. A one room wood shingled guest cottage (approximately 9' x 14') conforms to the slope of the hillside and was added to the northeast of the property at approximately the same date as the garage. The cottage has a gently sloping gabled roof with exposed rafter tails and expansive windows on the north and south sides. The front west facing façade is only wide enough for the single entrance door flanked by decorative sidelites and one small single lite casement window. A natural, uncut rock retaining wall extends from the southwest property line to the northeasterly garage, following and defining the gentle curve of Mosswood Road. The entire property is enveloped in coastal live oaks, native shrubs and a few exotics.^{xvi}

45. 16 Mosswood Road - ONE CONTRIBUTING: house

Year built: 1922
Owner/designer: Baird, Mabel R.

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This square-shaped Arts & Crafts influenced bungalow has a rustic exterior being clad in natural wood shingled siding above a concrete foundation for two stories and wide board and narrow batten for the top half story. The roof is a gently sloping gable with exposed rafter tails. The west facing entrance façade of the home is fully symmetrical; four pair of wood casement windows containing eight lites per window are placed two pair on each side of an entry way of ten lite French doors. A second story cantilevered balcony with closely spaced vertical wood spindles projects over the front entrance. The second story west facing facade continues the symmetry with double French doors placed center to the façade and opening to the balcony and flanked by projecting bay windows framed on either side by eight-lite casement windows. The third or half story has one centered eight-lite casement window. A clinker brick fireplace and chimney is visible on the northwest side of the structure. From the rear the home conforms to the sloping hillside and appears to be a single story cottage with entry accessed through a sleeping porch containing four single pane sliding ribbon windows on the front and two sets of triple casement windows on the north and south sides of the porch. Sheltered from the street at the end of a 100' long, steep, ascending path, the house is situated above and behind 14 Mosswood, surrounded by coastal live oaks and bays laurels, yet opened to panoramic views of the Golden Gate Bridge, the Campanile and the surrounding Berkeley hills.

46. 20 Mosswood Road - TWO NON-CONTRIBUTING: house;
detached garage (a) –
later construction (c. 2000)

47. 21 Mosswood Road - TWO CONTRIBUTING: house;
detached garage (a)

Year house built: 1895
Builder: unknown
Original owner: Mouser, Silas
Year moved and remodeled: 1910
Architect: Thomas, John Hudson
Owner: Parsons, Edward T.
Year garage built: 1924

This single-family, two story dwelling was originally a white clapboard farmhouse located where 11 Mosswood Road now stands. In 1910, the house was relocated to its current site and remodeled in the Arts and Crafts style. Close to the road with a very shallow street setback, the exterior is clad in redwood shingles. The shingles are even with the sash, and the windows have no visible frame. The interior was remodeled, and except for the kitchen, the first floor walls and ceiling were paneled in redwood throughout. Open-faced balconies orient to the north and the canyon below. Expansive picture windows on the southwestern corner provide views of the bay and on the north provide views of the canyon. The street side of the house has smaller rectangular single lite casement windows arranged symmetrically on either side of the entry way. The entry door is multi-lite beveled glass protected by a copper sheathed awning which forms the support for a second story bay window.

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48. 29 Mosswood Road - TWO CONTRIBUTING: house;
detached garage (a)

Year built: 1921
Architect: Steilberg, Walter
Original owner: Parsons, Marion

This two and one half story brown-shingle home is a large rectangle upon a concrete foundation. A low-hipped roof surmounts the design and widely overhangs the building in various places. Sited facing the downhill side of Mosswood Road, the home is two stories on the front elevation and three full stories on the rear (facing Strawberry Canyon).

"The walls have a massive, 'bearing' quality because of the relatively small ratio of window to wall area, but the fenestration forms the principal element of articulation for the design. The windows are of varying dimensions, and give an 'at-random' quality to the rear elevation. Banked casements are used exclusively on the upper story. Large fixed-sash picture windows are found on rear." HRI The main floor interior is almost exclusively finely finished redwood board and batten on both walls and ceilings. An original sleeping porch is with accordion wood sash windows is maintained on the northern (canyon side) of the second story. In 1985, the kitchen was enlarged and a family room was added to the north eastern side of the home but the addition is sympathetic (including a hipped roof and redwood shingle siding) with the original structure and does not detract from the overall integrity. Built just prior to the devastating North Berkeley fire of 1923, this home still has the original roof top sprinkler system, installed by the owners after 1923 to protect against future catastrophe. A two-car garage, clad in brown-shingle, on two story high stilts, was built as part of the same project. The garage has a side gable and a shed roof off the back with a pair of casement windows that open to the canyon. On the east side wall, window openings are filled with green, glazed, perforated Oriental tiles. Plain, stained, wood doors are recent additions.

49. 37 Mosswood Road - TWO CONTRIBUTING: house;
retaining wall (a)

Year built: 1911
Architect: Ratcliff, Walter H. Jr.
Original owner: Allen, James T. Allen

Built on the downhill side of Mosswood Road, the three story brown shingle rectangular house has a steeply pitched side-gable roof, a steeply pitched front gable over the inset front porch, and gables over each of the windows on the top floor. The house is symmetrical with the entrance centered in the front and rows of multi-paned casement windows on each side. A substantial battered concrete foundation supports the structure. A curved roofline graces one upstairs deck which is enclosed on two sides and suitable for sleeping. This house is on the edge of the neighborhood, sited above and behind 67 Canyon Road and borders the University's Ecological Study Area. An open faced balcony opens off the northern exposed canyon side of the house and next to the adjacent oak-bay woodlands of the Ecological Study Area. In general, windows are large and plentiful serving to bring nature inside; in the living room, each sash of the large casement windows is divided into ten panes. The east elevation dining room has a large rectangular picture window overlooking the oak-bay

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woodlands next door. From the street, the brick stairway and retaining wall gracefully curves to follow the contours of the hillside and forms a built-in brick bench as it reaches the front entryway. The original plans show a trellis at the entrance, but that was before the oak trees were mature on this north facing lot. Some windows have been added to the side and back on the eastern and southern corner of the main floor, but otherwise the exterior is unaltered.

The University land next door was not then known as the Ecological Study Area. However, it was a preserve where "no shooting is allowed at any season..."^{xvii} and the grounds of 37 Mosswood were part of that larger landscape. As described by Mrs. Amelia Sanborn Allen, "Our house is in the middle of a dense grove of young live-oak trees, on the southern wall of the canyon opposite the University dairy, and to the south and west of the swimming pool."^{xviii} The landscape of 37 Mosswood Road and the adjacent University land remains much the same today.

50. 38 Mosswood Road – ONE CONTRIBUTING: house

Year built: 1915

Owner/designer: Parker, Carleton

This three story roughly square structure is sided with natural wood barn shakes under a flat roof with overhanging eaves. The dwelling steps steeply down the hillside from Arden Road although its address is Mosswood Road, and its entrance is off the Arden Steps. The second story entrance is from a side porch with a balcony above. Fenestration consists of single lite casement windows and two picture windows on the western exposure claiming views of the Golden Gate from the second story living room. Cantilevered porches on the northern exposure of the first and second stories overlook Strawberry Canyon. The third story back of the house is at street level with access from the cul-de-sac at Arden Road adjacent to the massive clinker brick retaining wall for 100 Arden Road. After a fire in the 1940's the original steeply pitched gable roof was replaced with the current flat roof and broad eaves. In 1982, a deck was added to the first story on the northern (canyon) side of the house of house. The alterations do not substantially detract from the integrity of the dwelling.

51. 1 Orchard Lane - ONE CONTRIBUTING: house

Year built: 1922

Architect: Steilberg, Walter

Original owner: Steilberg, Walter

This three-story, 12-room single family house was the principal residence (and one of three related structures) for Walter Steilberg and his family (rf. 1 Panoramic Way and 4 Mosswood Lane). The exterior is finished in unpainted/unstained redwood shingles and rose-colored stucco. Green painted window trim matches the green of the surrounding almond trees, whereas the underside of the eaves was once sky blue. An octagonal tower dominates the western façade; the third story of which has a balustrade formed by his trademark glazed green Oriental perforated tiles. Exemplifying the relationship of the building and its site, "the house climbs a slope with each story opening onto

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terraces or decks, with glass doors echoing the fenestration."^{xxx}...glass dining room with mirror doors on east wall reflecting the bay view. This room is duplicated on the third story but here a bank of glazed perforated Chinese tiles forms a balustrade. Architectural features include mullions of amber glass, elaborate and expansive fenestration, custom-designed lighting fixtures, door handles, and paint custom-ordered to match outdoor colors. The south wing was built as bedrooms and the top-floor (east) porch was enclosed in 1927. Expansion of the top floor, south-facing study in 1945-46 involved changing the small peaked-roof space to a 10'x12' flat-roofed space suitable for use as a bedroom. At about the same time, an outside door (glass-paned) was added to a corner of the north, second-floor bedroom, in order to ease access to that room which was being converted to Steilberg's office. The original wood shingle roof has been replaced with composition shingle.

52. 3 Orchard Lane – TWO CONTRIBUTING: house;
retaining wall (a)

Year built: 1915
Architect: Bangs, E. Geoffrey
Original owner: unknown

This rectangular two story wooden structure with wood shingle siding stained a dark brown has a gently gabled roof. The house conforms to the hillside, and its second story roofline is on grade with the switchback where Panoramic Way intersects Mosswood Road. The fenestration consists primarily of large picture windows, commanding expansive views of the Golden Gate. Some wooden windows have been replaced by aluminum but size and locations remain as originally built. A second story portico is reached by a pair of large French doors and is shielded from the western exposure by a generous pergola. The property is accessible by foot in three ways - from the west via Mosswood Lane, from the south via a classical entrance marked by a delicately painted #3 on a pillar mid-way up Orchard Lane, or from the south east by way of the topmost landing of Orchard Lane as it meets Panoramic Way at the Mosswood intersection. Built five years after the completion of Orchard Lane, the main entrance was then from Orchard Lane and designed in the beaux-arts style. The design is carried through to two terraces that wrap around the back of the house mimicking the pattern of the classical balustrades.^{xix} The retaining wall to this terrace can be seen from Mosswood Lane below. The main entrance to the 3 Orchard Lane is from Orchard Lane and the design of the private staircase is in the beaux-arts style in keeping with the vernacular of the public staircase. The terrace is likewise designed in the Beaux-arts style and is graced with concrete balustrades supported by two massive curved retaining walls one of which can be seen from Mosswood Lane below. The similarity of design between the Beaux-arts staircase at 3 Orchard Lane and Orchard Lane itself makes the private entrance appear to be a branch of Orchard Lane.^{xx}

53. 19 Orchard Lane – ONE CONTRIBUTING: cottage

Year built: 1950.
Builder: Jevans, J.H.
Original owner: Bush, Philip

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This small (26' x 26') one and one-half story cottage with its flat, tar and gravel roof is accessible solely by foot, by way of the public Orchard Lane steps. The small, simple box-like structure is unobtrusive as it descends the hillside upon which it is built. The southern and eastern facades are devoid of fenestration. The original entry door situated next to the red brick chimney on the southern façade is no longer used and has been replaced with clapboard siding to match the rest of the cottage and does not adversely affect the integrity of the structure. Entry is through a private gateway via the deck which runs the length of the western façade. The western façade is dominated by French doors providing panoramic bay views and entry to the cottage. Two small fixed rectangular wood windows on the northern façade comprise the only other fenestration. The cottage sits atop a cistern formerly used as a reservoir fed by an underground spring. The redwood clapboard siding has been painted brown and is illustrative of the Second Bay Region Style.

54. 21 Orchard Lane – ONE CONTRIBUTING: cottage

Year built: 1949
Builder: Brodhoff, C.O.
Original owner: Parker, Alfred

This rectangular one and one-half story cottage is clad in redwood clapboard stained a dark brown. The shallow pitched gable roof is notched in the southeastern corner in order to accommodate a mature coastal live oak tree but is otherwise symmetrical. The cottage is accessible only by foot by way of the Orchard Lane steps. The unadorned entrance to the house faces the hillside to the east under a small shed roof. The western façade is dominated by three pairs of eight-lite casement windows which open the cottage up to the panoramic bay view. A large clinker brick chimney and a single eight-lite casement window dominate the southern exposure visible from the Orchard Lane path. This cottage casually combines elements from both First and Second Bay Region Styles into a small, unified whole.

55. 59 Arden Road (formerly 30 Arden Road) - ONE CONTRIBUTING: house

Year house built: 1912
Builder: Junk-Riddle Co.
Year garage built: 1924
Original owner: Washburn, O.M.

This two and one half story rectangular wood shingled home with gabled roof, exposed rafter tails, broad eaves and angled support brackets for the beam ends, is mostly hidden from Arden Road. The main entrance on the south side of the dwelling is from Arden but the home is most visible from the Orchard Lane steps on the north side. The western façade is open to light and bay views through wide double hung sash windows wherein the upper sash is divided vertically into four panes. A sun room with a band of windows brings in light from the west, and a square bay window with shed roof opens the house to wooded views on the south elevation. The chimney is clad in concrete. Minor exterior alterations include replacement of two upstairs windows without vertical lites and the addition

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of an attached garage of hollow tile sometime prior to 1929. The garage is compatible and does not detract from the overall integrity of the home. The original house burned to the ground on December 26, 1912 and was rebuilt soon thereafter.

56. 65 Arden Road - ONE CONTRIBUTING: house

Year built: 1935
Architect: Steilberg, Walter
Original owner: Parker, Alfred

This L-shaped natural barn-shingled home with hipped roof and wide overhanging eaves has a shallow street setback as it steps down the western slope of the hillside from Arden Road. The front of the house is dominated by a two car garage which abuts the house to form the L. The garage is closed from the street by undistinguished redwood doors. A small brick terrace enclosed by a wooden fence and gate leads to the main entry door protected by a shed roof projecting from the garage wing. There are no windows on the street side and main entrance. The only ornamentation is found on the entry door where a small privacy window is carved in an "Oriental" motif. From Arden Road the home appears to be a one story cottage attached to a large garage. From the Orchard Lane approach the house is three stories tall and is dominated by a three sided turret like structure with double single lite casement windows in each face of the turret, giving commanding views of the Bay to the west. A side second story entrance is located off of Orchard Lane.

57. 70 Arden Road - ONE CONTRIBUTING: house and garage combination

Year built: 1939
Architect: Wurster, William
Original owner: Gardner, Eleanor

This rectangular wood siding and stucco two story home runs parallel to the street in a shallow L configuration. The second story living space above a line of four single stall garages on the street level has a flat roof with overhanging eaves. The main entrance is from the north side in a recessed alcove barely visible from the street. Built on the uphill side of Arden Road three very large casement windows on the western façade provide an expansive view of the bay. The stucco has had an ochre pigment added before application. A projecting balcony with horizontal board on its face runs the entire length of the western facade. Redwood garage doors are compatible. This home is a fine example of Second Bay Region Style architecture.

58. 76 Arden Road - ONE CONTRIBUTING: house

Year built: 1925
Contractor: Mason-McDuffie Co. Designer unknown
Original owner: Bradley, H.W.
Interior second unit; 1939

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Architect: Wurster, William

This two and one half story box style Mediterranean-influenced stucco over wood two-story structure has a flat recessed roof and is on the uphill side of Arden Road facing the Bay. The main entry is from the south side up two flights of steep concrete steps. Two large picture windows each flanked by casements dominate the western façade, one window per story. The second story window is enhanced by an inset in the stucco wall above in the shape of a elongated half oval. The half story basement was converted to a second unit in the 1940s and designed by William Wurster. The unit has characteristic modern features such as a cement floor in bathroom and kitchen, plywood paneling on the walls, and a Celotex ceiling.

59. 89 Arden Road – ONE NON-CONTRIBUTING; house remodeled extensively in 1991.

60. 95 & 99 Arden Road - ONE NON-CONTRIBUTING: duplex - later construction (c. 1953)

61. 100 Arden Road (formerly 47 Arden Road)- THREE CONTRIBUTING: house;
detached garage (a)
retaining wall (b)

Year built: 1915

Designer/owner: Hersam, Ernest A.

This imposing two and one half story rectangular structure is sheathed in natural wood shingles and sits on a concrete foundation under a side gabled roof with wide over-hanging eaves and exposed rafter tails. A remarkable clinker brick retaining wall and entry way envelops the property and presents an inviting though fortress-like effect as it follows the gentle curve of the Arden Road cul-de-sac. Several landings twist and turn to reach the main entrance on the south side of the property where a pitched gable porch roof protects the classic Craftsman door from the direct sun. To the left of the entrance is a secondary retaining wall with clinker brick buttresses forming the border for a garden and a built-in clinker brick bench. Fenestration consists of three large square picture windows dominating the western façade opening the living room to spectacular bay views. On the second story, double hung sash windows have six lites in each of the top sashes, and a balcony is supported by wooden angle brackets. Inside the house, walls and ceilings are paneled in unstained clear-heart redwood. The garage is built into the hillside and faced by the clinker brick retaining wall with a high-opening arched doorway and an unremarkable wooden door.

ⁱ Siegel and Strain, Architects, Historic Structure Report California Memorial Stadium (Berkeley: University of California Office of Planning, Design, and Construction, 1999), p. 13.

ⁱⁱ Suzanne B. Riess, editor, *The Julia Morgan Architectural History Project* Vol. 1 (Berkeley: The Regents of the University of California, 1976), p. 109-110.

ⁱⁱⁱ Gray Allen Brechin, *Berkeley Urban Conservation Survey* (BAHA); Marilyn Wright Ford, "Panoramic Hill: The Early Days," in *Panoramic Hill: Berkeley's Most Romantic Neighborhood*, revised edition (Berkeley: BAHA, 1996), pp. 1-2; Riess, p. 104.

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^{iv} Frank Soulé, Jr., Map of Strawberry Valley and Vicinity – *Showing the Natural Sources of the Water Supply of The University of California With proposed System of Reservoirs, distributing Pipes, etc.*, 1875.

^v Berkeley Urban Conservation Survey (Berkeley: Berkeley Architectural Heritage Association, 1977).

^{vi} Not shown on 1911 Sanborn maps but building altered in 1921.

^{vii} A search of building permits, zoning permits, finance records, and BAHA files found no information about original owner or architect.

^{viii} Warren and Lorna Byrne, *Notes on the Exterior* (Berkeley: Berkeley Architectural Heritage Association, block 10-1861, 2004).

^{ix} Soulé.

^x Riess, p. 103

^{xi} Interview of Florence Stratton Reinke by Anthony Bruce and Lesley Emmington-Jones (Berkeley: Berkeley Architectural Heritage Association, audio tape, October 1977).

^{xii} Ibid.

^{xiii} Interview of Howard Mel by Fredrica Drotos, 10/30/04.

^{xiv} Interview of Jeanne Allen by Janice Thomas, 10/30/04.

^{xv} William Allin Storrer, *The Architecture of Frank Lloyd Wright: A Complete Catalog*, 2nd ed. (Cambridge, Massachusetts: The MIT Press, 1991) A436.

^{xvi} Interview of Hilary Bendich by Fredrica Drotos, 11/8/04.

^{xvii} Amelia Sanborn Allen, "Birds of a Berkeley Hillside," in *The Condor* Vol. XVII (March 1915), p. 79.

^{xviii} Allen, p. 78.

^{xix} Interview of Jane Bendix, current owner of 3 Orchard Lane, by Janice Thomas on 10/23/04. Mrs. Bendix described a watercolor of the exterior of her house which was signed by Bernard Maybeck. She believes he had a role in designing her house.

^{xx} Ibid.

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SUMMARY

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.

HISTORIC CONTEXT

Architecture

Late nineteenth-century California residential architecture for the middle and upper middle classes was characterized for the most part by repetitive floor plans, wood construction, and decorated interior and exterior surfaces. These decorated surfaces reflected the possibilities suggested by mass produced illustrations and realized by steam-driven machinery in wood-working factories more than they did any conscious aesthetic ideas. Painted houses of this sort line the streets of Berkeley's new neighborhoods that were expanding with the University of California, notably the College Homestead tract on the south side of the campus, the principal residential neighborhood for the University. In later years, houses like these came to be identified collectively as "Victorian," or labeled by stylistic terms as Italianate, Eastlake, or Queen Anne.

Victorian Berkeley was little different from Victorian neighborhoods throughout California and the rest of the United States. Likewise, Victorian America had many similarities with comparable districts of Europe and other industrialized countries. The common ingredient in all of these places was the recent and rapid industrialization of societies. Everywhere, industrialization resulted in a growing middle class and, at the same time, a growing gap between those who could afford to live comfortably and those who struggled in poverty. The architecture we now call Victorian was developed to accommodate those who benefited

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materially from industrialization. The plentiful and conspicuous architecture of Victorian houses struck many as a symbol of the age, for both good and bad.

In England, where the differences between rich and poor were particularly strong, and the differences between middle class neighborhoods and working class slums were particularly evident, powerful critics focused their attacks – and solutions – on architecture. John Ruskin and William Morris saw the middle ages as the last great period for architecture, which went into decline with the Renaissance and sunk to its nadir during the Industrial Revolution in the nineteenth century. Since the middle ages, when skilled craftsmen were directly responsible for the creation of beautiful buildings, industrialization had resulted in the estrangement of workers from their work and in the consequent ugliness of buildings and cities.

Out of this critique, and the examples of William Morris, came the Arts and Crafts Movement. This movement began in England and subsequently spread to the United States and other industrialized countries. It sought to replace mass-produced, machine-made architecture whose appearance alienated people from society with hand crafted architecture whose appearance helped to unify producers and users of architecture, among different elements of society.

The Arts and Crafts movement influenced progressive architects and clients in cities throughout the United States – although usually more for its architectural than its social aspects. The work of H.H. Richardson and Frank Lloyd Wright, the Shingle Style in New York and New England, the Mission Revival, and other regional expressions all reflected aspects of the ideas and imagery of the Arts and Crafts movement in various ways. However, nowhere did the Arts and Crafts movement emerge more directly than in the San Francisco Bay Area, and nowhere did it flourish more extensively than in Berkeley.

Arts and Crafts ideas were introduced to the San Francisco Bay Area by Joseph Worcester, a Swedenborgian minister who cultivated “rustic qualities” in a house in Piedmont in 1876 and in four shingled houses on top of Russian Hill in San Francisco in 1888-1889.¹ These were followed in the 1890s by the generally scattered work of four recently arrived architects to the Bay Area – Ernest Coxhead, Willis Polk, A.C. Schweinfurth, and Bernard Maybeck. Trained in different ways, beginning in the late 1880s these sophisticated architects introduced to the region buildings with a new kind of imagery for clients who shared their rejection of the architectural mainstream. Although each architect had a distinctive approach, the four produced buildings with certain common characteristics – unpainted redwood structures often clad in shingles, reliance on vernacular sources (of various kinds, including California barns and working buildings, California Missions, English country architecture, and the architecture of rural northern France), hand craftsmanship (ironically, most of these houses were just as dependent on industrial processes and machine-driven tools as were those in Victorian styles), and compositions of contradictory volumes, surfaces, and details.

In the mid 1890s, the groundwork was laid for a broader impact of Arts and Crafts ideas and of the work of these architects. A house designed by Maybeck for himself lead to another

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designed for his friend, the poet, Charles Keeler, and subsequently to several others near Keeler's house on Highland Place in north Berkeley. In the development of these houses, Maybeck and Keeler promoted a radical view of residential architecture, with simple houses built in harmony with nature. These ideas were given a forum with the establishment of the Hillside Club in 1898 – at first a women's club which met in Schweinfurth's shingled Unitarian Church on the south side of the campus. Reorganized by Maybeck and Keeler to include men in 1902, the Hillside Club functioned as a persuasive force for the dissemination of Arts and Crafts ideas in Berkeley. The publication in 1904 of the *Simple Home* by Keeler made these ideas more coherent and more widely available. From Keeler's book and Berkeley's example, progressive architects and clients built neighborhoods of rustic, unpainted, wood houses that blended with their natural settings on streets laid out to minimize disruption to the typically hilly topography. These neighborhoods formed a sharp contrast to more ordinary districts of painted houses on regular lots, whose landscaping and decoration emphasized both their separation from nature and their origins in industrial society.

Beginning around the turn of the century, enclaves of Arts and Crafts houses began to develop in scattered parts of the San Francisco Bay Area. While the largest such neighborhood was on the north side of Berkeley, others developed on the south side along Panoramic Way and Hillside Court; along Edgewood Avenue in San Francisco; in the Professorville neighborhood in Palo Alto and in Mill Valley, Sausalito, Ross, and San Anselmo in Marin County. In addition, Pacific Avenue where it faces the Presidio in San Francisco, was built as an urban version of what was generally a suburban development.

Mostly begun in the early 1900s, these neighborhoods of Arts and Crafts houses were built up with a consistent character during the 1910s and 1920s. Where there was room for infill buildings, or where there was room to expand, these neighborhoods grew in later decades in ways that were stylistically different but, at the same time, similar in important underlying ways. The results were often neighborhoods that were stylistically diverse but still harmonious and cohesive, unified by the use of materials, relationships to the natural setting, reference to vernacular sources, and employment of architectural contradictions. In retrospect, scholars have identified a Bay Area Tradition in architecture that, through a series of phases, encompasses a variety of styles.ⁱⁱ

Following the first phase of the Bay Area Tradition, characterized by two generations of Arts and Crafts architecture designed by Coxhead, Polk, Schweinfurth, Maybeck, Julia Morgan, Louis Christian Mullgardt, John Hudson Thomas, and others, were two later phases. The second phase from the 1920s to 1950s drew on the imagery of small cottages based on northern European vernacular designs; the historical vernaculars of California in wood and stucco – Spanish Colonial, Monterey, and rural farms; and a regional modernism, typified by the work of William Wurster. The third phase, of the 1960s to 1970s, was characterized by the work of architects Charles Moore, Donlyn Lyndon, William Turnbull, and Joseph Esherick. The emblematic project of this phase was Sea Ranch, inspired both by rural California barns and by the work of the modern architect, Louis Kahn.

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In neighborhoods that were established in the first (Arts and Crafts) phase of the Bay Area Tradition, infill and additions to the neighborhood with buildings from subsequent phases was common and typically resulted in still-compatible neighborhoods. The original north Berkeley Hillside Club neighborhood was largely destroyed by a devastating fire in 1923. Wood and stucco houses representing both the first and second phases of the Bay Area Tradition were rebuilt around remnant clusters (for example, along Buena Vista Road) of early Arts and Crafts era houses. On Panoramic Hill, houses from the second phase of the Bay Area Tradition were built on infill lots and up the hill to the east of the original cluster of Arts and Crafts era houses. In these cases and elsewhere, the neighborhoods have remained coherent ensembles through decades of development and change.

Architects

Bernard Maybeck (1862-1957)

Bernard Maybeck was born in New York City in 1862, the son of German immigrants. His father's training in Flemish and Dutch cabinet making and specialization in wood carving, along with his own education at the Deutsche-Amerikanische Schule, deeply influenced the future aesthetic of Bernard Maybeck's architecture. In 1881, Maybeck set sail for Paris, where he studied at the Ecole des Beaux-Arts. In 1886, after five years in Paris, Maybeck returned to the United States and joined the firm of Carrère and Hastings in New York. In 1889 he came to the Bay Area, and eventually joined the offices of A. Page Brown, the most prestigious architectural firm in San Francisco. In 1894 he joined the Department of Instrumental Drawing at the University of California in Berkeley, a move that forever changed Maybeck's career. The largely rural town of Berkeley, with its beautiful hillsides and sweeping vistas of the Bay Area proved to be the perfect canvas for Maybeck to develop his love for German and Dutch medieval architecture, to foster the growth of the Arts and Crafts movement in California. Over the next several decades, Maybeck developed a reputation as an eccentric artist and became one of the most influential voices of the Hillside Club and residential development of Berkeley and the Bay Area. He mentored numerous aspiring architects, including Julia Morgan and Lillian Bridgman, and designed some of the most significant works of architecture in the Bay Area, including the First Church of Christ, Scientist, in Berkeley, and the Palace of the Fine Arts in San Francisco. Maybeck died on October 3, 1957 at the age of 95.ⁱⁱⁱ

On Panoramic Hill, Maybeck designed the single-family dwelling at 23 Panoramic Way. The Swiss-chalet style home was designed in 1901 for law professor George Boke. The Boke House, as it has come to be known, has been copied twice there being one on Mather Street in Oakland and another in Aberdeen, Washington.^{iv} Although the houses were built from the Boke house plans, which Maybeck had himself sold, he did not supervise construction of the Oakland and Aberdeen structures, and as a result, there are subtle differences in detail from the original.^v

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Ernest Coxhead (1863-1933)

Ernest Coxhead was born in Eastbourne, England in 1863. He trained at the Royal Academy and Architectural Association in London. He and his brother, Almeric, immigrated to Los Angeles, California, in 1886, where they opened an architectural practice together. Three years later, they relocated to San Francisco, where Coxhead stayed until his death in 1933. Inspired by the natural beauty of the Bay Area and influenced by the English arts-and-crafts movement's search for "truth" in design, Coxhead aspired to create a regional style that celebrated and respected the natural surroundings of the area. He favored English country architecture in his domestic designs - steeply pitched roofs, restrained informal exteriors that offered few clues to the interior design, formal interiors, and asymmetrical floor plans that lent themselves to elements of surprise and freedom of expression. His early houses were clad with brown shingles, and although shingled houses had long been popular in the American suburban and rural landscape, he, along with such contemporaries as Willis Polk, A.C. Schweinfurth, and Bernard Maybeck, was responsible for bringing idealized rustic beauty to an urban environment. A trip to Europe, with a stop en route at the World's Columbian Exposition in Chicago, along with America's growing interest in classicism and Beaux-Arts architecture, influenced Coxhead's later, larger houses, but their impact did not have the same reach as his earlier, shingle homes. Coxhead died in Berkeley in 1933.^{vi}

On Panoramic Hill, Coxhead designed two brown shingle single-family dwellings during the first decade of the 20th century. Both were located on Canyon Road before Strawberry Creek had been culverted and the stadium built. The first of these Coxhead-designed houses was built in 1904 for Professor of Logic and Rhetoric Charles Rieber at 15 Canyon Road. The site sensitive design conforms to the lateral curvature of the hillside and its footprint is U-shaped and slightly akimbo as it wraps around the hill. The orientations of this complicated footprint are to both the bay and the canyon where Strawberry Creek flowed. A courtyard created inside the U-shape structure is the back of the house, a formal entrance, and having a terraced garden backdrop. The second of the Coxhead-designed houses on Panoramic Hill was built in 1905 for San Francisco fine-arts dealer Frederick Torrey at 1 Canyon Road. Also facing west with views, this brown shingled residence has dormer windows and a complicated footprint with numerous courtyards.

Julia Morgan (1872-1957)

Julia Morgan was born in San Francisco in 1872 and raised across the bay in the then affluent suburb of Oakland. She enrolled in the University of California in 1890, where she was one of few women who majored in Civil Engineering. A lifelong friendship, mentorship, and professional partnership began during her junior year, when Morgan met and studied under the young and eccentric architect and professor, Bernard Maybeck. After graduating with honors in 1894, Morgan collaborated with Maybeck, who encouraged her to study at his *alma mater*, the École des Beaux-Arts. Six years later she returned to California, the first to earn a degree in

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architecture at the École des Beaux-Arts, and soon found work with John Galen Howard. In 1904 she set up her own business in the carriage house of her parents' home. By 1905, she had moved her practice to San Francisco, and from 1907 until her final retirement in 1951, Morgan located her practice in the Merchants Exchange Building in San Francisco. Apart from a short-lived partnership with Ira Hoover, she retained sole ownership of and authority over her architectural practice, which was one of the most prolific in the region. Though William Randolph Hearst's estate near San Simeon remains Morgan's most famous commission, she built her practice on the hundreds of houses and dozens of clubs, charities, schools, and other organizations of an extensive and influential women's network. Julia Morgan died in San Francisco in 1957.

On Panoramic Hill, Morgan designed three structures. One was an apartment building located at 5-11 Panoramic Way in 1912. This two story basement apartment building of stucco and half-timber was designed in a restrained Tudor mode. The symmetrical structure is U-shaped with a court yard in the back and gable roofs on the back wings. Windows dominate the front elevation so as to take full advantage of the panoramic views of the bay. In the front of the building is a common staircase and entryway for four apartments. Bay views are on the west elevation. The structure is subtle in design with the half-timbering being the predominant design element.

While still working with Ira Hoover in 1912, Morgan designed a brown shingle "apartment house" for Elsie Lee Turner, a childhood friend, at 66 Panoramic Way. In 1929, Morgan designed a single-family dwelling for Professor of Botany Willis Jepson at 11 Mosswood Road. A rectangular wood-frame stucco structure with tile roof, the Mediterranean style house is one room deep which brings light and the outdoors into each room.

Walter Steilberg (1887-1974)

Walter Steilberg was born in Louisville, Kentucky, in 1887, and grew up in San Diego, California. During his high school years, Steilberg spent his summers working in the offices of Irving Gill, widely recognized as one of the most influential architects in modernism. Steilberg moved to Los Angeles after high school graduation and worked for Myron Hunt, most famous for such projects as the Rose Bowl in Pasadena, Caltech, Pomona, and Occidental College campuses, and the Pasadena Public Library. Steilberg studied architecture at the University of California, graduating in 1910 with a bachelor's degree in architecture and minor in structural engineering. Steilberg worked with Julia Morgan for ten years, before establishing his own office in 1920. He continued to acquire significant engineering work from Morgan, including that of the Berkeley City Women's Club, Pasadena YWCA, and work related to Hearst Castle. The devastating 1923 Berkeley fire, which scorched the hills to the north of the University campus and destroyed 400 buildings, inspired Steilberg to develop more fireproof construction materials. He patented a method of making reinforced concrete known as Fabricrete, which utilized thin stucco membranes to create a vertical air cavity.^{vii} Steilberg was designing residential structures during the Great Depression. At the start of World War II, Steilberg was 54 years old and rather than

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enlisting he worked for a company in Seattle designing army bases. After the war, Steilberg served as structural engineer for the 1949 renovation work of UC Berkeley's Memorial Stadium. He died in 1974.

Steilberg's buildings on Panoramic Hill demonstrate his talent for designing domestic architecture, and there he would find a suitable location for two family homes among other structures. His first family home was located at 38 Panoramic Way, but ended tragically when both his first wife and daughter died from influenza. He was asked to design 1 Orchard Lane for Mrs. Mary V. Ferguson, who would become his mother-in-law, upon marrying Mrs. Ferguson's daughter Elizabeth. There he would raise his family and live for the remainder of his life. While 1 Orchard Lane was under construction he lived in the brown shingle cottage he designed at 1 Panoramic Way.

After the Berkeley hills fire of 1923, Steilberg's designs were intentionally as fireproof as possible: "I watched 400 buildings burn to the ground and decided to build a fireproof house."^{viii} His design solutions were to develop the Fabricrete system while also utilizing metal window sashes, tile window sills, and floors of reinforced concrete. To demonstrate the feasibility of the Fabricrete system, Steilberg designed 101 Panoramic Way which is a two car garage at ground level and a two story house above. The reinforced concrete was used throughout and even for a vaulted ceiling in the living room. Steilberg used the same Fabricrete system to build five garage spaces on the ground level with a cottage above at 6 Mosswood Road. This would be rental property for the owner Charles Mel. The five garage openings were covered with muted colored, striped cotton curtains to soften the potential bluntness of the long five car garage. The Fabricrete cottage at 4 Mosswood Lane was built on Steilberg's family property that included 1 Orchard Lane and 1 Panoramic Way. It served as income property.

Steilberg was commissioned to design two other garage-apartment combinations (1 Canyon Road and 14 Mosswood Road) on Panoramic Hill both of which were built with reinforced concrete at ground level with brown shingle cottages on top.

Steilberg also was commissioned to design several houses on the hill, e.g. the brown shingle house for Marion Parsons at 29 Mosswood Road in 1921, the brown shingle house designed for Florence Atkinson in 1928 at 59/61 Panoramic Way, the brown shingle cottage for Lenore O'Connor at 45 Canyon Road in 1924, and the brown shingle residence at 65 Arden Road in 1935 for Alfred Parker.

Walter H. Ratcliff, Jr. (1881-1973)

Walter H. Ratcliff, Jr. was born in London in 1881. The family immigrated to America in 1893, finally settling in Berkeley, California. Ratcliff attended the University of California, where he

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majoring in chemistry and graduated with honors in 1903. During his undergraduate years Ratcliff developed an interest in architecture and designed his first speculative house in Berkeley in 1902. Over the next few years he designed and built a number of brown-shingle speculative houses in Oakland and Berkeley. In 1904, Ratcliff attended the British School in Rome. Two years later, he returned to Berkeley and worked in the offices of John Galen Howard. By 1908, he had started his own practice, first in San Francisco, then in Berkeley (where it is now the oldest East Bay firm), and continued to design both great and small, mostly English-influenced homes. In 1913, the city of Berkeley appointed Ratcliff City Architect, in which position he developed a reputation for both design and economy. Mills College, the women's college in Oakland, appointed him campus architect in 1923; the school's desire for buildings in the increasingly popular Spanish Colonial Revival style sent Ratcliff traveling to Mexico to sketch buildings of the early Spanish colonial period. From that point forward, he alternated regularly between English and Spanish styles. Walter Ratcliff died in Berkeley in 1973.

On Panoramic Hill, Ratcliff designed the brown shingle single-family structure at 37 Mosswood Road. Built in 1911 for Professor of Classics James Allen, the steeply pitched gable roof and the apparent five stories give height to this house built on the downhill side of the street. The presence of coastal live oaks and the abundance of large casement windows combine to give the experience of living in a large, albeit symmetrical and classical, tree house. Several front gables add lift to the house which is supported by a prominent battered foundation.

Robert T. Paine (1869-1946)

Robert Treat Paine was born in Indiana in 1870. A sculptor and technical innovator, he studied at the Chicago School of Art and also under Augustus Saint-Gaudens at the Art Students League in New York. While in New York, Paine invented a "pointing-up" device for mechanically tracing the outlines of a sculpture and reproducing them on a magnified scale, a process which had previously been done by hand. The first piece thus enlarged was the 1896 model for Saint-Gaudens' William Tecumseh Sherman Monument, a heroic-size bronze group standing at the 59th Street entrance of Central Park in New York City. After working in Italy, Paine moved to Berkeley in 1913 and in 1915 was commissioned to work on the upcoming 1915 Panama-Pacific Exposition in San Francisco. In this capacity he supervised the installation of sculptural embellishments to the Palace of Fine Arts and also created *The Illustrious Obscure*, a fountain on an island at the north end of the Palace of Fine Arts lagoon. Over three decades, Paine was commissioned to do numerous sculptures and sculptural embellishments by both private individuals and public institutions. His wife Mary Trueblood Paine taught mathematics at the Extension Division of the University of California. One of their two daughters, Evelyn Paine, married architect Robert Ratcliff and lived much of her childhood and all of her adult life in the Panoramic Hill neighborhood. Robert T. Paine died in 1946.

On Panoramic Hill in 1917, Paine designed his personal studio at 94 Panoramic Way although the building would serve primarily as his family residence. As a sculptor for numerous public

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installations, he was often living on-site and away from home. The house at 94 Panoramic Way has a handcrafted doorknocker, unusual exterior sheathing, e.g. tarpaper in combination horizontal board siding, and an unusual roofline that is nearly flat but slightly cambered. In response to slides caused by an underground spring at 74 Panoramic Way, Paine designed a fountain for the downhill property at 72 Panoramic Way.^{ix}

John Hudson Thomas (1878-1945)

John Hudson Thomas was born in Ward, Nevada in 1878 and grew up in the San Francisco Bay Area. After graduating from Yale University in 1902, he enrolled in the architecture program at the University of California and studied under the tutelage of John Galen Howard and Bernard Maybeck. Thomas worked for Howard for a short time, before entering into a partnership with George T. Plowman in 1906. During this period of his career he designed, with Plowman, a series of redwood bungalows which established his reputation. In 1910 he established his own practice. He continued to design wood houses when clients requested them, but he became deeply involved with exploring the visual possibilities of working in stucco. Thomas borrowed ideas from a range of sources and transformed and integrated them into very complex compositions. Among the most influential architects in Thomas's career were Adolf Loos, Otto Wagner, Charles Mackintosh, and Charles Voysey. A member of the Hillside Club, he mastered the archetypal Craftsman style advocated by Charles Keeler, but Thomas's early work also shows a whimsical exploration in Mission, Gothic, Tudor, Art Nouveau, English Cottage, and Viennese Secessionist styles. After 1915, however, Thomas designed more literal interpretations of historical styles, a notable feature of the second Bay Area Tradition. Thomas died in 1945.

John Hudson Thomas only designed one house on Panoramic Hill, and it was a remodel at that. However, his work in 1910 to remodel a farmhouse and the first house in the subdivision of University Hill, was important as an expression of Arts and Crafts period ideals in general and the early environmentalist owners', Edward and Marion Parsons', ideals in particular. The structure at 21 Mosswood Road was transformed from a white clapboard exterior to cladding in brown shingle. The downstairs interior was sheathed entirely in redwood. A modest entry was put on the street side with balconies and a more expansive window mass on the back and side which oriented toward the canyon and bay. The entry of the house was rotated 180 degrees, and one of the design challenges was surely to make what was the back side of the house a suitable entrance while the front of the house used every bit of space for windows, balconies, and interior seating areas with no access from this elevation.

Robert W. Ratcliff (1913 - 1998)

Robert Ratcliff was born on May 6, 1913 in Berkeley, California, where he lived his entire life. In 1936, he graduated from the School of Architecture at the University of California at Berkeley. In

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1945, after serving in the Army, he joined the architectural firm of his father, Walter H. Ratcliff. With the Ratcliff firm Robert was responsible for the Mills College general plan and the design of nine buildings there. Much of his work centered around the University of California, not only at Berkeley but at Santa Cruz, San Francisco, San Diego, and Irvine. He was responsible for numerous restoration and renovation projects at the Berkeley campus in the early years of his career. As an architect for the City of Berkeley, he designed the controversial round firehouse on the Alameda, inspired by the triangular site and his desire to build around the mature trees located there. He designed the administration building for the Pacific School of Religion, the Alameda County Administration Building, several buildings at the Lawrence Berkeley National Laboratory, Kaiser Hospital, Fernwald Student Housing and Highland Hospital in Oakland. As someone who worked in the Second Bay Region Style, he was heavily influenced by the work of William Wurster and worked as an alumni advocate to change the curriculum of the UC School of Architecture towards Modernism and away from the Beaux-Art system of which his professors had been advocates. Ratcliff and his wife Evelyn, a landscape architect and the daughter of sculptor Robert Treat Paine, were devoted environmentalists and advocated for open creeks and for development inclined toward preserving and enhancing the natural features of a site. Their son Christopher Ratcliff is the third generation of architects to join the family business, Ratcliff Architects. Robert Ratcliff died in 1998.

Ratcliff designed numerous single-family dwellings on Panoramic Hill, but only two within the district boundaries. More importantly than the number he designed is that he chose the neighborhood as the location for his family home at 74 Panoramic Way. The house was built in stages, but the first stage was as early as 1941, at the beginning of World War II. The particular site he chose was a small niche of land within the precarious second hairpin turn on Panoramic Way and above ground of an underwater spring. He also designed the cottage next door at 72 Panoramic Way.

William Wilson Wurster (1895-1973)

William Wurster was born in Stockton, California in 1895. He was trained in the classical Beaux-Arts tradition at the University of California. His San Francisco-based architectural firm Wurster, Bernard & Emmons was formed in 1945. He designed more than 200 homes, primarily in the 1930's, 1940's, and 1950's, which emphasized the relationship between indoors and outdoors, locating windows to intentionally capitalize on views, simplifying and reducing both interior and exterior detail, using indigenous materials, and exemplifying a sensitivity to site. Utilizing these relationships, one particularly influential residential building was the Gregory Farmhouse, which is a rustic, one-story ranch house in Scotts Valley, California. Wurster was responsible for creating the College of Environmental Design at UC Berkeley, which was interdisciplinary in its approach to design, and included Landscape, Planning, Architecture, and Design Arts. He became the College's dean. The building which houses the College of Environmental Design was named for Wurster and his wife Catherine Bauer Wurster, a notable planner, although he did not design the building as commonly thought. Wurster was designing houses during a period of national economic downturn. The characteristic lack of ostentation in his designs was

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especially attractive to wealthy Bay Area residents, who commissioned him to build homes from Lake Tahoe to Big Sur. His designs were warm in comparison to the austere International style of architects, such as Ludwig Mies van der Rohe and Le Corbusier and have been referred to as "soft modernism." Wurster won the prestigious Gold medal from the American Institute of Architects. He died in 1973.

On Panoramic Hill, Wurster designed a boxy garage and cottage combination at 70 Arden Road in 1939 for Miss Eleanor Gardner who lived next door at 76 Arden Road. Wurster also designed an extra dwelling unit to be incorporated into the lower floor of Miss Gardner's home at 76 Arden Road.

Frank Lloyd Wright (1867-1959)

Frank Lloyd Wright was born in Richland Center, Wisconsin. From a young age, buildings fascinated Wright, but rather than architecture he studied civil engineering at the University of Wisconsin in Madison. After school, he moved to Chicago to work for the architectural firm of J. Lyman Silsbee and in 1887, was hired by the firm of Adler and Sullivan who were designing Chicago's Auditorium Building. Louis Sullivan was the young Wright's mentor and "Lieber Meister" (beloved master) and Wright eventually became the chief draftsman and head of the firm's residential design. It was not long before Wright began to develop his own architectural ideas—low, sheltering rooflines, the prominence of the central fireplace and "the destruction of the box" in favor of an open floor plan. Contrary to the firm's policies, Wright began "moonlighting", and was subsequently fired for the betrayal. He left, taking with him, Sullivan's considerable design influence. Wright began his own firm in 1893 and worked out of his now famous Home Studio in Oak Park, an affluent Chicago suburb. In the years between 1893 and 1901, Wright produced 49 buildings—primarily residential. This work is collectively known as the "prairie school". His personal life was dramatic and tragic and included abandonment of his first wife for a highly publicized liaison with Mamah Borthwick Cheney, the wife of a client. She was murdered by a servant, who also set their home on fire. It took Wright over 20 years to recover from these events, but even during the nadir of his career, he completed many important architectural projects including the Imperial Hotel in Tokyo and several concrete Californian residences. In 1932 Wright founded the Taliesin Fellowship. Thirty apprentices came to live and learn with Wright—bringing with them, a reliable stream of fees and sending out into the world—avid Wright disciples. The Fellows program was expanded to Arizona in 1936 and coincided with a rush of new commissions, including Fallingwater, his most famous building. During the war years, few buildings were produced, but under the G.I. bill, Taliesin built 270 houses—many in the simplified Usonian style. Wright also completed large important projects including Price Tower skyscraper, the Guggenheim Museum and the Marin County Civic Center. Frank Lloyd Wright defined "organic architecture" as architecture that is appropriate to time, appropriate to place, appropriate to man. These three concepts characterized his work throughout his long career. He died at the age of 92.

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On Panoramic Hill, Wright's designs found suitable expression at 13 Mosswood Road. The house was originally designed in 1939 for Lewis N. Bell in Malibu but was re-sited to the Berkeley location in 1974. The posthumous project was authorized by Olgivanna Wright and overseen by the Taliesen architects. The design, materials and foundation were reworked to suit the northern California character of the new site. The house is an excellent example of Wright's Usonian period and includes characteristic features, e.g. masonry rising directly out of the ground, a centralized kitchen, a carport instead of a garage, and a dining room folded into a corner of the living room and adjacent to the fireplace.^x

District History

Early Ownership and Planning

No roads led to plot number 80 in 1857 when Julius Kellersberger surveyed and platted the 16,970.68 acre ranch of Vincente and Domingo Peralta.^{xi} By 1875, the location of plot 80 was identified as part of the "undivided mountain or hill land" of the Peraltas' ranch – the future Panoramic Hill neighborhood – at the very eastern limit of the land envisioned for development.^{xii} Only dense black lines arranged in circular patterns signified the Coastal Range – evidently an impossible place to reach, let alone build. Kellersberger's map would foreshadow the slow and particular development of Panoramic Hill

By the time the College of California intended to relocate from downtown Oakland to the rural, unincorporated town of Berkeley to the north, the College had plenty of undeveloped land including, by then, plot number 80. To raise the money necessary to develop the college campus, the College of California turned to Isaac H. Brayton, as it had done in the past. A Congregationalist minister and large property owner, he owned the College of California buildings located in Oakland as he had loaned money to the College to save it from imminent bankruptcy in 1868. Since the new college planned to continue using the downtown Oakland buildings, for the time being at least, it offered to swap all of its land outside the boundaries of the future Berkeley campus for the mortgage on the buildings of the Oakland campus. The proposed land deal included Plot 80.

The land deal also included a small portion of what was known as the Berkeley Property Tract. As early as 1864 the College of California had acquired undeveloped land east and south of Strawberry Creek and had hired Frederick Law Olmsted to design a suitable residential neighborhood conducive to contemplation and refinement. The land deal included a part of the Berkeley Property Tract that remained undeveloped and outside of, although nearby, the area laid out by Olmsted.^{xiii}

By the time the land deal was finalized, it was Isaac Brayton's widow, Mary, who signed on the dotted line making her the property owner of the future Panoramic Hill neighborhood.^{xiv} Brayton

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did little to foster development on the hill, and upon her decease, her brother, sister, and in-laws inherited the land, and subsequently sold it in 1887 to real estate developer Charles Bailey.

The neighborhood began the following year in 1888 when Bailey subdivided University Terrace and cut a road "to meander...by the most feasible route according to the natural lay of the land...."^{xv} The result is Panoramic Way, a narrow road with hairpin turns up the southern half of the hillside.

Also in 1888, Bailey sold one parcel of land to Silas M. Mouser, a San Francisco-based surgeon and physician, who first arrived in California in 1849. In 1895, he sold Mouser another parcel, who at some time between 1888 and 1895 built on the land a relatively modest farm house, planted almond orchards, and called his country retreat "Atalaya", the Spanish word for "watchtower." The local newspaper took note: "Dr. Mouser's house now being constructed on the hillside east of the town is visited by many who regard the situation as being extraordinary for the location of the dwelling. It will certainly open the eyes of many to the desirability of the hills as a handsome location for those who can afford to keep a horse and carriage and do not care for the frequent visits of their friends."^{xvi}

By the time of his death in 1906, Bailey had divided his remaining land into parcels and sold all of it as part of University Terrace. Atalaya, meanwhile, remained intact until 1909. That year, just before his death, Silas Mouser deeded the farm to his son who, just one year later, sold it in its entirety to Warren Cheney, former editor of the literary magazine, *The Californian*, who turned to real estate development when his eyesight began to fail. Atalaya gave way to a new subdivision, University Hill,^{xvii} which together with University Terrace would comprise the future Panoramic Hill neighborhood.

Residential and Infrastructure Development for Diverse Intellectual Community

Even as the earthquake of 1906 sent thousands of San Franciscans fleeing across the bay to build new homes and new lives in Oakland and Berkeley and even as Francis Marion Smith and the Real Estate Syndicate opened extensive tracts of land and expanded the Key Route rail system to the outreaches of Oakland and north Berkeley, University Terrace and University Hill remained isolated. With no immediate access to public transportation, a single, narrowly winding access road, and steep, irregular lots that were difficult to build upon, prospective homeowners were a self-selecting lot. Situated above the lush flora, running creek and waterfalls of Strawberry Valley and the UC Botanical Gardens, commanding breathtaking views of the San Francisco Bay and beyond, and within walking distance of the University, the hill did ultimately attract nature lovers, artists, bohemians, and intellectuals who sought refuge from the deleterious effects of urban life and industrial development.^{xviii}

In 1901 George Boke, who would eventually be Professor of Law in the School of Jurisprudence, hired Bernard Maybeck to design a rustic home with Swiss chalet features at 23 Panoramic Way in the University Terrace subdivision. A widow named Margaret Deane then

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hired Boke house builder A.H. Broad to build a shingled home with similar chalet features next door at 25 Panoramic Way. Over the next few years, development picked up pace, allowing J.R. Baird, a real estate developer and future resident of the hill, to report in 1906, "Hill property is demanding good prices and there is an unusual call for lots in the highest sections of Berkeley. We have disposed of several lots in the University Terrace during the past week and have several deals under negotiation."^{xix}

By 1910, when Warren Cheney subdivided University Hill, seven more homes had been built along Panoramic Way and Canyon Road in the University Terrace area. Cheney saw promise for University Hill and quickly set about promoting its development. Though owned by the University, nearby Strawberry Valley enhanced the properties' appeal, a fact that was capitalized upon in Cheney's advertisements which noted that "the beautiful property will always be held as a public park."^{xx}

Cheney forged two new roads from Panoramic Way into Atalaya, Dr. Mouser's former property, naming them Mosswood Road and Arden Road, and hired Henry Atkins, of Vickery, Atkins and Torrey, a prominent San Francisco fine arts firm, to design a pedestrian pathway connecting Panoramic Way to the new roads. The result was Orchard Lane, a concrete classical stairway, complete with urns, balustrades, and a graceful curve up the hillside. In keeping with the prevailing style of public architecture in the Bay Area at the time, Atkins chose the Beaux-Arts style.^{xxi}

Being in walking distance of the University campus, the hill attracted numerous faculty including Charles Rieber, Professor of Logic and Rhetoric, who commissioned architect Ernest Coxhead to design his family home at 15 Canyon Road. Other early faculty residents included, but were not limited to, Albert Whitney, Professor of Mathematics, who built his home at 33 Canyon Road in 1907. Lincoln Hutchinson, Professor of Commerce, followed suit in 1908 with a home at 9 Canyon Road designed by Julia Morgan. George Stratton, first chair of the Department of Psychology, built his home at 67 Canyon Road (formerly 51 Canyon Road) in 1911. Also in 1911 James T. Allen, Professor of Classics, commissioned Walter Ratcliff to design his home at 37 Mosswood Road. Carleton Parker, Professor of Labor Economics, built at 38 Mosswood Road in 1915, and Ernest Hersam, Professor of Mining, built higher up on the hill at 100 Arden Road (formerly 47 Arden Road) also in 1915.^{xxii}

Not surprisingly given its location near Strawberry Valley, and the vigorous climb to reach the hill, the neighborhood also attracted nature lovers and early leaders in the environmental movement. One such resident was Edward T. Parsons, a member of the Sierra Club, who aided John Muir in the fight to save Hetch-Hetchy Valley from being dammed. As he was also active in planning club trips and an accomplished writer, Parsons Memorial Lodge was built in his memory. His wife Marion Parsons shared Edward Parsons' enthusiasms, and after his death she continued to host Sierra Club meetings at their home at 21 Mosswood Road. They had transformed the once clapboard farmhouse into a craftsman gem through the capable

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design work of John Hudson Thomas. Marion Parsons served as director of the Sierra Club for over 20 years from 1914-1938.

Hill resident Lincoln Hutchinson, resident of 9 Canyon Road, co-founded the Sierra Ski Club in Norden when he was not on campus teaching. Other Sierra Club connections included member Clifton Price, who developed the Julia Morgan-designed apartment building (5-11 Panoramic Way), and Sierra Club charter member Willis Jepson, who was also Professor of Botany at the University and owner of the Julia Morgan designed residence at 11 Mosswood Road.

The label "nature lover" is apt for this generation of hill resident. Willis Jepson made his life's work the classification of native flora and developed the first complete index of California native plants. Moving on the hill in the mid- to late 1920s^{xxiii}, on the original site of the Mouser farmhouse, and where there are now two residences (11 Mosswood Road and 13 Mosswood Road), he found a suitable environment for a personal research garden. Amelia Sanborn Allen, of 37 Mosswood Road, wife of Classics Professor James T. Allen, was a self-educated ornithologist who developed her avocation while residing in Strawberry Canyon^{xxiv} and during vacations to the Sierras, Santa Cruz mountains, and Monterey^{xxv}. Of her home in Strawberry Canyon, she wrote

"Our house is in the middle of a dense grove of young live-oak trees.... The house faces south and up the hill. To the west are three unimproved lots, one of woodland, the others partly open, with several rather large pine trees. To the north and east the oak forest is continuous, interspersed with bay trees; and there is a dense undergrowth of hazel, cascara, poison oak, spiraea, wild rose, snowberry, wild currant, blackberry and brakes, with thimble-berries and wild parsnip filling the cross ravines."^{xxvi}

For others, nature was integral to their domestic lifestyle, such as Cornelia Stratton Parker's description of life at 38 Mosswood Road.

"There, around the redwood table in the living-room, by the window overlooking the Golden Gate, we had the suppers that meant much joy to us and I hope to the friends we gathered around us. There, on the porches overhanging the very Canyon itself we had our Sunday tea-parties."^{xxvii}

The remote neighborhood also nurtured intellectual, sophisticated lifestyles, e.g. Ben Lehman, Professor of English, who from his Strawberry Canyon residence at 29 Mosswood Road, corresponded regularly with such famous writers as Sara Bard Field, Gertrude Atherton, John Steinbeck, and Thornton Wilder. Walter Steilberg, who first lived in 38 Panoramic Way then later at 1 Orchard Lane, hosted a panoply of guests including musicians Alfred Hertz, Ernest Block, Albert I. Elkus, Henry Cowell, and Ernst Bacon; writers Thornton Wilder, Leonard Bacon, Austin Wright, Sheldon Cheney, and Charles Keeler; photographers Ansel Adams, Imogen Cunningham, and Cedric Wright; artists Beniamino Bufano, Ralph Stackpole, Ray Boynton, Rudolph Schaefer, Joseph Page-Fredericks, and Robert Paine; fellow architects Eliel

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Saarienen, Richard Neutra, Harwell Harris, Warren Callister, Gardner Daily, Julia Morgan, Henry Gutterson, and William Corlett; psychologists Edward C. Tolman and James Stratton, all of whom are just some of the notable people who graced the halls of the Steilberg houses.^{xxviii}

The neighborhood naturally attracted faculty because of its proximity to the University campus. But the neighborhood was also near Piedmont Way then the location of Berkeley's finest homes^{xxix} and attracted connoisseurs of fine art as well as artists. For example, Frederic Torrey, who lived at 1 Canyon Road, was a principal in Vickery, Atkins and Torrey, a prominent San Francisco fine arts firm that helped to launch the careers of such notable artists as Imogen Cunningham and Maynard Dixon. Torrey apparently took pleasure in shocking the still rather conservative Berkeley art community by hanging Marcel Duchamp's *Nude Descending a Staircase* in prominent view in the entrance foyer of his home at 1 Canyon Road. He had bought the piece at the Armory Show in New York in 1913, which introduced to Americans Europe's most avant-garde artwork and subsequently changed the face of American artwork for the twentieth century.^{xxx} Professor Rieber's wife, Winifred Smith Rieber, of 15 Canyon Road, was an esteemed portrait artist whose subjects would eventually include such notable figures as Albert Einstein, Thomas Mann, Phoebe Hearst, and Mrs. Herbert Hoover.^{xxxi} Professor Carleton Parker and his wife Cornelia Stratton Parker enjoyed having guests to their home at 38 Mosswood Road; one such guest was artist Alexander Calder, who was then a student at Berkeley High School.^{xxxii}

In the 1920 census records, there were a total of 34 households on the hill including a doctor, an accountant, a traveling salesman, five high school or grammar school teachers, one author, three artists, one art dealer, and nine professors. In general, the hill attracted a diverse and progressive crowd living outside mainstream commerce and industry.^{xxxiii}

Architectural Development

The first house to be built in University Terrace was the Boke House at 23 Panoramic Way. Built in 1901, this house has become one of Maybeck's most famous designs and exemplifies the basic tenets of vernacular architecture in the California Arts and Crafts movement. The same year, Boke House builder A.H Broad designed and built 25 Panoramic Way. Like the Boke House, the exterior was clad in brown shingles and the interior walls and ceiling covered in redwood. These were small brown shingle houses, and the dwelling next door at 27 Panoramic Way, built soon thereafter in 1903, was no exception.

At the same time as these single-family houses were being built at this remote hillside location, a more population dense three-unit apartment building was designed for 73, 75, & 77 Panoramic Way. The brown shingle dwelling was designed by the builder A.H. Broad and

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resembled a single-family dwelling from the outside. Inside, however, each apartment occupied a floor, and there were no connecting interior stairways in between. Balconies dominated the west elevation. Just uphill of the Boke House, a concrete pathway connected the apartment building to the Boke House and to Panoramic Way below.

Although small houses and apartment buildings were being built on Panoramic Way during the first decade of the 20th century, two large single-family houses were designed by Ernest Coxhead at 1 and 15 Canyon Road in 1906 and 1904, respectively. Although the houses on Panoramic Way had views of the bay and distant vistas, the houses on Canyon Road also had views of the nearby UC Botanical Gardens and Strawberry Creek. The emphasis on indoor-outdoor relationships was enhanced with window placement, window size, courtyards, and terraces. The large buildings blended in to their environments with brown shingled exteriors.

As demand for hill locations increased, another apartment building was built in the neighborhood in 1912. Designed by Julia Morgan, the four-unit stucco half-timbered apartment for Professor Price made no apologies for being an apartment building unlike the apartment building at 73, 75, and 77 Panoramic Way. However, it was subtle and restrained as many of Morgan's residential projects were inclined to be.

Before designing the Price Apartments, Morgan designed in 1908 a brown shingled house at 66 Panoramic Way. The dwelling was designed for her childhood friend Elsie Lee Turner, who used the dwelling for income property. A concrete staircase was shared with 64 Panoramic Way, which was also clad in brown shingles. For both buildings, the main entrances were to the side, faced each other, and oriented in a friendly arrangement toward the shared stairway.

Once the University Hill subdivision was developed in 1910, development moved further along Canyon Road and deeper into the canyon. Development moved from the western face of the hill to the northwestern face, which was along the new streets of Mosswood and Arden Roads. Also added was Orchard Lane, an arterial path that facilitated efficient travel, but also served as announcement of a more exceptional development. Formerly Dr. Mouser's almond orchard, the University Hill area also had plenty of fruit trees and an abundance of live oaks.^{xxxiv}

In 1910, Edward T. Parsons bought Mouser's farmhouse and had it moved to its present location at 21 Mosswood Road, which allowed for a more prominent view of the canyon than its former location at Panoramic Way's second hairpin turn. John Hudson Thomas was hired to remodel the farmhouse. To enhance the canyon views, he found creative solution in transforming what was originally the back of the house to a street side front entrance so as to utilize the expansive windows in what was originally the front of the house.

Between 1911 and 1915, four professors would build houses in the most remote location possible within the University Hill subdivision. In 1911, Professor George Stratton built a house at the end of Canyon Road, and Professor James Allen built a house at the end of Mosswood Road. Both of these houses were next door to undeveloped University land. In 1915, Professor

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Parker built a house at 38 Mosswood, and Professor Hersam built a house at the cul-de-sac of Arden Road (now 100 Arden Road; then 47 Arden). In all these instances, rather than seeking fantastic panoramic views of the bay, they sought refuge at the end of the road, near the undeveloped University land next door, and oriented towards Strawberry Canyon. Although only one of them, 37 Mosswood Road, was designed by an architect, i.e. Walter Ratcliff, all were clad in brown shingles, had steeply pitched gable roofs, and interior walls and ceilings lined in redwood.

The Arts and Crafts movement continued to find expression on Panoramic Hill after World War I. Mabel Baird, who designed 14 and 16 Mosswood Road in 1919 and 1922, respectively, continued in the shingled mode. Even Walter Steilberg, who built an international reputation for his experiments in fireproof construction methods, designed 65 Arden Road in the old shingled manner in 1935.

The Bay Area's Arts and Crafts architecture included many styles, and the variations on the Arts and Crafts theme found expression on Panoramic Hill. A combination of factors influenced architects, builders, and home owners to seek alternatives to brown shingles. Rapid deforestation rendered wood increasingly scarce and expensive to build with, and the devastating Berkeley fire of 1923 made all too clear that the beloved wood houses posed serious fire hazards. In response to these and other factors, architects and home owners turned to Spanish Colonial Revival and Mediterranean styles of domestic architecture and built with concrete, tile, iron, and stucco instead of wood. These new styles still adhered to the basic tenets mentioned above, but also celebrated California's history and climate. In fact, with their flat roofs, thicker walls, and greater use of tile, they were more appropriate for the dry and temperate to warm climate than the often steeply pitched gabled roofs of earlier shingled houses.

The Steilberg compound at 1 Panoramic Way, 1 Orchard Lane, and 4 Mosswood Lane exemplifies the evolution of design away from brown shingle to other materials. Designed and constructed between 1922 and 1929, the property includes a classic shingled cottage (1 Panoramic Way), a half shingle/half-stucco main house (1 Orchard Lane), and a small Fabricrete cottage with a low pitched tile roof with flat terrace on top (4 Mosswood Lane).

Built in 1931, the Fabricrete house at 101 Panoramic Way is Mediterranean influenced while the stucco dwelling at 107 Panoramic Way, built in 1926, is more pueblo-style, but both retain Arts and Crafts features. The Julia Morgan-designed Spanish Colonial Revival stucco house and garage-cottage combination at 11 Mosswood Road likewise retain detail that define the period. The avian-themed hand-wrought iron gate at the front entrance as well as the fireplaces carved by Jules Suppo^{xxxv}, who did much of the artisanal work at Hearst Castle, underscore this point particularly well.

In 1939, William Wurster designed a boxy wood siding and stucco house with four single stall garages below. By 1941, Robert Ratcliff had committed to building his family home in the niche

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of land created by the second hairpin turn on Panoramic Way in synchrony with the Walter Steilberg-designed house at the first hairpin turn on Panoramic Way built in 1928. Meanwhile, Frank Lloyd Wright would be designing a home for a Malibu residence in 1939 that would later be re-sited by Taliesin architects for the northern California location at Panoramic Hill and supervised during construction in 1974.

Changes to the Area Adjacent to the District – California Memorial Stadium

Though the Hayward Fault runs through the first switchback at Panoramic Way and has always posed an imminent threat to the neighborhood, the biggest upheaval to the area was the construction of California Memorial Stadium in Strawberry Canyon, immediately to the north of Canyon Road. The new stadium was originally designed for the flatlands to the south of campus. But after much debate, and to the dismay of residents who had bought property and built their homes with Warren Cheney's promise of unspoiled nature forever surrounding them, the University finally decided to build on the Strawberry Canyon site, permanently and fundamentally changing the natural landscape as well as the residents' relationship to the University.^{xxxvi}

Preparations for the construction of the new stadium immediately made apparent how dramatically it would alter the landscape that had shaped the development of Panoramic Hill for decades. Excavation of the 22-acre site began in January 1923. With 24,000 pounds of black powder and 10,000 pounds of dynamite, excavators loosened the ground. A combination of steam shovels, Caterpillar tractors, horse-drawn wagons, and hydraulic machines then removed the earth. Strawberry Creek was also diverted before construction began. By the end of November 1923, Panoramic Hill residents who once overlooked a botanical garden and an untamed bird and wildlife sanctuary now set their gaze upon "a double-decked steel and reinforced concrete structure with 60,000 seats, and underneath the seating decks were training quarters, convenience stations, reception room, handball and tennis courts, and other features. The outer walls were 91 feet high and ...bigger than the Coliseum in Rome."^{xxxvii}

The University's decision to build at the Strawberry Canyon site launched a litany of complaints to the city; some of the most vocal of them came from residents of Panoramic Hill. Walter Steilberg, who had already designed and built two houses on the hill, and Walter Ratcliff who had designed one house on the hill, along with other prominent architects, e.g. John Galen Howard, Henry H. Gutterson, and William Corlett^{xxxviii}, whose son would later build on the hill, voiced their concern over the suitability of the site—its seismic vulnerability (the Hayward fault runs through the middle of the site), potential traffic problems, excavating the land, and the destruction of the landscape. Most concerned residents cited the fire chief's assertion that building the stadium at the Strawberry Canyon site would create a dangerous fire hazard, which was the one legal argument that could be sustained. But implicit in many of the complaints was a concern over the destruction of the natural environment around which they had built their homes and lives. Berkeley residents had just witnessed the effects of campus expansion at Bancroft Way, the street running along the southern perimeter of the University campus. The

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destruction of trees and demolition of homes with street widening presaged similar devastation during stadium construction. Other Panoramic Hill residents, like Theological Seminary Professor John Buckham at 36 Panoramic Way, made generic references to spoiling the beauty of the city. Still other residents fled. Harold Sawyer, who had recently purchased property on the hill with the intention to build, assured the city that he would not do so if the stadium were built in Strawberry Canyon. A man of his word, Sawyer and his family moved to Oakland instead. Professor of Logic Charles Rieber, who along with his wife the esteemed portrait artist Winifred Smith Rieber, fought a very public battle to conserve the beauty of the area which was adjacent to their home at 15 Canyon Road. In an embarrassing move for the Berkeley campus, the family relocated to southern California, where Rieber became the first Dean of the College of Arts and Sciences at the University of California, Los Angeles, and where ultimately a building was named in his honor.^{xvix}

Neighborhood Development After the Stadium

Despite substantially changing the neighborhood environs, development on the hill continued after the stadium was built. Walter Steilberg had already put in the foundation for 1 Orchard Lane "when the stadium frenzy broke loose."^{xi} He had designed a dining room plate glass window to look into the Botanical Gardens from one direction and San Francisco from the other. But the construction of a sorority house across the street on the other side of Panoramic Way in combination with stadium construction rendered these design details pointless. Despite these changes, Walter Steilberg continued to live on the hill, raise his family, and find other inspiration in the neighborhood. Later, in 1941, Robert Ratcliff would begin building his family home on Panoramic Hill at 74 Panoramic Way. He had already designed a small cottage at 72 Panoramic Way, for his mother-in-law, and his father-in-law Robert Paine had already designed a house at 94 Panoramic Way.

Garages would proliferate as many early houses on the hill were built without garages. For example, in 1939 Miss Eleanor Gardner who lived in 76 Arden Road commissioned her friend William Wurster to design a four car garage with apartment above.^{xli}

Proximity to the campus and student housing shortages during the 1960's created demand for housing on Panoramic Hill as elsewhere in the City. In 1963, architect Howard Moise was granted a use permit to use 9 Canyon Road for a two-family dwelling.^{xlii} One of the small cottages in the condominium association on Canyon Road was subdivided further and was allowed by the City of Berkeley to become a two family dwelling.^{xliii} Professor Rieber's former residence at 15 Canyon was sub-divided into three dwelling units. In the 1960's, Professor Buckham's former residence at 36 Panoramic Way received a use permit to operate a boarding house.^{xliv}

Development intensified further when on July 20, 1967, the City of Berkeley adopted Ordinance No .4273 which allowed two dwelling units to be built on one lot. But within 10 years,

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homeowners had organized and led the effort to down-zone the neighborhood into the most restrictive single-family zone in Berkeley. Known as the Environmental Safety-Residential zone, and in recognition of substandard infrastructure and extreme fire hazards, it effectively halted the rapid proliferation of more intensive development unsuitable for the neighborhood.

Panoramic Hill Subdivisions and Boundaries

The Panoramic Hill Historic District occupies portions of three early subdivisions. These are the Berkeley Property Tract, University Terrace, and University Hill. The first of these was the Berkeley Property Tract, from which parts were resubdivided, one part of which was University Terrace. University Hill was subdivided from Dr. Mouser's farm known as Atalaya.

The relationship between University Terrace and University Hill is like two irregular pieces of a jigsaw puzzle that together make a whole. What is, or is not, in one subdivision or the other is virtually irrelevant to its sense of place.

The unifying element is Panoramic Way by which every motorized traveler must use to enter and leave the neighborhood. So, for example, residential areas not accessed by Panoramic Way, such as Hillside Court on the southwestern façade of Panoramic Hill, are not included in the Panoramic Hill district. The district is defined therefore by common access and not by geography, topography, or even proximity.

The proposed district occupies portions, but not all, of both University Terrace and University Hill. At some point during the hill's development, the two subdivisions accessed by Panoramic Way became known as Panoramic Hill. No subdivision was ever developed by that name, but Panoramic Hill nevertheless became the colloquial identifier. The name of the Mouser's farm, Atalaya, never stuck although it was at one time Warren Cheney's choice for what would become Arden Road. University Terrace and University Hill did not last and without subdivision maps there would hardly be a record of their usage. Instead it was Panoramic Hill that would evolve as a most accurate name since the neighborhood was blessed by panoramic views and one narrow, meandering, impossible, but quaint road by the same name. It is the Panoramic Hill Historic District that holds this history.

EVALUATION

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

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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 a center of this important early twentieth century architectural movement. The district is significant for the period from 1901, when the first building was constructed, to 1950.

Integrity

Location

The Panoramic Hill Historic District retains integrity of location. It remains today where it was built. One house, Dr. Mouser's farmhouse of 1888, was moved within the district to 21 Mosswood Road in 1910. This change occurred within the period of significance and is part of the history of the district.

Design

The Panoramic Hill Historic District retains integrity of design. The principal changes to the district since the end of the period of significance are the construction of 11 new houses and the alteration of many houses for multi-tenant use. The new houses are compatible in scale and materials; although not contributors, they maintain the pattern of development of single family houses and garages that characterizes the design of the district. The alteration of houses for multi-tenant use is generally not accompanied by major exterior alterations. However, multi-tenant use is often associated with lower maintenance than exists for single-unit residences.

Setting

At a grand scale, the setting of the district is little changed. The major aspects of setting – its isolation on a hill with canyons to the north and south and a panoramic view to the west, are unchanged.

The principal changes in the immediate setting are the development of apartment buildings adjacent to the district on its west side and the expansion of the neighborhood up the hill to the east. The apartment buildings present an incompatible edge to the district. The expanded neighborhood to the east, much of it representing the second and third phases of the Bay Area Tradition, is newer than the area within the district but is generally not incompatible with it. It is possible that parts of this expanded neighborhood could be added to this district in the future when sufficient perspective exists to evaluate it.

Materials

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Integrity of materials in the district remains high. The full range of materials, including the dominant redwood, remains present, as do other materials – stucco, tile, iron, concrete, and brick. The use of materials is one of the hallmarks of the Arts and Crafts movement, and the original materials are largely intact.

Workmanship

Integrity of workmanship, like integrity of materials, is high. Likewise, workmanship is a hallmark of Arts and Crafts architecture. Workmanship is a characteristic that is more evident up close, to private visitors, than from public streets and pathways.

Feeling

Integrity of feeling is diminished – in generally superficial and ephemeral ways – notably the parking of cars along the roads, and minor exterior modifications for multi-tenant use.

Association

Integrity of association is high. Because the original houses and other buildings and structures of the district are intact, the association with the history of the district is present.

ⁱ Richard Longstreth, *On the Edge of the World: Four Architects in San Francisco at the Turn of the Century* (Berkeley, 1983), pp. 112-113.

ⁱⁱ Sally Woodbridge, *Bay Area Houses*, New Edition (Salt Lake City: Gibbs Smith Publisher, 1988), pp. 8-22.

ⁱⁱⁱ Kenneth H. Cardwell, *Bernard Maybeck: Artisan, Architect, Artist* (Santa Barbara: Peregrine Smith, Inc., 1977).

^{iv} Berkeley Urban Conservation Survey, Folder 1861, BAHA; Cardwell, *Bernard Maybeck*, pp. 74-77.

^v Interview of John Arthur by Janice Thomas on 10/26/04. Mr. Arthur is author of two books on Bernard Maybeck to be published in the spring 2005 by Gibbs Smith Publisher.

^{vi} Ernest Coxhead Collection, 1919-1932 Finding Aid, College of Environmental Design Archives, University of California, Berkeley; <http://findaid.oac.cdlib.org/findaid/ark:/13030/tf087001g5/bioghist/112931656>.

^{vii} John Beach, *Berkeley Gazette*, December 19, 1974.

^{viii} Ibid.

^{ix} Suzanne B. Riess, editor, *The Julia Morgan Architectural History Project* Vol. 1 (Berkeley: The Regents of the University of California, 1976), p. 103.

^x Interview of Jeanne Allen by Janice Thomas on 10/30/04.

^{xi} Julius Kellersberger, *Map of the Ranchos of Vincente and Domingo Peralta*, January 21, 1857, Alameda County Office of the Recorder, Book 17, p. 12.

^{xii} *Map of the Undivided Mountain or Hill Land of the Vicente and Domino Peralta Rancho*, March 2, 1875.

^{xiii} Berkeley Architectural Heritage Association, *Frederick Law Olmsted's Berkeley Legacy – Piedmont Way and The Berkeley Property Tract* (Berkeley: 1995), p. 1-5.

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^{xiv} Ibid.; *Official and Historical Atlas Map of Alameda County*, California (Oakland: Thompson & West, 1878), pp. 112-13; Verne Stadtman, *The University of California: 1868-1968*, p. 40.

^{xv} *Alameda County Book of Deeds* 350/77.

^{xvi} *Berkeley Herald*, November 5, 1888.

^{xvii} Frank Soulé, Jr., *Map of Strawberry Valley and Vicinity Showing the Natural Resources of the Water Supply of the University of California with Proposed System of Reservoirs, Distributing Pipes, etc.* (Lith. Britton Rey & Co.: San Francisco, 175); Survey map of University Terrace, 1888, BAHA; *Alameda County Book of Deeds* 325/159-163, 330/43, 50/75-78, 559/355-56, 1637/446-48, 1754/186-189.

^{xviii} Kellersberger; Alameda County Office of the Recorder, Book 17, p. 12; for a history of the Key Route system and Realty Syndicate, see George Hildebrand, *Borax Pioneer: Francis Marion Smith* (San Diego: Horwell-North Books, 1982).

^{xix} "Realty Men Report many Sales and an Advance in Prices," in Richard Schwartz, *Berkeley 1900: Daily Life at the Turn of the Century* (RSB Books, 2000), p. 183.

^{xx} University Hill," advertisement in *Berkeley Gazette*, August 16, 1910; "More about University Hill," advertisement in *Berkeley Gazette*, August 17, 1910, p. 8.

^{xxi} The Bay Area boasts some of the greatest concentration of Beaux-Arts architecture in the United States. Phoebe Hearst, widow of mining tycoon and United States Senator George Hearst and mother of politician and media mogul, William Randolph Hearst, for example, underwrote an international competition in 1898 to find an architect who could design a new University of California campus worthy of international prestige; virtually all the applicants, including the architect of the winning design, studied for some period at the Ecole des Beaux-Arts. San Francisco also took advantage of its ruined state following the 1906 earthquake to construct a city hall and civic center in the Beaux-Arts style as well. John Bakewell and Arthur Brown, Jr., both Beaux-Arts graduates and contemporaries of Julia Morgan, designed and implemented the complex as it stands today. See Gray Brechin, *Imperial San Francisco: Imperial San Francisco: Urban Power, Earthly Ruin* (Berkeley, 1999); Richard Longstreth, *On the Edge of the World: Four Architects in San Francisco at the Turn of the Century* (Berkeley, 1983); Roy Lowe, "A Western Acropolis of Learning": *The University of California in 1897* (Berkeley, 1996).

^{xxii} Anthony Bruce, et al., *Panoramic Hill: Berkeley's Most Romantic Neighborhood*, revised edition (Berkeley: Berkeley Architectural Heritage Association, 1996).

^{xxiii} Jepson may have lived in the garage apartment, which was built before the house was completed in 1929. However, available records are unclear on this point.

^{xxiv} Amelia Sanborn Allen, "Birds of the Berkeley Hillside," in *The Condor* Vol. XVII (March 1915), p. 78.

^{xxv} Amelia Sanborn Allen, *Chasing Wrens* (Berkeley: Gillick Press, 1945).

^{xxvi} Ibid, p. 78.

^{xxvii} Cornelia Stratton Parker, *An American Idyll: The Life of Carleton H. Parker* (Boston, 1919): pp. 90-91.

^{xxviii} Berkeley Urban Conservation Survey, Folder 1862, BAHA.

^{xxix} Lesley Emmington Jones, *Frederick Law Olmsted's Berkeley Legacy - Piedmont Way and The Berkeley Property Tract* (Berkeley: Berkeley Architectural Heritage Association, 1995).

^{xxx} Ibid.

^{xxxi} City of Berkeley Landmark, June 7, 1999.

^{xxxii} Interview of Mrs. Cornelia Stratton Parker by J.R.K. Kantor, University Archivist and Panoramic Hill resident who lived in 38 Mosswood Road from 95-1957 and interviewed Mrs. Parker during the period of 1962 until her death some years later.

^{xxxiii} 1920 United States Federal Census, Alameda County, City of Berkeley, California, Enumeration District 174.

^{xxxiv} Allen, p. 78; Early undated photograph of "Berkeley Highlands - Side Hill Homes" (Berkeley Architectural Heritage Association, Archives).

^{xxxv} Interview of Frances Fischer, current owner of 11 Mosswood Road by Karen McNeill, June 28, 2004.

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^{xxxvi} Siegel and Strain, Architects, "Historic Structure Report: University of California, Berkeley, California Memorial Stadium," prepared for the University of California Office of Planning, Design, and Construction, September 23, 1999, pp. 16-23.

^{xxxvii} Ibid., pp. 21-32.

^{xxxviii} Susan Cerny, "Berkeley Observed; Memorial Stadium – controversial from the start", *Berkeley Daily Planet*, September 2, 9, 12 of 2003.

^{xxxix} City of Berkeley Landmark, June 7, 1999.

^{xl} Riess, p. 106.

^{xli} Interview of Robert Breecker, current owner of 76 Arden Road, by Janice Thomas, 10/15/04.

^{xlii} City of Berkeley Use Permit #5089, 1/2/63.

^{xliii} City of Berkeley Use Permit #5021, 7/3/73.

^{xliv} City of Berkeley Use Permit #132.

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VERBAL BOUNDARY DESCRIPTION

See Sketch Map.

AUG 11 2005

BOUNDARY JUSTIFICATION

Panoramic Hill 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.

The lower elevations of the hillside neighborhood have a concentration of houses, garages, and landscape features that fit all of the criteria of the proposed historic district. Although a few structures built at higher elevations would meet all of the criteria, they lie within an area that was largely developed after the historical period in question.

United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Section number ____ Page

**Panoramic Hill Historic District
Photographic Directory:**

5 x 7 - Black and White Fiber-Reprints

The information in 3, 4, 5 below applies to all 5 x 7 - black and white fiber reprints:

3. Photographer: Fredrica Drotos
4. Date of Photograph(s): 2004
5. Location of Original Negative(s): 16 Mosswood Road, Berkeley, California

Key: R indicates the photograph is a fiber reprint

Direction of Camera:

4.1. (R)	East
11.1. (R)	Northeast
11.2. (R)	North
23.3. (R)	Southwest
27.1. (R)	Southeast
31.1. (R)	Southeast
39.2. (R)	South
42.1. (R)	Northwest
49.1. (R)	Northeast
61.a.1. (R)	North
z.1. (R)	South
v.2. (R)	Northwest
v.3. (R)	West
v.6. (R)	Northwest
v.7. (R)	South

BUILDINGS SITES & STRUCTURES KEY Contributing are BLACK Non-Contributing are GREY

1. 1 Panoramic Way
- 1a. 1 Panoramic Way playhouse
2. 7, 9, 11 Panoramic Way
3. 20, 22, 24 Panoramic Way
- 3a. 18 Panoramic Way
4. 25 Panoramic Way
- 4a. 23 Panoramic Way garage
5. 25 Panoramic Way
- 5a. 25 Panoramic Way garage
6. 27 Panoramic Way
7. 30 Panoramic Way
8. 35 Panoramic Way
- 8a. 34 Panoramic Way
10. 38 Panoramic Way
11. 58 & 61 Panoramic Way
- 11a. 59 & 61 Panoramic Way garage
12. 60 Panoramic Way
- 12a. 60 Panoramic Way wall
13. 62 Panoramic Way
- 13a. 62 Panoramic Way garage
14. 64 Panoramic Way
- 14a. 64 Panoramic Way garage
15. 65 & 67 Panoramic Way
16. 66 Panoramic Way
17. 70 Panoramic Way
18. 72 Panoramic Way
- 18a. 72 Panoramic Way fountain
19. 74 Panoramic Way
20. 75, 76, 77 Panoramic Way
21. 84 Panoramic Way
22. 101 Panoramic Way
23. 107 Panoramic Way
24. 1 Canyon Road
- 24a. 1 Canyon Road stairs & wall
25. 5 Canyon Road
26. 9 Canyon Road
- 26a. 9 Canyon Road garage
27. 15 Canyon Road
- 27a. 15 Canyon Road garage
- 27b. 16 Canyon Road wall
28. 33 Canyon Road
29. 37 Canyon Road
30. 39 Canyon Road
31. 45 Canyon Road
32. 47 Canyon Road
33. 49 Canyon Road
34. 61 Canyon Road
35. 53 & 57 Canyon Road
36. 61 Canyon Road
37. 67 Canyon Road
- 37a. 67 Canyon Road garage
38. 4 Mosswood Lane
39. 6 Mosswood Road
40. 8 Mosswood Road
41. 10 Mosswood Road
42. 11 Mosswood Road
- 42a. 11 Mosswood Road garage
43. 13 Mosswood Road
- 43a. 13 Mosswood Road wall
44. 14 Mosswood Road
- 44a. 14 Mosswood Road garage
- 44b. 14 Mosswood Road cottage
- 44c. 14 Mosswood Road wall
45. 20 Mosswood Road
- 45a. 20 Mosswood Road garage
46. 21 Mosswood Road
47. 21 Mosswood Road
- 47a. 21 Mosswood Road garage
48. 29 Mosswood Road
- 48a. 29 Mosswood Road garage
49. 37 Mosswood Road
- 49a. 37 Mosswood Road wall
50. 38 Mosswood Road
51. 1 Orchard Lane
52. 3 Orchard Lane
53. 19 Orchard Lane
54. 21 Orchard Lane
55. 69 Arden Road
56. 65 Arden Road
57. 70 Arden Road
58. 78 Arden Road
59. 65 Arden Road
- 59a. 89 Arden Road wall
60. 50 & 55 Arden Road
61. 100 Arden Road
- 61a. 100 Arden Road garage
- 61b. 100 Arden Road wall
- W. Orchard Lane - Lower
- E. Orchard Lane - Upper
- Y. Mosswood Lane
- Z. Arden Steps

PANORAMIC HILL HISTORIC DISTRICT : BERKELEY CALIFORNIA **SKETCH MAP #1 - GENERAL OVERVIEW**

GRAPHIC KEY

Structure Numbers:
Refer to contents of section 7

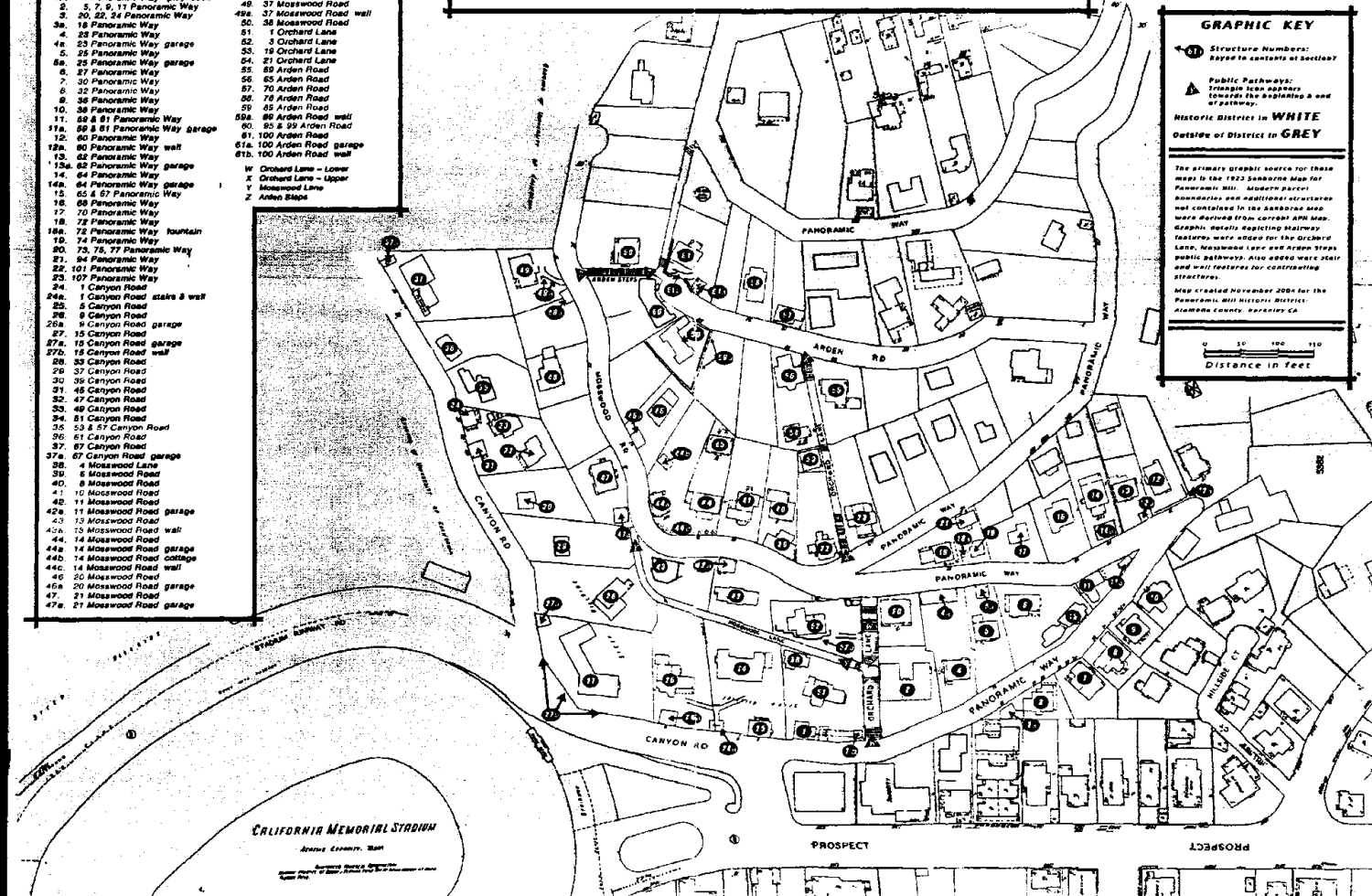
Public Pathways:
Trough icon indicates
towards the beginning & end
of pathway.

Historic Districts in **WHITE**
Outside of District in **GREY**

The primary graphic source for these maps is the 1922 Sanborn Map for Panoramic Hill. Modern parcel boundaries and additional structures not contained in the Sanborn map were derived from current APN maps. Graphic details depicting stairways, features, water, signs for the Orchard Lane, Mosswood Lane and Arden Steps public pathways, also added were stair and wall features for contributing structures.

Map created November 2004 for the Panoramic Hill Historic District, Alameda County, Berkeley CA

0 50 100 150
Distance in Feet



BUILDINGS SITES & STRUCTURES KEY

Contributing are BLACK

Non-Contributing are GREY

1. 1 Panoramic Way
- 1a. 1 Panoramic Way playhouse
2. 5, 7, 9, 11 Panoramic Way
3. 20, 22, 24 Panoramic Way
- 3a. 18 Panoramic Way
4. 23 Panoramic Way
- 4a. 23 Panoramic Way garage
5. 25 Panoramic Way
- 6a. 26 Panoramic Way garage
6. 27 Panoramic Way
7. 30 Panoramic Way
8. 32 Panoramic Way
9. 36 Panoramic Way
10. 38 Panoramic Way
11. 88 & 81 Panoramic Way
- 11a. 88 & 81 Panoramic Way garage
12. 60 Panoramic Way
- 12a. 60 Panoramic Way wall
13. 62 Panoramic Way
- 13a. 62 Panoramic Way garage
14. 64 Panoramic Way
- 14a. 64 Panoramic Way garage (M)
15. 65 & 67 Panoramic Way
16. 66 Panoramic Way
17. 70 Panoramic Way
18. 72 Panoramic Way
- 18a. 72 Panoramic Way fountain
19. 74 Panoramic Way
20. 73, 75, 77 Panoramic Way
21. 84 Panoramic Way
22. 101 Panoramic Way
23. 107 Panoramic Way
24. 1 Canyon Road
- 24a. 1 Canyon Road stairs & wall
25. 5 Canyon Road
26. 9 Canyon Road
- 26a. 9 Canyon Road garage
27. 15 Canyon Road
- 27a. 15 Canyon Road garage
- 27b. 15 Canyon Road wall
28. 30 Canyon Road
29. 37 Canyon Road
30. 39 Canyon Road
31. 48 Canyon Road
32. 47 Canyon Road
33. 49 Canyon Road
34. 51 Canyon Road
35. 53 & 57 Canyon Road
36. 61 Canyon Road
37. 67 Canyon Road
- 37a. 67 Canyon Road garage
38. 4 Mosswood Lane
39. 6 Mosswood Road
40. 8 Mosswood Road
41. 10 Mosswood Road
42. 11 Mosswood Road
- 42a. 11 Mosswood Road garage
43. 15 Mosswood Road
- 43a. 15 Mosswood Road wall
44. 14 Mosswood Road
- 44a. 14 Mosswood Road garage
- 44b. 14 Mosswood Road cottage
- 44c. 14 Mosswood Road wall
45. 20 Mosswood Road
- 45a. 20 Mosswood Road garage
46. 21 Mosswood Road
- 47a. 21 Mosswood Road garage

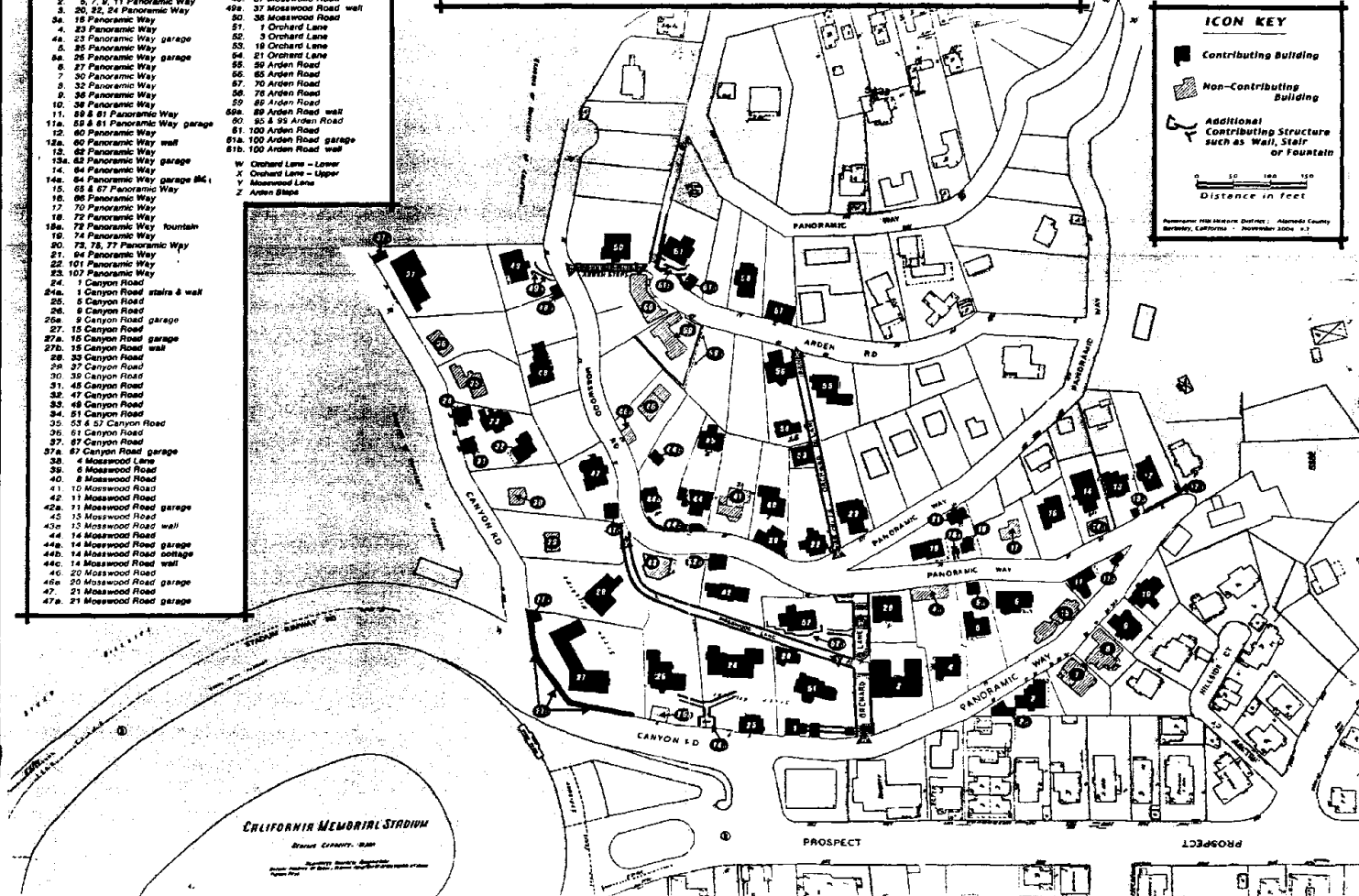
PANORAMIC HILL HISTORIC DISTRICT : BERKELEY CALIFORNIA SKETCH MAP #2 - Contributing / Non-Contributing



ICON KEY

- Contributing Building
 - Non-Contributing Building
 - Additional Contributing Structure such as Wall, Stair or Fountain
- 0 50 100 150
Distance in feet

Panoramic Hill Historic District - Alameda County
Berkeley, California - November 2004 v. 2



BUILDINGS SITES & STRUCTURES KEY

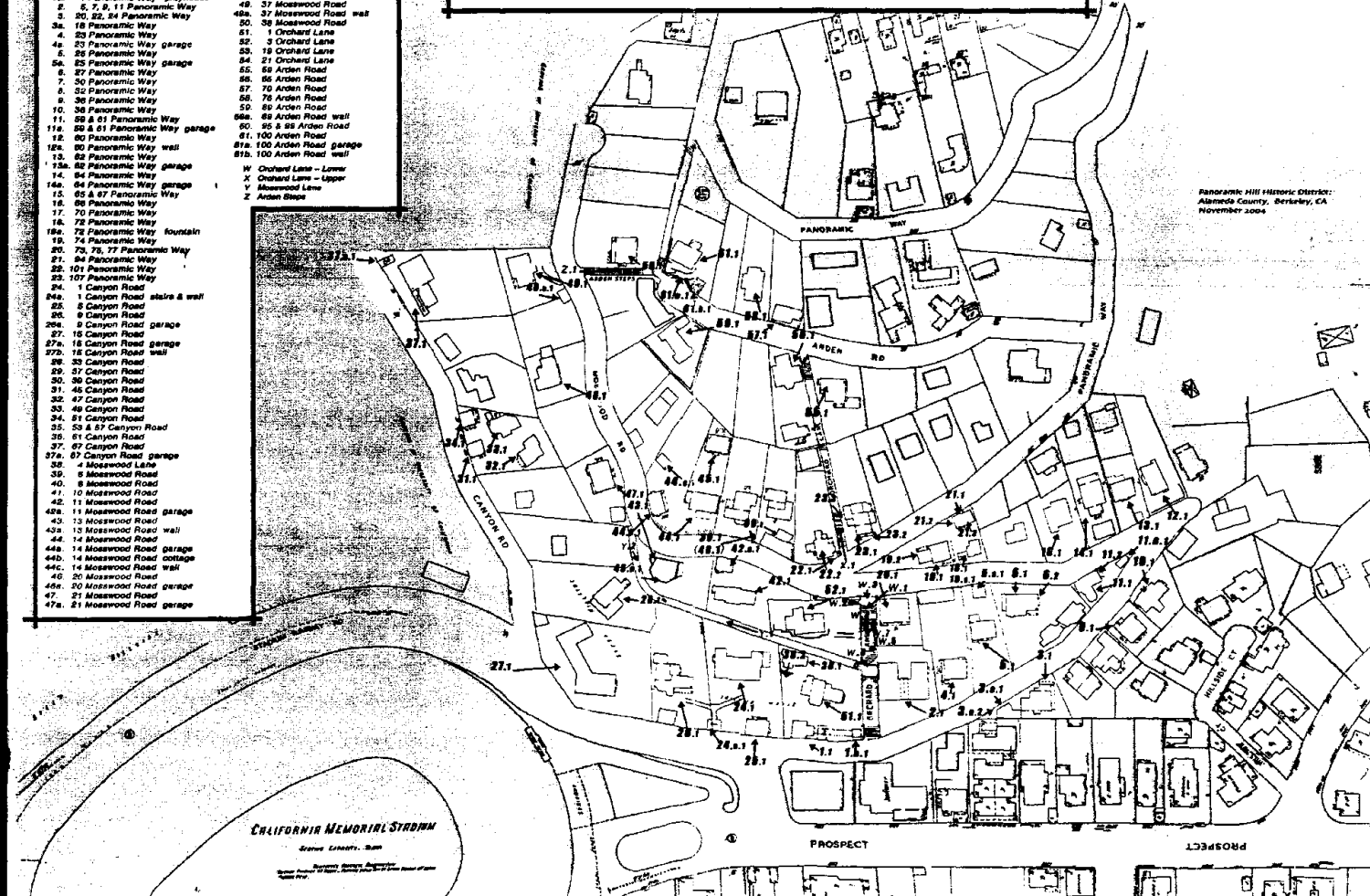
Contributing are BLACK

Non-Contributing are GREY

1. 1 Panoramic Way
- 1a. 1 Panoramic Way playhouse
2. 5, 7, 9, 11 Panoramic Way
3. 20, 22, 24 Panoramic Way
- 3a. 18 Panoramic Way
4. 23 Panoramic Way
- 4a. 23 Panoramic Way garage
- 5a. 25 Panoramic Way
- 5b. 25 Panoramic Way garage
6. 27 Panoramic Way
7. 30 Panoramic Way
8. 32 Panoramic Way
9. 36 Panoramic Way
10. 38 Panoramic Way
11. 39 & 51 Panoramic Way
- 11a. 39 & 51 Panoramic Way garage
12. 80 Panoramic Way
- 12a. 80 Panoramic Way wall
13. 82 Panoramic Way
- 13a. 82 Panoramic Way garage
14. 84 Panoramic Way
- 14a. 84 Panoramic Way garage
15. 65 & 67 Panoramic Way
16. 86 Panoramic Way
17. 70 Panoramic Way
18. 72 Panoramic Way
- 18a. 72 Panoramic Way fountain
19. 74 Panoramic Way
20. 75, 76, 77 Panoramic Way
21. 84 Panoramic Way
22. 91 Panoramic Way
23. 107 Panoramic Way
24. 1 Canyon Road
- 24a. 1 Canyon Road stairs & wall
25. 5 Canyon Road
26. 9 Canyon Road
- 26a. 9 Canyon Road garage
27. 15 Canyon Road
- 27a. 15 Canyon Road garage
- 27b. 15 Canyon Road wall
28. 33 Canyon Road
29. 57 Canyon Road
30. 30 Canyon Road
31. 45 Canyon Road
32. 47 Canyon Road
33. 49 Canyon Road
34. 51 Canyon Road
35. 53 & 57 Canyon Road
36. 61 Canyon Road
37. 67 Canyon Road
- 37a. 67 Canyon Road garage
38. 4 Mosswood Lane
39. 8 Mosswood Road
40. 8 Mosswood Road
41. 10 Mosswood Road
42. 11 Mosswood Road
- 42a. 11 Mosswood Road garage
43. 13 Mosswood Road
- 43a. 13 Mosswood Road wall
44. 14 Mosswood Road
- 44a. 14 Mosswood Road garage
- 44b. 14 Mosswood Road cottage
- 44c. 14 Mosswood Road wall
45. 20 Mosswood Road
- 46a. 20 Mosswood Road garage
47. 21 Mosswood Road
- 47a. 21 Mosswood Road garage
48. 26 Mosswood Road
- 48a. 26 Mosswood Road garage
49. 37 Mosswood Road
- 49a. 37 Mosswood Road wall
50. 38 Mosswood Road
51. 1 Orchard Lane
52. 3 Orchard Lane
53. 19 Orchard Lane
54. 21 Orchard Lane
55. 68 Arden Road
56. 66 Arden Road
57. 70 Arden Road
58. 76 Arden Road
59. 69 Arden Road
- 60a. 68 Arden Road wall
60. 95 & 98 Arden Road
61. 100 Arden Road
- 61a. 100 Arden Road garage
- 61b. 100 Arden Road wall
- W. Orchard Lane - Lower
- X. Orchard Lane - Upper
- Y. Mosswood Lane
- Z. Arden Slope

PANORAMIC HILL HISTORIC DISTRICT : BERKELEY CALIFORNIA

SKETCH MAP #3 - B&W Photo Locations



BUILDINGS SITES & STRUCTURES KEY

Contributing are BLACK

Non-Contributing are GREY

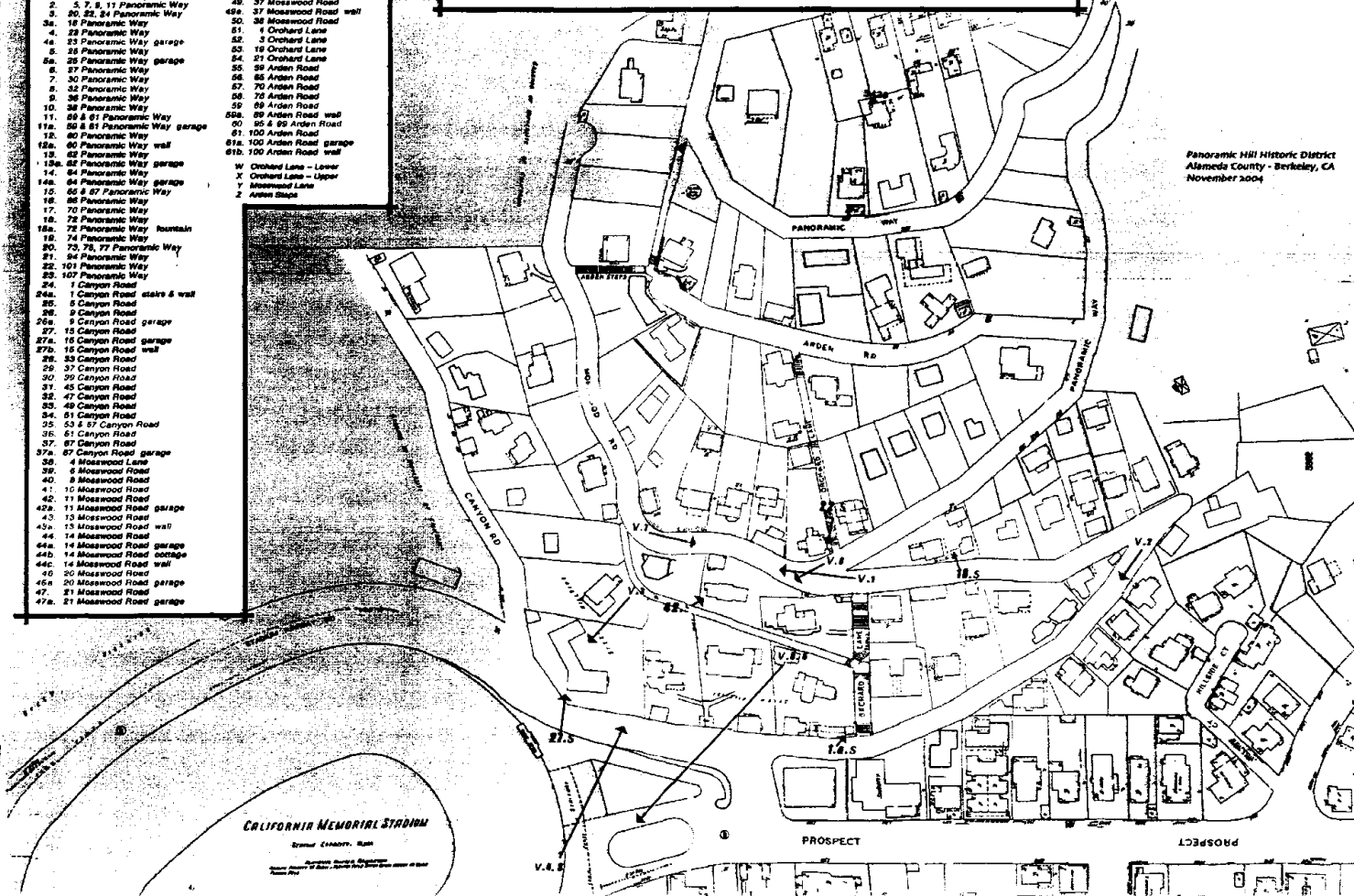
- | | |
|-----------------------------------|------------------------------|
| 1. 1 Panoramic Way | 48. 29 Mosswood Road |
| 1a. 1 Panoramic Way playhouse | 48a. 29 Mosswood Road garage |
| 2. 7, 8, 11 Panoramic Way | 49. 37 Mosswood Road |
| 3. 20, 22, 24 Panoramic Way | 49a. 37 Mosswood Road wall |
| 3a. 18 Panoramic Way | 50. 38 Mosswood Road |
| 4. 23 Panoramic Way | 51. 1 Orchard Lane |
| 4a. 23 Panoramic Way garage | 52. 3 Orchard Lane |
| 5. 25 Panoramic Way | 53. 19 Orchard Lane |
| 5a. 25 Panoramic Way garage | 54. 21 Orchard Lane |
| 6. 27 Panoramic Way | 55. 59 Arden Road |
| 7. 30 Panoramic Way | 56. 59 Arden Road |
| 8. 33 Panoramic Way | 57. 70 Arden Road |
| 9. 36 Panoramic Way | 58. 70 Arden Road |
| 10. 38 Panoramic Way | 59. 89 Arden Road |
| 11. 50 & 81 Panoramic Way | 59a. 89 Arden Road wall |
| 11a. 50 & 81 Panoramic Way garage | 60. 95 & 99 Arden Road |
| 12. 80 Panoramic Way | 61. 100 Arden Road |
| 12a. 80 Panoramic Way wall | 61a. 100 Arden Road garage |
| 13. 62 Panoramic Way | 61b. 100 Arden Road wall |
| 13a. 62 Panoramic Way garage | W Orchard Lane - Lower |
| 14. 84 Panoramic Way | X Orchard Lane - Upper |
| 14a. 84 Panoramic Way garage | Y Mosswood Lane |
| 15. 95 & 97 Panoramic Way | Z Arden Slope |
| 16. 86 Panoramic Way | |
| 17. 70 Panoramic Way | |
| 18. 72 Panoramic Way | |
| 18a. 72 Panoramic Way fountain | |
| 19. 74 Panoramic Way | |
| 20. 75, 76, 77 Panoramic Way | |
| 21. 84 Panoramic Way | |
| 22. 101 Panoramic Way | |
| 23. 107 Panoramic Way | |
| 24. 1 Canyon Road | |
| 24a. 1 Canyon Road stairs & wall | |
| 25. 5 Canyon Road | |
| 26. 9 Canyon Road | |
| 26a. 9 Canyon Road garage | |
| 27. 15 Canyon Road | |
| 27a. 15 Canyon Road garage | |
| 27b. 15 Canyon Road wall | |
| 28. 33 Canyon Road | |
| 29. 37 Canyon Road | |
| 30. 39 Canyon Road | |
| 31. 45 Canyon Road | |
| 32. 47 Canyon Road | |
| 33. 49 Canyon Road | |
| 34. 81 Canyon Road | |
| 35. 53 & 57 Canyon Road | |
| 36. 61 Canyon Road | |
| 37. 87 Canyon Road | |
| 37a. 87 Canyon Road garage | |
| 38. 4 Mosswood Lane | |
| 39. 6 Mosswood Road | |
| 40. 8 Mosswood Road | |
| 41. 10 Mosswood Road | |
| 42. 11 Mosswood Road | |
| 42a. 11 Mosswood Road garage | |
| 43. 13 Mosswood Road | |
| 43a. 13 Mosswood Road wall | |
| 44. 14 Mosswood Road | |
| 44a. 14 Mosswood Road garage | |
| 44b. 14 Mosswood Road cottage | |
| 44c. 14 Mosswood Road wall | |
| 45. 20 Mosswood Road | |
| 46. 20 Mosswood Road garage | |
| 47. 21 Mosswood Road | |
| 47a. 21 Mosswood Road garage | |

PANORAMIC HILL HISTORIC DISTRICT : BERKELEY CALIFORNIA

SKETCH MAP #4 - Color Slide + B&W photo View Locations



Panoramic Hill Historic District
Alameda County - Berkeley, CA
November 2004



Make UC A Good Neighbor
 195 The Uplands
 Berkeley, California 94705
lesleyemmington@gmail.com

January 29, 2024

Shraddha Navalli Patil, Senior Planner
 Physical & Environmental Planning
 University of California, Berkeley
 200 A&E Building
 Berkeley, California 94720-1382
planning@berkeley.edu

Comments and Questions re: Draft Environmental Impact Report (DEIR) for proposed UC Cal women's softball and Recreational Sports Intramural softball players (Project)

Dear Shraddha Navalli Patil:

The DEIR for the Project presents a most comprehensive design plan and *raison d'être* for modernizing and re-developing the Berkeley Cal Softball Field as it currently exists in Strawberry Canyon — all to increase game capacity, competition, media, access, and attendance in respect to Title IX for the Cal women's softball and Recreational Sports Intramural softball players. Yet, the DEIR's well-advanced proposal for such a state-of-the-art sports facility placed within Strawberry Canyon is actually like a smoke screen in that it seems to thwart any adequate discussion of the potentially significant environmental impacts upon Strawberry Canyon itself, upon the immediate adjacent community, and upon the community at-large.

B4-1

Furthermore, it can be argued that the DEIR fails to explore the potential of Edwards Field as an alternative site (George C. Edwards Stadium, 1932, listed on the National Register of Historic Places, #93000263) — a site that UC planners and the University President, herself, might discover as workable for a fully modernized Berkeley Cal Softball Field — potentially winsome for all, environmentally sound, and an over-all exciting location for crowds to gather just to watch women play softball.

B4-2

In regards to Strawberry Canyon, it would seem to be a substantial environmental oversight, that the DEIR appears to purposefully ignore the fact that the Project location is within the context of Strawberry Canyon, not environmentally limited to the surrounds of the Strawberry Canyon Recreation Area. This omission points to a failure to consider potential impacts to Strawberry Canyon's significant natural resources, lands and waters, and its wider scope of wildlife and recreational activities, of which the Strawberry Canyon Recreation Area is one component.

B4-3

Going back to 1864 when Frederick Law Olmsted, known as the father of American landscape architecture, came to Berkeley to outline a plan for both the University (then the College of California) and the town, he envisioned a campus and a town bordering the natural beauty of Strawberry Canyon:

B4-4

“... [Piedmont Way is] extended eastwardly to the mouth of the valley [Strawberry Canyon] or gorge in the mountains, which is part of the property of the College. This lane is extended up the gorge, first, however, crossing to the other side. Thence it is intended to follow up the course of the brook, as close upon its banks as is practicable... As the road follows a stream of water from the open landscape of the bay region into the midst of the mountains, it offers a great change of scenery within a short distance, and will constitute a unique and most valuable appendage to the general local attractions of the neighborhood.” (Frederic Law Olmsted, 1865)

More recently, in reflection of Olmsted’s vision, as well as many others since, a 1976 report prepared by Garrett Eckbo & Associates for the University’s Office of Architects states:

“...The larger question, which is central in these recommendations, is that whoever uses the Canyon area, for whatever purposes and in whatever part of it; and whoever looks at or into the Canyon from outside, or passes through or over it; are all experiencing it as a total landscape structure or complex, a total people/nature artifact. It’s impact on all of these experiences, visually and through the other senses, is one of its primary functions. Therefore, we have viewed the Canyon as a potential work of landscape art, including and transcending all of its technical, functional and cultural aspects. We believe that the comprehensive view will enhance relations between all of these component aspects, and improve each one. Institutional uses cannot expand much beyond their current areas...”

Yet, again, as stated above, the DEIR basically ignores any discussion of, or how, the Project might have any significant environmental impact upon Strawberry Canyon as a landscape with its own particular natural history and its own irreplaceable natural resources — today more fragile than ever. Perhaps this oversight can be explained in a “Working Paper” produced by UC Berkeley’s Physical and Environmental Planning office in 2002. The Working Paper states that in order “...to guide capital investment at UC Berkeley ...” and “... even though Strawberry Canyon is the most dramatic physical feature of the proposed Hill Campus...”, it is fundamental for future planning purposes that Strawberry Canyon be dropped as a defined landscape and be absorbed into a general category-of-place i.e. the Hill West Campus.

So, please find a question(s) here *vis.a.vis* the comments made above, and in regards to further environmental review:

- Can UC Berkeley’s Physical and Environmental Planning department arbitrarily limit the area of potential significant environmental impact for its own purposes to the Strawberry Canyon Recreation Area when proposing a project?
- Can UC Berkeley’s Physical and Environmental Planning arbitrarily broaden the area of environmental impact for its own purposes to the West Hill Campus when proposing a project?

Also, in regards to the comment and a serious suggestion above that the Edwards Stadium might be a workable and very dynamic alternative site, yet to be considered in the CEQA review process for the proposed UC Berkeley Cal Softball Field Renovation Project, it seems relevant that such a development could be a plus for both the University and the town of

B4-4
Cont.

B4-5

B4-6

B4-7

B4-8

Berkeley and, importantly, for the all women on the teams, and all their sports fans. Also, it seems relevant to consider that Edwards Stadium would be located adjacent to normal transportation lines, day and night restaurants in Downtown Berkeley, lighting everywhere, noise being a part of life, no special endangered species or trees being endangered, no serious concerns about historic mud slides from volcanic soils (historically across Centennial Road), no relevant responsibilities for potential overflow of the Strawberry Creek (potentially due to more cement paving and ground cover), no traffic jams from the comings and goings of everyone else in the Canyon, and no adjacent residential National Register Historic Districts, with fine residential citizens, some even professors from Campus (who do not deserve to be disturbed by the softball games, the glaring lights and noise, and traffic congestion, etc.). And, wouldn't it all seem great and fun if the Cal women's softball and Recreational Sports Intramural softball players could play in Edwards Field and all the out-of-town teams would want to come to Berkeley!

B4-8
Cont.

Please consider Edwards Stadium seriously as an alternative site. It is not only placed on the National Register as a Stadium, but its entire facility of some 80 acres is designated as the George C. Edwards Historic District, right in the center of Berkeley and part of the larger UC Berkeley athletic complex. What could be better than developing Edwards Stadium for the future use of Cal women's softball and Recreational Sports Intramural softball players ?

B4-9

Sincerely,
Lesley Emmington Jones
for Make UC A Good Neighbor

cc: Dean Metzger, Claremont Elmwood Neighborhood Association
Michael Kelly, Panoramic Hill Neighborhood Association
Michael Lozeau, Lozeau Drury, LLP



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F 510.836.4205

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Oakland, CA 94612

www.lozeaudrury.com
michael@lozeaudrury.com

January 29, 2024

By E-mail

UC Berkeley 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
planning@berkeley.edu

Re: Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project (SCH #2022110035)

Dear Ms. Navalli Patil:

I am writing on behalf of the Panoramic Hill Association (“PHA”) concerning the Draft Environmental Impact Report (“DEIR”) for the UC Berkeley Cal Softball Field Renovation Project (SCH #2022110035) (“Softball Facility” or “Project”) proposed for Strawberry Canyon.

PHA has a number of substantive comments that are very important to its members and their quality of life residing on Panoramic Hill. Of particular concern are the DEIR’s discussions of the Project’s noise and lighting impacts.

The most glaring omission of the DEIR is the absence of any analysis of the additional new noise impacts of the proposed 5 new games to be scheduled at the Facility (including four potential post-season games which would presumably more likely attract the maximum number of spectators), and the addition of up to 25 night games during the evening from 5 pm to 10 pm which currently do not occur during those hours under the existing baseline. In both of these situations, the DEIR fails to compare the proposed Facility’s noise impacts to the existing baseline conditions. The five new games must be compared to noise levels where no game is occurring. And, in order to address the Project’s actual noise affects, the noise impacts of the new night time games must be compared to the existing noise conditions at that time of the day. The current evening conditions would be no spectator or PA noise from the existing softball facility.

As for the Project’s lighting impacts, the DEIR fails to address the Project’s cumulative impacts on sky glow at all and the DEIR is insufficient in describing either the inputs it used for modeling the Project’s lighting affects or whether it compared the existing lower levels of

B5-1

B5-2

B5-3

lighting used for intramural activities at the softball facility to the new brighter lighting proposed for the Project.

↑ B5-3
Cont.

PHA has retained several expert consultants to inform them as well as the University of any omissions or concerns with the DEIR's assessment of noise and lighting impacts. Noise Consultant Derek Watry of noise consulting firm Wilson Ihrig has reviewed the DEIR's noise discussion. Mr. Watry's comments and curriculum vitae are attached as Exhibit A. Environmental Scientist Marc Papineau has reviewed the Project's lighting configuration and the DEIR's discussion of potential lighting impacts. Mr. Papineau's comments and curriculum vitae are attached as Exhibit B. These comments also rely on the extensive knowledge and experiences of the Panoramic Hill Association and its members regarding impacts associated with the University athletic events and facilities sited within Strawberry Canyon.

B5-4

I. PROJECT DESCRIPTION

The Project involves the demolition of the existing softball field, including the field, the existing bleachers for 350-spectators, batting cages, fencing, the restroom and storage structure, four 50-foot light towers, and most of the existing surface parking at the site. The bleachers and restroom/storage currently cover 2,410 square feet. The site would be graded, including the excavation and 2,500 cubic yards of soil and import of 4,600 cubic yards of fill. The Project would construct a new softball stadium consisting of the playing field, fencing, a concourse, press box, permanent seating for 1,500 spectators, six 70 to 90-foot tall towers and lights, and a new PA system. The concourse and press box would cover 30,500 square feet.

The Softball Facility would be used year-round. The most active period would be during the spring. Currently, the existing facility hosts 15-20 daytime intercollegiate softball events in the spring and 4 to 5 games in the fall. (DEIR, p. 3-27 [Table 3-2].) Currently there are no intercollegiate night games held at the facility nor any post-season games or multi-team invitational or regional play events. (*Id.*) The Project proposes to add up to 25 night games. (*Id.*) Up to 21 regular season games would be played in the spring each year at the Facility. (DEIR, p. 3-26.) About half the regular season games would be in-conference games, featuring up to five weekend series with two games each of those weekends, for a total of 10 in-conference games. (*Id.*) The other regular season games include up to 6 out-of-conference games. (*Id.*) One intercollegiate tournament is identified to occur in February of each year which would include up to 5 games, all of which could be played at night. (DEIR, p. 3-26.) If the team qualifies for post-season play, that would add another possible 4 night games to the schedule. (*Id.*) Although the Project proposes to allow up to 25 night games at the new Facility, the DEIR reviews the number of night games that Stanford women's softball, another Pac-12 team, actually plays at its facility was "approximately 11 games." (*Id.*) The DEIR states that "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." (*Id.*)

B5-5

According to the DEIR, average attendance for softball games during the regular spring season currently is about 500 spectators per game based on games between 2016 and 2022. (DEIR, p. 3-4.) The DEIR indicates that the existing 350 bleacher seats can be supplemented

B5-6

with portable seats for a temporary capacity of 1,340 spectators. (*Id.*, p. 3-3.) The new stadium would have permanent fixed seats for 1,500 spectators and an assumption that the average number of Spring season spectators would be about 1,000 people for each event. (*Id.*, p. 3-27.) Fall games currently attract about 300 spectators which is assumed also to double to an average of 600 people with the new facility. (*Id.*) Softball team practices would occur throughout the fall and spring. (*Id.*) The PA system would be used for both games and practices. (*Id.*, p. 3-24.)

B5-6
Cont.

In addition to the intercollegiate women's softball, the facility would continue to host intramural softball, camps and clinics, and during the summer, youth camps. (*Id.*, p. 3-27.) The field lights would be operated every day during the school year until 10 pm in order to support the intramural use. (*Id.*)

According to the DEIR, "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." DEIR, p. 3-4: (NCAA 2011). According to the NCAA documents, "[a]ll footcandle levels are target minimum averages." NCAA Best Lighting Practices (Papineau Comments, Attachment B [attached hereto as Exhibit B].) Although not mentioned in the EIR, the lighting levels for a national championship game are higher.

B5-7

The DEIR contains a clear statement that "[n]on-athletic events, such as concerts or other similar entertainment uses would not be allowed at the project site." DEIR, p. 3-2. PHA believes this is an important restriction on the use of the facility. Accordingly, this commitment should be included in the enforceable mitigation measures and monitoring program for the Project.

B5-8

II. Legal Background

"The 'foremost principle' under CEQA is that the Legislature intended the act 'to be interpreted in such a manner so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.'" (*Laurel Heights Improvement Assn. v. Regents of Univ. of Calif.* (1988) 47 Cal.3d 376, 390 ["*Laurel Heights I*"] [citation omitted].) With certain exceptions, CEQA requires an agency to analyze the potential environmental impacts of proposed projects in an EIR. (Public Resources Code ("PRC") § 21100.) The EIR is "the heart of CEQA" and the "primary means" of ensuring that public agencies "take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state." (*Laurel Heights I*, 47 Cal.3d at 392.) Adherence to the EIR process ensures that "the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees." (*Id.*)

B5-9

CEQA has two purposes. First, CEQA is designed to truthfully inform the public about the potential environmental effects of a project. (CEQA Guidelines § 15002(a)(1).) "Thus, the EIR 'protects not only the environment but also informed self-government.'" (*Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal. 3d 553, 564.) Second, CEQA requires agencies to

reduce environmental damage when “feasible” by requiring “environmentally superior” alternatives and mitigation measures. If the project will have significant effects, the agency may approve the project only if it makes express findings that it has “eliminated or substantially lessened all significant effects on the environment where feasible” and that any unavoidable significant effects are “acceptable due to overriding concerns.” (PRC § 21081.)

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III. DISCUSSION

A. The DEIR’s Discussion of the Project’s Potential Noise Impacts is Insufficient, Fails to Address the New Noise Impacts of Additional Games and Night Games, and, in Several Important Instances, is Not Supported by Substantial Evidence.

Mr. Watry’s expert review of the DEIR’s noise discussion and Noise Appendix discloses a number of omissions and flaws that render it insufficient pursuant to CEQA. (Watry Comments, Exhibit A.) PHA requests that the University address each of these flaws and recirculate the noise analysis for additional public comment before finalizing the EIR.

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B5-10

1. The DEIR’s Evaluation of Events That Replace the 20 Existing Softball Games at the Existing Facility Fails to Disclose the Actual Crowd and PA Noise Baseline From Which to Measure the Impacts of the Project.

Initially, Mr. Watry ran into difficulty reviewing the various noise conclusions in the DEIR because it does not disclose any actual measurements of noise levels resulting from past softball games. Instead, the DEIR claims to identify crowd noise levels by lifting numbers from “applicable research papers” submitted to an Institute of Noise Control Engineers conference in 1991, referencing Hayne et. al. 2011. (DEIR, p. 4.5-23.) At my request, UC Planning promptly provided the referenced Hayne paper. However, that paper makes clear that it only sets forth “equations that are suitable for use by consultants to predict the noise emissions from small to medium sized crowds (up to 100 people) located in outdoor spaces.” (Hayne et al. 2011, pp. 1, 6.) Indeed, the number of patrons at the venues used to prepare the paper ranged from 10 to 93 patrons and did not contain “any other significant noise sources” from the patrons, such as a public address system. Nor does the DEIR inform readers of the suggested noise levels presumably lifted from that paper. (Watry Comment, p. 2.) Mr. Watry points out that the DEIR states that the PA volume levels will be operated at 6 dBA above the spectator sound levels. (*Id.*, p. 3.) Obviously, without disclosing the underlying spectator volume, the relative increase in noise fails to disclose the Project’s expected noise levels. (*Id.*)

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B5-11

The DEIR also hides its analysis behind a generic reference to the use of the SoundPlan model. As Mr. Watry notes, the SoundPlan model is an appropriate model to evaluate the Project. But, without disclosing the inputs to the model and a description of how various features of the Project and the topography surrounding Strawberry Canyon were taken into account when applying the model, it is impossible for the public to review the merits of the modeling and whether it accurately reflects the existing conditions and the Project’s operations.

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B5-12

This black box approach to discussing the Project’s noise impacts is especially

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B5-13

concerning because the DEIR explicitly describes only the most basic science of noise attenuation and only mentions topology as an “obstacle” that can block sound (DEIR, p. 4.5-24), not as a factor that can enhance sound transmission which is the case here. (Watry Comment, p. 3.) The DEIR asserts that noise from softball games will attenuate at 6 dB per doubling of distance over hard surfaces and 7.5 dB per doubling over soft surfaces. (DEIR, pp. 4.5-3, 4.5-24.) As Mr. Watry points out, those values only apply to flat topology. (Watry Comment, p. 3.) None of the area around the Project is flat for noise purposes. As a result, in conjunction with the omitted baseline and input information, it is not apparent that the DEIR takes into account the steep topology encompassing the Project.

B5-13
Cont.

“The EIR must contain facts and analysis, not just the bare conclusions of a public agency.” (*Santiago Cty. Water Dist. v. Cty. of Orange* (1981) 118 Cal.App.3d 818, 830.) “An agency’s opinion concerning matters within its expertise is of obvious value, but the public and decision-makers, for whom the EIR is prepared, should also have before them the basis for that opinion so as to enable them to make an independent, reasoned judgment.” (*Id.*) For these reasons, the DEIR’s noise discussion should be supplemented and recirculated for public review and comment.

B5-14

2. The DEIR’s Use of FICON’s Noise Criteria Recommendation for Airport Noise Effects as a Significance Threshold for The Project’s Noise Impacts is Not Based on Substantial Evidence.

The DEIR’s own noise analysis establishes that the proposed noise levels of the Project will exceed the City of Berkeley’s Exterior Noise Limits. Rather than address that significance threshold and impact head on, the DEIR misstates the City’s ordinance and casts about for a more sympathetic significance threshold. These efforts to avoid the City’s ordinance as an appropriate threshold of significance are not supported by reason or substantial evidence.

First, the DEIR attempts to limit the applicability of the City’s “Exterior Noise Limits” as only applying to “stationary noise sources.” (DEIR, p. 4.5-18.) For example, the DEIR’s lead-in reference to the City’s limits suggests that they only apply to stationary sources: “Permanent stationary noise sources in Berkeley are regulated by Municipal Code Section 13.40.050, Exterior Noise Standards.” (*Id.*) The DEIR doubles down on this characterization, referring to the Exterior Noise Limits as “the City of Berkeley’s stationary noise limits.” (*Id.*)

B5-15

There is no such limit on the application of the City’s Exterior Noise Limits. Nothing in the express purposes and intent of the City’s noise ordinance suggests the limits are designed or only applicable to “stationary sources.” (Berkeley Muni. Code § 13.040.010.) Moreover, the express language of various code sections demonstrates the fallacy of the DEIR’s assertion. Indeed, “Loudspeakers (Amplified Sound) Not Associated With an Event” are specifically prohibited from exceeding the Exterior Noise Limits established in Section 13.40.050. (§ 13.040.070(B)(2).) Loudspeakers for an event within Berkeley would be required to obtain a permit, which if issued at all, would limit the amplified sound of the event from exceeding “15 dBA above the ambient noise level measured at the exterior of any dwelling unit located on any residential property; and in no case to exceed 65 dBA at the exterior of any such building....” (§

13.040.100(B)(5)(a). “On public property such sound may not exceed 15 dBA above the ambient noise level measured at any point 50 feet from the sound amplifying equipment.” (§ 13.040.100(B)(5)(b)). In no event would the City issue a permit for an event that went past 8 p.m. in the evening. (§ 13.040.100(B)(3). The final blow to the DEIR’s strained interpretation of the City’s noise ordinance is its failure to acknowledge that the ordinance specifically addresses stationary equipment at section 13.40.070(B)(7) and sets forth specific noise limits from such equipment. (§ 13.40.070(B)(7) (“Stationary Equipment. Maximum sound levels for repetitively scheduled and relatively long term operation (period of 10 days or more) of stationary equipment...]; *id.*, Table 13.40-4.)

B5-15
Cont.

As is clear from these provisions of the City’s Noise Ordinance, there is no limitation to apply the Exterior Noise limits to “stationary sources.” In fact, were the Project within the City’s jurisdiction, the City’s event permit noise limits would plainly apply up until 8 pm (assuming a permit were issued) and after that, the Exterior Noise Limits would apply.

In addition to the clumsy attempt to reinterpret the City’s noise ordinance, the DEIR then proposes to replace the City’s clear noise standards for federal significance recommendations made in a report issued in 1992 by the Federal Interagency Committee on Noise (FICON) entitled “*Federal Agency Review of Selected Airport Noise Analysis Issues.*” (See DEIR, p. 7-5.) Whatever levels of annoyance of noise from jet aircrafts flying overhead may have been evaluated in the *Airport Noise Analysis* certainly are not analogous to the steady crowd and PA noise for a 2.5 to 3 hour softball game attended by 1,000 to 1,500 people. The analogy is even more tenuous from a technical perspective, as Mr. Watry points out:

B5-16

the noise measurement metric used in this study is the Community Noise Equivalent Level (CNEL), a 24-hour, weighted average. There is nothing in the DEIR to support the contention that the allowable noise exposure increases using this daily metric are applicable to softball games that take several hours.

(Watry Comments, p. 3.)

As a result, the DEIR’s effort to explain why it chooses to use the City’s Exterior Noise Limits as significance thresholds for stationary mechanical equipment but not for the amplified events at the Facility is without any evidentiary basis and an abuse of discretion. The DEIR’s effort to justify using the FICON airport standard and a 24-hour average as the sole threshold for evaluating the noise impacts of the Project’s spectators and PA is an abuse of discretion. This self-serving effort by the University to apply its discretion to select a noise threshold of significance violates CEQA. “[T]he discretion to choose thresholds of significance [is] ‘substantial,’ but that discretionary authority is not unlimited or absolute.” (*King & Gardiner Farms, LLC v. Cnty. of Kern* (2020) 45 Cal.App.5th 814, 893.) “[A] lead agency [is] required ‘to support its chosen quantitative method for analyzing significance with evidence and reasoned argument.’” (*Id.*, quoting *Ctr. for Biological Diversity v. Dep’t of Fish & Wildlife* (2016) 62 Cal.4th 204, 228.) “[W]hen the agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method.” (*Id.* See also *Berkeley Keep Jets Over the*

B5-17

Bay Comm. v. Bd. of Port Comm'rs (2001) 91 Cal.App.4th 1344, 1373, 1381–83 [even for an airport project, Court rejects sole use of FICON recommendation and CNEL-based threshold as a proper threshold of significance].) The DEIR's noise discussion studiously avoids mentioning the limited applicability of the FICON recommendation to airplane impacts. The only objective significance thresholds for noise impacts on nearby residents within the City of Berkeley are the City's Exterior Noise Limits which in fact apply to those parcels. (Watry Comments, pp. 4-6.)

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Cont.

3. The DEIR Fails to Sufficiently Analyze the Significant Noise Impacts That Result from the Project.

As a result of the above errors, the DEIR's analysis of the noise impacts of the 20 games in the new Facility that would replace the existing number of games played at the current facility, is not supported by substantial evidence and is insufficient. In order to evaluate the impacts of these replacement games, the DEIR must provide substantial evidence and a sufficient explanation establishing the existing noise levels and number of occurrences from the existing number of games, justify the use of any significance threshold other than the readily applicable Berkeley Exterior Noise Limits, apply an appropriate attenuation rate for the Project area, and provide sufficient explanation of its modeling effort.

B5-18

The even more obvious flaws are the DEIR's failure to 1) identify and address the new noise impacts of the 5 additional games that are expected to occur as a result of the Project, and 2) identify and address the new noise impacts of the 11 to 25 night games beginning after 5 pm proposed to be added by the Project.

a. The Noise Impacts of the Five New, Additional Games Proposed by the Project Are Not Evaluated by the DEIR.

The Project proposes to approve an additional five new games per year beyond the 20 that currently occur each year at the existing softball facility. PHA agrees that 20 daylight games are part of the existing conditions of operating the current softball facility. As a result, comparing the sound levels from 20 future daylight games at a new Facility to the existing sound levels of 20 games at the current facility is appropriate. However, there are no existing games and noise that would offset the new noise from the five new, additional events, even if they were all played during daylight. Four of the five additional events are included due to post-season play. As a result, assuming the validity of the DEIR's noise modeling, if the five additional events are "maximum events" (maximum attendance), then noise levels from those 5 new events per year will exceed Berkeley's Exterior Noise Limits at 12 of the 15 receivers (DEIR, p. 4.5-34, Table 4.5-17; Watry Comments, p. 4.) Assuming the five new events are typical events, then noise levels from those 5 new events per year will exceed Berkeley's Exterior Noise Limits at 10 of the 15 analyzed receivers. (DEIR, p. 4.5-33, Table 4.5-16; Watry Comments, p. 4.)

B5-19

As a result, for the five new events, the DEIR fails to address the noise levels from these new events at all and fails to acknowledge the new significant noise impacts that will result from adding five more days where Berkeley's noise limits will be exceeded for numerous residences on Panoramic Hill.

b. The Noise Impacts of the 25 New Night Games Proposed by the Project Are Not Evaluated by the DEIR.

Similarly, the DEIR does not address the noise impacts of its proposal to add from 11 to 25 night games at the new Facility. The addition of up to 25 new night games results in numerous intercollegiate games occurring at times when currently no events occur. Hence, for these newly scheduled night games, any noise generated by the Project would be a new addition to the conditions at and around the Project site at night.

B5-20

The City of Berkeley's municipal code establishes exterior noise limits for the Panoramic Hill neighborhood and the Environmental Safety – Residential zoning area of 55 dBA during the daytime (7:00 a.m. to 10:00 p.m.) for noise levels exceeding 30 minutes in duration in any hour. (Berkeley Muni. Code § 13.40.050(A)(2)(a) & Table 13.40-1.) The ordinance prohibits at any time any noise exceeding 75 dBA during the daytime hours. (BMC § 13.40.050(A)(2)(e).) For noises occurring for more than 15 minutes in any hour, the ordinance limits daytime levels to no greater than 60 dBA during the day (BMC § 13.40.050(A)(2)(b).) For noises occurring for more than 5 minutes in any hour, the ordinance limits daytime levels to no greater than 65 dBA during the daytime. (BMC § 13.40.050(A)(2)(c).) For noises occurring for more than 1 minute in any hour, the ordinance limits daytime levels to no greater than 70 dBA. (BMC § 13.40.050(A)(2)(d).)

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According to the DEIR Noise Appendix, existing ambient levels in the adjacent neighborhoods range from 47.1 to 54.1 dBA Leq from 7 pm to 10 pm. (DEIR, Noise Appendix; Watry Comments, p. 5.) Any softball game will include noise levels in excess of 55 dBA for more than 30 minutes in any hour. Thus, for the proposed 25 new night games, assuming the validity of the DEIR's noise modeling, if the night games are typical events, then noise levels from those 25 new night events per year will exceed Berkeley's Exterior Noise Limits at 10 of the 15 analyzed receivers. (DEIR, p. 4.5-33, Table 4.5-16; Watry Comments, p. 4.) If some or all of the night events are "maximum events" (maximum attendance), then noise levels from each of those new night events per year will exceed Berkeley's Exterior Noise Limits at 12 of the 15 receivers (DEIR, p. 4.5-34, Table 4.5-17; Watry Comments, p. 4.)

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Even applying the DEIR's unsubstantiated FICON airport standards to the 25 new night games, the noise monitoring reported in the DEIR's Noise Appendix shows that a new softball event will increase the Leq noise level by more than the applicable 3 and 5 dB limits beyond the existing ambient noise levels at a majority of the measured receptor sites. Applying the DEIR's FICON-based analysis for the proposed 5 new games, Dr. Watry calculates that typical events will exceed the FICON-based criteria at 7 of the 15 receptor sites. (Watry Comments, p. 5.) For maximum events, noise levels would exceed the FICON-based criteria at 11 of the 15 receptor sites. (*Id.*)

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"[I]n preparing an EIR, the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project." (*Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App. 4th 1099, 1109.) An

B5-24

agency cannot avoid addressing a fair argument of a proposed project’s impacts by selecting a single, self-serving threshold of significance. Instead:

[I]n preparing the EIR, the agency must determine whether any of the possible significant environmental impacts of the project will, *in fact*, be significant. In this determination, thresholds of significance can once again play a role. As noted above, however, the fact that a particular environmental effect meets a particular threshold *cannot be used* as an automatic determinant that the effect is or is not significant.

(116 Cal.App.4th at 1109. *See also E. Sacramento Partnerships for a Livable City v. City of Sacramento* (2016) 5 Cal.App.5th 281, 302–03 [emphasis added].)

The above analysis shows that the DEIR fails to address the actual noise effects of the Project. The DEIR fails to address the evidence that the Project will introduce additional spectator events at a different time of day than occurred at the existing facility. The new events will occur during the quieter evening hours when more residents are home from work or school. These proposed additions and changes will have significant noise levels because the events will readily exceed available noise thresholds designed for the affected community around the Project. The awkward use of the FICON airplane, 24-hour average noise differentials does not automatically determine the significance of new noise affects from the Project. The DEIR has not – and cannot – rationally explain how the evidence of exceedances of the Berkeley Exterior Noise Limits designed to apply to the neighborhoods around the Project is not substantial evidence of a significant noise impact. Moreover, applying even the FICON-based criteria applying the existing ambient conditions in the evening at the site shows a significant noise impact for new events at that time of day. Accordingly, the DEIR must be modified to address this impact, consider all feasible mitigation measures to address Project’s noise impacts, and be recirculated for public review and comment.

B. The DEIR Discussion of the Project’s Visual and Aesthetic Impacts on the Adjacent Neighborhood From the Facility’s New Lights and Addition of up to 25 New Night Games is Insufficient and Not Supported by Substantial Evidence.

Environmental Scientist Marc Papineau has prepared a review of the DEIR’s discussion of lighting affects of the Project. (Papineau Comments, Exhibit B.) Mr. Papineau’s review discloses two main flaws in the DEIR’s analysis. First, although acknowledging the adverse effects of sky glow from lighted facilities such as the Project, the DEIR makes no effort to identify either the existing sky glow conditions within Strawberry Canyon at times the Project will be operating nor whether the Project will have significant direct or cumulative sky glow effects. Second, similar to the noise analysis, the DEIR again takes a “black box” approach by purporting to properly model the Project’s glare and light spill effects but without discussing or providing the inputs that were selected for the model.

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1. The DEIR Fails to Address the Project's Cumulative Sky Glow Effects.

The DEIR acknowledges that light pollution includes sky glow. (DEIR, p. 4.2-7 [“Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass, sky glow, and over-lighting”].) However, the DEIR then proceeds to ignore this type of light pollution. (DEIR, Appendix D, p. 5 [“Skyglow metrics were not considered for this analysis as they fall outside of CEQA considerations”]; DEIR, pp. 4.2-7 – 4.2-8, 4.2-29.) The DEIR only addresses vertical light spill and glare. (DEIR, pp. 4.2-7 – 4.2-8; DEIR, Appendix D, pp. 4-5; *Id.*, p. 2 [light analysis used “metrics quantifying light spill and glare potential at the Receptor Sites”]; *Id.*, p. 2 [“Receptor Sites were selected to illustrate light spill and glare potential”].)

As the University recognizes in its EIR prepared for its Hill Campus Wildland Vegetative Fuel Management Plan (“WVFMP EIR”), “sky glow is an area-wide illumination of the night sky from human-made light sources....” (WVFMP EIR, p. 3.2-7.) The DEIR’s Appendix D attempts to narrow this definition, stating “Skyglow: The artificial brightening of the sky from terrestrial light sources that reduces the visibility of celestial objects.” (DEIR, Appendix D, p. 12.) This addition of reducing the visibility of celestial objects may be the case on clear nights, but sky glow also occurs on cloudy nights especially those associated with the marine layer along the California coast. “In communities near the California coast, there are two types of sky glow: that caused by low clouds (the “marine layer”) and that caused by uplight on clear nights (clear sky glow).” (San Marin High School Stadium Lights Project, Partially Revised Final EIR, p. 7 (Oct. 2019) (“SMHS EIR”) [excerpt attached as Exhibit C].)

There is no rationale provided for the statement in the Lighting Appendix asserting that sky glow impacts “fall outside of CEQA considerations.” (DEIR, Appendix D, p. 5.) Other agencies have done quantitative analyses of a project’s sky glow effects, distinct from light spill and glare. (See, e.g. SMHS EIR.)

There are significance criteria for sky glow as well. So that cannot be a reason for the disavowal of this impact by CEQA in Appendix D. The DEIR relies on lighting criteria for lighting and glare established by the Commission Internationale d’Éclairage’s (CIE) in its *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations* (2d Edition 2017). That 2017 CIE Guide has since been updated with a Guidance Note issued by the CIE in 2020. The Guidance Note supersedes previous CIE guidance notes “to reflect the changes in international guidance regarding obtrusive light as detailed in *CIE 150: 2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*.” CIE’s current guidance establishes significance criteria for a lighting project’s sky glow affects. For example, the CIE establishes “Limitation of skyglow” standards. (Papineau Comments, Attachment A, pp. 15-16.) The CIE sets a value for “Maximum values of upward flux ratio [“UFR”] of installation” for four or more luminaires. (*Id.*) The DEIR identifies the Panoramic Hill neighborhood is in zone E2. The CIE UFR limit for zone E2 for a sports installation is 2. As Mr. Papineau explains:

An available metric for quantifying a project’s contribution to sky glow is Upward Waste Light Ratio (UWLR) or Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation’s luminaires

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and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field.

(Papineau Comments, p. 6.)

Applying the CIE criteria, Mr. Papineau demonstrates that the Project will have a significant impact on sky glow. (Papineau Comment, Attachment C.) Mr. Papineau calculates that the UFR for the Project will be 2.3. (*Id.*) That level of UFR exceeds the CIE significance threshold. (*Id.*)

The DEIR's complete omission of the direct and cumulative impacts of this type of light pollution from the Project is inconsistent with CEQA. (*Protect the Historic Amador Waterways*, 116 Cal.App.4th at 1109.) The DEIR should be amended to evaluate the Project's sky glow impacts and recirculated for public review and comment.

2. The DEIR Does not Sufficiently Disclose the Inputs and Assumptions Applied to the Modeling of the Project's Glare and Light Spill.

Although the DEIR does not ignore glare and light spill, the discussion is insufficient for a reader to make an "independent, reasoned judgment" about the validity of the University's draft conclusion that these two lighting impacts will be less than significant. As Mr. Papineau states, "[w]hile the AGi32 model is highly capable, the Draft EIR and Appendix D do not explain how the model used actually was applied." (Papineau Comments, p. 4.) The general references to the manufacturer's "optimization effort" is left to one's imagination. (DEIR, Appendix D, p. 9.) Likewise, the "Reduction Factor" applying percentage reductions to the light numbers for three of the four receptor locations in order to factor in light reduction from foliage is the result of a modeling effort the inputs of which are not explained. (Papineau Comments, p. 3.) Nor is there any way to determine whether the Reduction Factors applied to receivers A, B, C, and D in Appendix D "should be applied to other receivers which were not evaluated and which could receive spill light from the Cal Softball Field." (*Id.*, p. 3.) Mr. Papineau identifies the area and list of receivers that are left unaddressed by the DEIR. (*Id.*, pp. 10.) Nor is it apparent what level the existing softball facility lighting was set for the one day of field measurements made on March 16, 2023.

As a result, the public and the University are left without a sufficient basis in the DEIR's lighting analysis "to enable them to make an independent, reasoned judgment." (*Santiago Cty. Water Dist.*, 118 Cal.App.3d at 830.) Likewise, it cannot be determined whether the lighting impact analysis provides a sufficient analysis of the 25 new night events with brighter lighting that would replace the intramural level lighting that currently occurs until 10 pm at the existing softball facility. For this reason, the DEIR's glare and light spill discussion and analysis should be supplemented and recirculated for public review and comment.

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IV. CONCLUSION

For the foregoing reasons, the Panoramic Hill Association and its members urge the University to complete and circulate a supplemental DEIR including the assessments of the significant noise and lighting impacts omitted from the current DEIR and feasible mitigation measures addressing those impacts. In the meantime, PHA request an opportunity to meet with the University to discuss these and other concerns about the impacts of the Project.

Lastly, PHA reserves its right to supplement these comments during review of the EIR for the Project. *Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1120 (“any party may bring an action pursuant to section 21167 if it has raised an objection to the adequacy of an EIR prior to certification”).

Thank you for your attention to these comments.

Sincerely,



Michael R. Lozeau
Lozeau | Drury LLP on behalf of the
Panoramic Hill Association

B5-36

EXHIBIT A



29 January 2024

Michael Lozeau, Esq.
Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

Subject: *Cal Softball Field Renovation Project, Draft Environmental Report*
December 2023
Review of Noise Impact Analysis

Dear Mr. Lozeau:

In July 2020, I reviewed the noise section of the *Addendum to The University of California, Berkeley 2020 Long Range Development Plan Environmental Impact Report for Levine-Fricke Softball Field Improvements Project*, July 2020 (“July 2020 Addendum”) for the subject project proposed in Berkeley, California. Since that time, the project sponsor, The University of California at Berkeley, undertook the preparation of a Draft Environmental Impact Report:

Cal Softball Field Renovation Project - Draft Environmental Impact Report (“DEIR”)
State Clearinghouse Number: 2022110035
U. C. Berkeley, December 2023

This letter presents our comments on this DEIR document.

Wilson Ihrig, Acoustical Consultants, has practiced exclusively in the field of acoustics since 1966. During our 58 years of operation, we have prepared hundreds of noise studies for Environmental Impact Reports and Statements. We have one of the largest technical laboratories in the acoustical consulting industry. We also regularly utilize industry-standard acoustical programs such as Environmental Noise Model (ENM), Traffic Noise Model (TNM), SoundPLAN, and CADNA. In short, we are well qualified to prepare environmental noise studies and review studies prepared by others.

General Comments About Athletic Noise

Residents in the area near the Cal Softball Field and the adjacent Witter Rugby Field are not unique in their concern about sports facility noise. I have previously been involved in numerous matters in which such noise was contentious, including high school sports field developments in Albany and the Brentwood neighborhood of Los Angeles, a Little League field development in

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Atherton, and a batting cage in Castro Valley. Sports noises are unnatural, unusual, in the ears of many, unnecessary, and may also potentially be loud. These are all factors that many cities take into consideration when determining if a noise is unreasonable and, therefore, prohibited. Many cities include in their noise control regulations a list of factors to be considered in assessing a noise impact similar to the following taken from the California Model Noise Ordinance:

1. The sound level of the objectionable noise.
2. The sound level of the ambient noise.
3. The proximity of the noise to residential sleeping facilities.
4. The nature and zoning of the area within which the noise emanates.
5. The number of persons affected by the noise source.
6. The time of day or night the noise occurs.
7. The duration of the noise and its tonal, informational, or musical content.
8. Whether the noise is continuous, recurrent, or intermittent.
9. Whether the noise is produced by a commercial or noncommercial activity.¹

One key point of these factors is recognizing that the quantitative level of noise in decibels, while important, is not the sole factor in determining whether a noise is acceptable to the community.

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Dearth of Details about DEIR Noise Analysis

Noise analysis calculations start with a source noise level, typically provided as a sound pressure level at a given distance but sometimes as a sound power level (which is independent of distance). The July 2020 Addendum provided some information about the source noise levels based on measurements that had been made at a Cal softball game in March 2019. Information about the crowd noise levels and the PA system noise levels were provided. The DEIR analysis lacks any such information stating only that “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).” [DEIR at p. 4.5-23]

I have reviewed the Hayne paper, and of particular note is this line, “Using these factors as a basis, a series of controlled and uncontrolled experiments have been conducted in order to derive a set of equations that are suitable for use by consultants to predict the noise emissions from small to medium sized crowds (up to 100 people) located in outdoor spaces.” [Hayne, et al., 2011; emphasis added] As the subject project analyzes noise from much larger crowds – 1,000 to 1,500 people – it is completely unclear how the noise from spectators has been modeled in the DEIR analysis. As for the PA, the DEIR states, “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.” Clearly, without knowledge of the crowd noise, this relative reference is relatively useless.

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¹ *Model Community Noise Control Ordinance*, Office of Noise Control, California Department of Health, April 1977.

Purportedly, the DEIR preparers somehow used the Hayne data in a commercially-available software package called SoundPlan, a package we ourselves use. At a minimum, the DEIR should provide the input levels used for the analysis.

↑ B5-39
Cont.

Another very pertinent factor in this situation is the topography of the area around the project site. Many, not to say ‘most’, of the homes on Panoramic Hill overlook the project site and the elevated far side of the appropriately named Strawberry Canyon may also come into play by containing acoustical energy (noise) in the canyon. Yet, the DEIR only discusses the most basic analysis of outdoor sound attenuation in Section 4.5.1.2 ACOUSTIC FUNDAMENTALS and elsewhere. The DEIR states in two places (p. 4.5-3 and 4.5-24) that sound from a point source attenuates at 6 dB per doubling of distance over hard surfaces and 7.5 dB per doubling of distance over soft surfaces. Those values are only correct when the topology is flat, which the DEIR notes. However, it never explicitly states that the topography is considered nor does it comment on the effective attenuation rates given its calculation results.

B5-40

Transparency and disclosure are part and parcel of the CEQA environmental review process. The DEIR needs to provide a much better description of the SoundPlan model which is otherwise a “black box” that cannot be scrutinized. The DEIR needs to provide much more information about crowd noise source levels, how the future softball stands and press box were accounted for, how the PA system speaker output was modeled, and how the topography of the area around the project site was incorporated in the model.

B5-41

Inappropriate and Misapplied Standard for Softball Game Noise

The DEIR cites a study published in 1992 by the Federal Interagency Committee on Noise (FICON) as the basis for the adopted threshold of significance for softball game noise. The actual name of the FICON report cited is *Federal Agency Review of Selected Airport Noise Analysis Issues*. As the name indicates, the subject of this study was noise from jet aircraft, not sports facilities. Furthermore, the noise measurement metric used in this study is the Community Noise Equivalent Level (CNEL), a 24-hour, weighted average.² There is nothing in the DEIR to support the contention that the allowable noise exposure increases using this daily metric are applicable to softball games that take several hours.

B5-42

Even if one were to allow that extrapolating the conclusions of a study on jet aircraft noise using a 24-hour metric to a study on softball noise using an hourly metric were permissible, the DEIR’s operational (i.e., game noise) analysis would still be inadequate because it relies solely upon a relative threshold of significance, the notion that a project can always add just a little more noise to an environment without causing any sort of impact. The long-run fallacy of this argument is clear: no one project may ever cause an impact, but over time the environment could become significantly degraded by a series of projects that each increases the noise incrementally. Therefore, it is imperative that relative thresholds of significance be paired with

B5-43
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² The CNEL is calculated by energy-averaging, also known as logarithmically averaging, the noise levels over an entire 24-hour period after weighting (increasing for the purposes of calculation) the noise levels between 7:00 p.m. and 10:00 p.m. by 5 dB and those between 10:00 p.m. and 7:00 a.m. by 10 dB.

absolute thresholds. In this matter, one look no further than the Berkeley Municipal Code for such an absolute threshold.

↑ B5-43
Cont.

Appropriate and Reasonable Absolute Standard for Softball Game Noise

A reasonable absolute standard, already cited in the DEIR, is the City of Berkeley Exterior Noise Limits. As correctly shown in Table 4.5-6 of the DEIR, the applicable noise limit for homes zoned ES-R (as all of those on Canyon Road, Mosswood Road, and Panoramic Way are) during the hours that the softball stadium will be used is 55 dBA L₅₀. The L₅₀ level is that which is exceeded 50% of the time during a given time period or event. This can be difficult to calculate due to a lack of statistical distribution data about source levels, so the DEIR reasonably calculated the L_{eq} which is the “decibel” (logarithmic) average noise level. While the L₅₀ and the L_{eq} are not necessarily equal, given any better information, it is reasonable to presume that they are.

B5-44

The DEIR presents the results of its softball game noise for “typical events” in Table 4.5-16 on DEIR page 4.5-33. This table is reproduced below, and all of the noise levels at analyzed receiver that are predicted to exceed the Berkeley Noise Ordinance Limit are highlighted. This is the case for 10 of the 15 receivers. The results for “maximum events” (maximum attendance) indicate that the Noise Ordinance Limit will be exceeded at 12 of the 15 receivers (DEIR results in Table 4.5-17 on p. 4.5-34, not reproduced).

B5-45

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	
No.	Address		Existing Typical Event (500 Spectators) ²	Project Typical Event (1,000 Spectators) ³
LT1	67 Canyon Road	63.5	63.5	64.3
LT2	38 Mosswood Road	57.5	56.2	55.4
LT3	15 Canyon Way	55.0	59.0	49.5
LT4	280 Panoramic Way	54.5	56.4	52.8
P01	61 Canyon Road	63.5	58.4	60.7
P02	53 Canyon Road	63.5	57.5	58.0
P03	37 Mosswood Road	57.5	58.8	59.9
P04	29 Mosswood Road	57.5	57.7	57.2
P05	21 Mosswood Road	57.5	56.6	54.5
P06	44 Arden Road	55.0	54.8	56.6
P07	99 Arden Road	55.0	56.4	55.1
P08	48 Mosswood Road	57.5	54.3	57.1
P09	299 Panoramic Way	54.5	53.2	55.8
P10	8 Panoramic Place	57.5	52.5	52.0
P11	335-365 Panoramic Way	54.5	57.8	50.9

DEIR Table 4.5-16 includes a column showing an Existing Ambient Daytime Noise Level, however, I assert that the value shown is inappropriate to this situation because it is the value averaged over 15 hours, from 7:00 a.m. until 10:00 p.m. One major facet of this project that portends a significant noise impact on nearby residents is that games will be played after dark, enabled by the permanent lighting. The DEIR states, “While the project conservatively assumes up to 25 games after dark per year . . . it is much more likely there would be approximately 11 games starting at 5:00 p.m. or later . . .” [DEIR at p. 3-26] So, there will be at least 11 games in the quiet evening hours.

B5-46

Any game that begins at 5:00 p.m. or later will end after 7:00 p.m., and the long-term noise measurements made by the DEIR at four locations in the residential neighborhoods around the project site reveal that the existing ambient levels between 7:00 p.m. and 10:00 p.m. range from 47.1 to 54.1 dBA Leq. Using the arithmetic average value of the hourly Leq measured at each of the four long-term locations from 7:00 p.m. to 10:00 p.m. in the same manner as the DEIR does using the average over the 15 hours from 7:00 a.m. to 10:00 p.m. yields to following results which clearly indicate a significant impact at many receivers even using the ill-advised FICON standards:

No.	Address	Existing Ambient (7pm-10pm)	Typical Event	Increase	Maximum Event	Increase
LT1	67 Canyon Road	50.5	64.3	13.80	67.2	16.70
LT2	38 Mosswood Road	51.5	55.4	3.90	58.8	7.30
LT3	15 Canyon Way	50.4	49.5	- 0.90	52.3	1.90
LT4	280 Panoramic Way	52.2	52.8	0.60	56.1	3.90
P1	61 Canyon Road	50.5	60.7	10.20	63.6	13.10
P2	53 Canyon Road	50.5	58.0	7.50	60.7	10.20
P3	37 Mosswood Road	51.5	59.9	8.40	63.0	11.50
P4	29 Mosswood Road	51.5	57.2	5.70	60.3	8.80
P5	21 Mosswood Road	51.5	54.5	3.00	57.6	6.10
P6	44 Arden Road	50.4	56.6	6.20	59.7	9.30
P7	99 Arden Road	50.4	55.1	4.72	58.3	7.90
P8	48 Mosswood Road	51.5	57.1	5.60	60.2	8.70
P9	299 Panoramic Way	52.2	55.8	3.60	58.7	6.50
P10	8 Panoramic Place	51.5	52.0	0.50	55.0	3.50
P11	335-365 Panoramic	52.2	50.9	- 1.30	53.8	1.60

B5-47

Note: All values are dBA Leq. Values in **red** exceed the FICON allowable noise exposure increase as applied to this project in the DEIR, namely, 5 dBA since the existing noise exposure is less than 60 dBA.

Heretofore, only a very few games have been played after dark, enabled by temporary lighting. Therefore, the permanent introduction of 11 to 25 night games at the Cal Softball Field will cause a significant noise impact on the neighboring residences by virtue of the fact that the noise from those games will exceed both the applicable Berkeley Noise Ordinance Exterior Limit and the existing ambient noise level. Furthermore, the increases in the noise levels during the relevant evening hours will exceed the FICON standard as applied in the DEIR noise analysis, so

even by the DEIR's own standard, the noise from softball games played after dark will constitute a significant noise impact. These quantitative considerations are irrespective of the other facets of noise noted above that people tend to find annoying, namely, the "plink" of the bat, the roar of the crowd, and players yelling.

B5-47
Cont.

Concluding Comments

Noise is fundamentally defined as "unwanted" or "undesirable" sound. As such, noise, in and of itself, cannot be quantified. While it is well established that sound levels (decibels) correlate somewhat with people perceiving a sound as "noise", the situation is much more complex than captured by typical noise ordinances and noise policies. This is not to say that the latter are not useful as public policy, rather, it is to say that limiting noise assessment to only those aspects that can be quantified is to short-change the impact assessment on those impacted.

B5-48

In this matter, the proposal includes evening and nighttime games which have not occurred in the past with all of their attendant sounds such as fans cheering and stomping their feet; players yelling; umpires barking; and commentators announcing over the PA system the play-by-play, score, information about the players and other upcoming events, and concession stand prices. Even evening and nighttime practice will bring coaches and players yelling which is typically unwanted by residents within earshot of athletic facilities.

B5-49

From the perspective of neighboring residents who predate the development of Cal Softball Field and other sports facilities in 1995, the area has already been transformed from one of wooded quiet to living virtually inside a sports stadium. Google Earth Pro historical aerial photographs clearly show that in 1988 there were buildings along Centennial Drive that appear to have been separated from homes on Canyon Road by a buffer zone of trees and that by 1993 these buildings and woods had been removed, clearing the land for the later development of Cal Softball Field and Witter Rugby Field.

B5-50

As is often the case, following the initial transformation of the area, there has been a continual degradation of the residential neighborhood's soundscape environment by incremental "improvements" to the facilities. Where there were once no night games, there have now been a few night games. Now that there have been a few, there will now be many more enabled by the proposed new lighting and new larger facility. The current plan calls for up to 25 competitive night games. If 25 night games are permitted and the California Golden Bears continue to win Pac-12 and National Championships and otherwise have great success (something we can all support), it isn't difficult to foresee that the number of night games will increase – incrementally – in the future.

B5-51

Cautionary tales comes from the San Diego Unified School District. After installing permanent lights at Clairemont High School stadium, neighbors report that the usage increased from "five or six times a year to well over a hundred".³

B5-52

³ Video: "Residents Near Clairemont High School Discuss the Impact of Commercialization and Lighting of the Athletic Field" [<https://www.youtube.com/watch?v=tVutvv5VKas&app=desktop>]

In conclusion on this point, *noise* is defined as "unwanted" or "undesirable" sound. To the residents of Canyon Road and Panoramic Hill, if the nighttime use is expanded beyond the three nights over the last four years they have already tolerated, all future, audible nighttime sounds from the Cal Softball Field would be a reminder that what remains in the evening of the peaceful, quiet residential enclave that existed from the time the homes were built beginning in 1904.

B5-53

A major part of the fun of a sporting event is cheering and the amped-up feeling amongst the fans when their team does well. That should be allowed and encouraged as long as it's done in a location that does not impact others not in attendance. That is not the situation here. Rather, the development of Cal Softball Field and Witter Rugby Field has already transformed the daytime environment from quiet woods to a sporting venue. Fortunately for the residents, the neighborhood currently returns to its more pristine state in the evenings, but the proposed project would eradicate even that vestige of the venerable neighborhood on many evenings, and once that barrier is broken, the evening quiet will never be totally recovered. This is precisely why the California Environmental Quality Act requires a thorough analysis and full disclosure of the environmental impacts of projects. In this case, both qualitatively and quantitatively, it is clear that the proper conclusion of such an analysis must be that the project would cause a significant and unavoidable noise impact to the residents of Canyon Road.

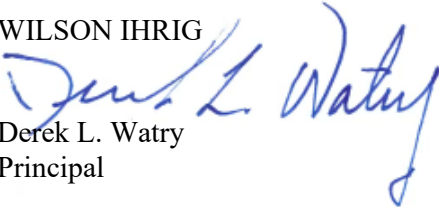
B5-54

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Please let me know if you have any questions about these comments on *Cal Softball Field Renovation Project, Draft Environmental Report* noise analysis.

Very truly yours,

WILSON IHRIG



Derek L. Watry
Principal



DEREK WATRY

Principal

Since joining Wilson Ihrig in 1992, Derek has gained experience in many areas of practice including rail/transit, environmental, construction, forensic, architectural, and industrial. For all of these, he has conducted extensive field measurements, determined criteria acceptability, and calculated noise and vibration levels. In the many of these areas, he has prepared CEQA and NEPA noise technical studies and EIR/EIS sections.

His extensive work on rail transit systems has taken him all around the United States, as well as to São Paulo, Hong Kong, and Tel Aviv. Derek has a thorough understanding of the technical, public relations, and political aspects of environmental noise and vibration compliance work. He has helped resolve complex community noise issues, and he has served as an expert witness in numerous legal matters.

Education

- M.S. Mechanical Engineering, University of California, Berkeley
- B.S. Mechanical Engineering, University of California, San Diego
- M.B.A. Saint Mary's College of California

Professional Associations

- Acoustical Society of America
- National Council of Acoustical Consultants

Sample Publications or Presentations

- Carman, Richard A. and Derek L. Watry, "Measured Vibration Reduction Performance of Ballast Mat Installation for Light Rail Vehicles on Embedded Track", APTA Rail Conference, June 1997.
- Watry, Derek L., "Source, Path, Receiver: Understanding Noise Control Fundamentals," Magazine article in Facility Safety Management, March 2006
- Watry, Derek L., "Plumbing Noise: Sound Pressure Levels and Human Perception in a Luxury Condominium," Paper presented at Institute of Noise Control Engineering Noise-Con 2007, Reno, Nevada, October 2007
- Watry, Derek L., "Measured Racetrack Noise Levels", InterNoise 2009, Ottawa, Canada
- Nelson, James T., and Derek L. Watry, "Considerations Regarding Force Density Levels," TRB 93rd Annual Meeting, Washington D.C., January 2014
- Watry, Derek L., Thom F. Bergen, and James T. Nelson, "Light Rail Vehicle Vibration Due to Wheel Flats", InterNoise 2015, San Francisco, California, August 2015.

PROJECT EXPERIENCE

Transportation

Bay Area Rapid Transit (BART), General Engineering Services On-Call Contract #6M8026, San Francisco, CA

Project Consultant for providing recommendations for Concord Yard wheel truing machine project, and on another task, made recommendations regarding allowable fan vibration for BART Line Vent Fan Rehabilitation Program, Project No.15BN-11.

Bay Area Rapid Transit (BART) K-Line Interlocking Replacement Project, Oakland, CA

Conducted a construction noise study in accordance with the FTA *Transit Noise and Vibration Impact Assessment Manual*. Effort included baseline noise measurements along the 3½ mile project corridor and detailed construction noise calculations from each work site to nearby receptors. Work sites include rail and switch replacement areas on aerial structure, staging areas, equipment and spoils laydown yards, and worker parking lots. The noise calculations accounted for the source levels from construction equipment and methods; acoustical shielding provided from existing topography, infrastructure, and buildings; standard BART noise abatement measures; distance from the work site; and duration of work. The assessment criteria were developed in accordance with the FTA guidance and methodologies.

Bay Area Rapid Transit (BART), San Francisco Intl Airport Extension, San Francisco, CA

Environmental compliance monitoring of noise and vibration during cut-and-cover construction. Work included extensive monitoring of ground vibration at buildings and structures near vibratory pile driving activity to ascertain compliance with construction specification limits.

Bay Area Rapid Transit (BART), San Francisco Powell Street Station, San Francisco, CA

Empirically characterized station reverberation time and determined number of acoustically absorbing panels that could be removed without degrading PA system performance.

Bay Area Rapid Transit (BART), Transbay Tube Seismic Upgrade Program, San Francisco, CA

Monitored vibration inside BART Tube during demonstration stone column installation. Work entailed devising special mounting brackets for use inside the BART tube and special electro-magnetic shielding of signal cables due to complex environment (third rail). Safety factors inside tube were paramount, so special cable harnesses, pre-assembled for quick installation during limited non-revenue window, were designed and built.

Caltrain Electrification Traction Power Facility PS5(2)

Provided noise and vibration analysis. Project tasks include documenting the existing noise and vibration ambient conditions, analysis of noise and vibration from project and construction-phase impacts.

Caltrain Centralized Equipment Maintenance and Operations Facility (CEMOF) Lenzen Rail Yard, San Jose, CA

Measured the existing ambient noise, characterized the ambient noise sources, predicted and assessed sound levels from future yard activity for several alternative wall designs, and presented the findings to an Oversight Committee. Also analyzed noise and vibration from rail traffic on the facility's Administration building and recommended control measures.

CRRC CTA 7000 Vehicle Noise Consulting, Chicago, IL

Providing noise consulting regarding testing methods and on-site verification.

Hong Kong Mass Transit Railway, Tsing Ma Bridge, Hong Kong

Assisted with extensive measurement program of noise from rail system spanning Hong Kong Harbor. Noise and vibration measurements were made on the bridge structure, and noise measures were made at numerous receiver locations around the harbor.

LA Metro, Gold Line Eastside Extension, Los Angeles, CA

Identified noise and vibration sensitive buildings and measured ambient noise and vibration for proposed alignment alternatives. Conducted analysis to determine groundborne noise and vibration levels due to transit trains. Empirically determined vehicle force density level. Formulated special trackwork recommendations to control groundborne noise and vibration.

LA Metro, Sepulveda Transit Corridor, Los Angeles, CA

Supported Sepulveda Transit Corridor Partners team on Phase 1 work developing heavy rail transit alternative along Sepulveda Pass by providing input on noise and vibration characteristics of potential vehicles.

Massachusetts Bay Transportation Authority (MBTA) Green Line Extension (GLX), Boston

Principal-in-charge of entire project. Lead consultant on vibration analyses. Work included planning and executing field measurements, conducting data analysis, working with track designers on suitable mitigation, and writing design recommendation reports.

Metropolitan Atlanta Rapid Transit Authority (MARTA) On-Call Contract for Acoustical, Noise, and Vibration Services, Atlanta, GA

Work includes, but is not limited to: projection of noise and vibration levels at nearby buildings, preparation of system wide noise and vibration criteria, and measurement and analysis of operational noise and vibration.

Portland TriMet, Hillsboro Extension, Hillsboro, OR

Measured vibration propagation characteristics of soils.

Sacramento Regional Transit District, South Sacramento Corridor Phase 2 Extension, CA

Post-construction compliance measurements in homes both next to ballast mat and not next to ballast mat. The data was collected (i) to substantiate that FTA vibration criteria were met in the residences and (ii) to enable estimation of the ballast mat performance. Test procedures were design to minimize the time and intrusion at each residence. The track design for sections of this alignment incorporated ballast mat to reduce vibration at nearby homes.

BYD SFMTA Bus Test, San Francisco, CA

Oversaw and helped conduct field measurements of new, electric bus to confirm compliance with vehicle specifications.

SFMTA Church Street/Duboce and St. Francis Circle Stations, San Francisco, CA

Project Manager in charge of noise and vibration baseline measurement for On-Call CS-146.

SFMTA F-Line Extension Vibration Study, San Francisco, CA

As Project Manager, assessed need for trackwork vibration isolation on F-Line extension for proposed hotel development at Mission and Stuart Streets. On-call contract CS-118.

SFMTA Siemens LRV4 Vibration Measurements, San Francisco, CA

Oversaw and helped conduct ride quality and lateral truck vibration measurements on new light rail vehicles to confirm compliance with vehicle specifications.

SFMTA Breda LRV2 Noise and Vibration Study, San Francisco, CA

Measured wayside vibration levels to determine effects of modified Breda LRV2 primary suspension on ground vibration. Extensive testing program controlled for vehicle speed and loading, track fixation, and underlying soil conditions. Empirically derived both Breda LRV2 and Boeing SLRV train force density levels and conducted modal analysis testing of vehicle truck dynamics. Conducted measurements to determine wood-frame building structural amplification. Wayside noise measurements and analysis to assess effectiveness of modified propulsion system software at reducing tonal noise. Simultaneously worked under contract to SFMTA, Breda Costruzioni Ferroviarie, and Booz Allen Hamilton.

SFMTA New Central Subway, San Francisco, CA

Project Manager who oversaw and participated in work to predict future groundborne noise and vibration levels from new subway system at sensitive land uses above the subway alignment. Tasks involved developing an innovative measurement technique to obtain subterranean vibration data using existing de-watering wells, and predicting groundborne noise and vibration levels in nearby residences.

SFMTA N-Line Rail Replacement Conceptual Engineering, San Francisco, CA

Measured and assessed vibration in areas with reported high vibration levels. Worked with Parsons-Brinckerhoff track designers to determine replacement track designs and maintenance practices to reduce future vibration levels. Made controlled measurements to assess the performance of a commercially available vibration isolation system, DS-ISO-RAIL.

SFMTA Taraval, San Francisco, CA

Gathered "baseline" data for construction site.

SFMTA Third Street Light Rail, San Francisco, CA

Calculated future vibration levels along new rail alignment, accounting for MUNI vehicle characteristics and speed, regional soil properties, and structural vibration amplification. Reviewed vibration criteria used for Environmental Impact Statement (EIS) and analysis supporting EIS findings.

SCVTA, Capitol Expressway Bus Rapid Transit (BRT) Update EIS, Santa Clara, CA

Reviewed previous BRT analysis and provide memo to support EIS.

SCVTA, Vasona LRT Corridor Track Design and Vibration Study, Santa Clara, CA

Planned and conducted vibration propagation measurements along alignment. Provided final design vibration predictions and mitigation recommendations. Worked with track design team to develop first-ever test track and revenue track with TDA installed below ballast for vibration attenuation. Planned and executed extensive field testing of these installations to quantify the reduction of ground-borne vibration. Provided inspection services during installation.

SCVTA, Vasona LRT Corridor Vibration Study, Santa Clara, CA

Final design vibration predictions and mitigation recommendations. Predictions accounted for VTA train, local soil properties, and specific building types along the corridor. Vibration mitigation requirements led to the design, development and testing of track resiliently supported by shredded, recycled tires.

SCVTA, Vasona Junction Extension SEIR, Santa Clara, CA

Provided a technical validation of the presumption that the noise and vibration study work conducted in 1999 for the entire Vasona LRT was still valid. Reviewed previous technical and environmental noise and vibration documents. Reviewed FEIR/FEIS significance criteria. Oversaw long-term noise measurements along the alignment.

São Paulo Metrô, Extensão da Linha Paulista, São Paulo, Brazil

Coordinated and conducted field measurements and analysis of soil vibration propagation characteristics for metro rail extension.

Siemens LRV Vehicle Testing, Phoenix, AZ

Developed a noise and vibration test plan per Valley Metro test specification. Conducted wayside and interior noise and vibration measurements for a new light rail vehicle as part of the commissioning process.

South 200th Link Extension Design-Build, Seattle, WA

Analyzed variations in the effectiveness of specified 1.6 miles of elevated guideway noise barriers due to proposed changes in the alignment

Sound Transit Lynnwood Link, Seattle, WA

Provided Principal-level assistance and advice to project staff and QA/QC reviews.

Sound Transit, Northgate Link LRT Preliminary Engineering Design, Seattle, WA

Served as Project Manager for low level, low frequency vibration from a planned subway route under the University of Washington (UW) campus. Conducted vibration propagation and ambient vibration measurements on campus.

Sound Transit, Northgate Link LRT Early Work for Final Design, Seattle, WA

Provided design engineering services for two potential tunnel profiles. Work involved assessment and control of groundborne vibration impacts of train operations on the University of Washington campus, and prediction, assessment, and control of groundborne noise and vibration impacts at sensitive land uses north of the campus.

Sound Transit, Northgate Link LRT Final Design, Seattle, WA

Drafted performance test procedure for Prototype Floating Slab. Helped prepare specifications for a permanent Vibration Monitoring System to be deployed at the University of Washington (UW). Also wrote a Construction Noise and Vibration Study, and Noise and Vibration Study for Capitol Hill and Montlake Districts. Oversaw and conducted extensive vibration propagation measurements on the UW campus and assisted with data analysis. Final design of light rail tunnels, station, and track work. Planned and conducted field measurements of ground vibration propagation. Estimated groundborne noise and vibration levels from tunnels and vibration from aerial structure. Reviewed trackwork components for adequate groundborne noise and vibration control.

Sound Transit Redmond Link Extension, Seattle, WA

Assisted with selection of measurement locations for groundborne noise and vibration impact analysis during environmental and preliminary engineering phases. Reviewed reports for completeness and clarity.

Sound Transit, Hilltop T Line (Tacoma Link) Extension Final Design, Tacoma, WA

Final assessment of streetcar noise and vibration. Planned and conducted field measurements of ground vibration propagation rates. Assisted with the planning of building vibration response measurements in residences along the alignment. Estimated noise and vibration levels future operations. Concluded that the system will not require any special components to reduce noise or vibration.

Sound Transit, Hilltop T Line (Tacoma Link) Extension, Ride Quality, Tacoma, WA

Participated in ride quality measurements conducted over entire extent of streetcar extension.

Sound Transit, University Link LRT Final Engineering, Seattle, WA

Predicting and mitigating low level, low frequency vibration from a planned subway route under the University of Washington campus during Preliminary Engineering, through Final Engineering phase for drafting a performance test procedure for Prototype Floating Slab.

Sound Transit University Link TBM Measurements, Seattle, WA

Vibration measurements of tunnel boring machine (TBM) and supply train.

Tel Aviv Metro, LRT Expansion, Tel Aviv, Israel

Planned and conducted on-site vibration propagation field testing and was subsequently responsible for groundborne noise and prediction calculations.

Transbay Joint Powers Authority Downtown Rail Extension (DTX), San Francisco, CA

Principal-in-charge of noise and vibration study for 1.3-mile, largely below-grade project to extend Caltrain commuter rail from its current terminus at Fourth and King streets to the new Transit Center. It will also deliver the California High-Speed Rail Authority's future high-speed rail service to the Transit Center.

Washington Metropolitan Area Transit Authority (WMATA) On-Call, District of Columbia

Principal-in-charge. Oversaw a testing program to measure the noise and vibration levels generated by trains operating during normal revenue service operations in response to complaints of vibration and noise by homeowners. Work involved collecting ground-borne noise and vibration data in residences, data analysis, and comparison to applicable design criteria. Directly involved in discussions with WMATA and writing final reports. Additional on-call tasks included a review of field ground-borne vibration and noise measurements taken along the Green Line against WMATA's and other applicable industry noise and vibration standards and new vehicle selection criteria.

Environmental Noise

Altamont Motorsports Park Noise Study, Tracy, CA

Monitored noise from motorsports park to determine compliance with applicable standards.

City of Fremont Environmental Services On-Call Contract, Fremont, CA

Providing oversight of and acoustical analysis for a variety of task orders. Work tasks primarily focus on noise insulation and vibration control design compliance for new residential projects and peer review other consultant's projects.

Conoco Phillips Community Study and Expert Witness, Rodeo, CA

Investigated low frequency noise from exhaust stacks and provided expert witness services

representing Conoco Phillips. Evaluated effectiveness of noise controls implemented by the refinery.

Exxon/Valero Refinery, Richmond, CA

Performed investigations of tonal noise and low frequency noise generated by the refinery and recommended piping noise controls to reduce noise transmission to the surrounding community.

Great America Waterpark Redevelopment, Santa Clara, CA

Noise study to establish baseline/existing conditions, compared to Master Plan EIR documents, and provided noise control recommendations as needed.

Hotel Montgomery, San Jose, CA

Peer review of technical analysis and EIR section.

Levi's Stadium Noise Monitoring, Santa Clara, CA

Oversee long-term sound level monitoring systems on light poles approximately 20-30 feet in the air to measure stadium noise at nearest residential receptors.

Loch Lomond Marina EIR, San Rafael, CA

Examined traffic noise impacts on existing residences for the City of San Rafael. Provided the project with acoustical analyses and reports to satisfy the requirements of Title 24.

Mare Island Dredge and Material Disposal, Vallejo, CA

EIR/EIS analysis of noise from planned dredged material off-loading operations for the City of Vallejo.

Mineta San Jose International Airport DEIR Review/Noise Monitoring, Santa Clara, CA

Provided expert review of noise section of DEIR for neighboring City of Santa Clara.

Montana Fish, Wildlife and Parks, Fish Hatchery Environmental Assessment, Miles City, MT

Measured existing conditions inside fish hatchery and its tanks to establish acceptability criteria, predicted train vibration over large distances, converted floor vibration levels to underwater pressure levels inside the tanks, and estimated airborne sound pressure levels from construction and rail operations.

MountainGate Country Club Sound System Review, Los Angeles, CA

Advised homeowners association adjoining country club on sound transmission of proposed outdoor sound system.

Northern Pacific Depot Vibration Assessment, Sandpoint, ID

Peer review to assess the propensity for damage to depot.

Patterson Ranch EIR, Fremont, CA

Conducted noise and vibration portion of the EIR.

Port of Grays Harbor Terminal 4 Expansion, Aberdeen, WA

Comprehensive noise and vibration study for port expansion project that included assessment of rail noise and vibration and noise from cargo movement, ship loading, and project construction. Project included redevelopment of unused casting basin into expanded cargo yard.

Port of Vancouver Sandhill Crane Noise Study, Vancouver, WA

Long-term noise measurements and noise impact assessment to support the development of Port of Vancouver parcels as a habitat for sandhill cranes visiting the property. Recommendations for noise mitigation design were provided to establish compatibility of the habitat adjacent to potential future noise-producing Port activities.

Silva Ranch Annexation EIR, King City, CA

Conducted the noise portion of the EIR and assessed the suitability of the project areas for the intended development. Work included a reconnaissance of existing noise sources and receptors in and around the project areas, and long-term noise measurements at key locations.

SFDPW Geary BRT, San Francisco, CA

Management of noise and vibration monitoring for over 18 months.

SFDPW Van Ness BRT, San Francisco, CA

Management of noise and vibration monitoring for over 25 months.

St. John's Wood Square, London, UK

Peer reviewed London consultants' building isolation design and also conducted an independent assessment of the isolation system requirements. Conducted vibration measurements at foundation depths at the project site as a basis for its independent assessment.

San Francisco PUC, Islais Creek Clean Water Program, San Francisco, CA

Community noise and vibration monitoring during construction, including several stages of pile driving. Coordination of noise and ground vibration measurements during pile driving and other construction activity to determine compliance with the noise ordinance. Coordination with Department of Public Works to provide a vibration seminar for inspectors and interaction with Construction Management team and nearby businesses to resolve noise and vibration issues.

San Francisco PUC, CMB Lincoln Way Pipeline (Sunset to 6th), San Francisco, CA

Conducted vibration monitoring of pipe laying along Lincoln Way.

Shell Oil Refinery, Martinez, CA

Identified source of community noise complaints from tonal noise due to refinery equipment and operations. Developed noise control recommendations. Conducted round-the-clock noise measurements at nearby residence and near to the property line of the refinery and correlated results. Conducted an exhaustive noise survey of the noisier pieces of equipment throughout the refinery to identify and characterize the dominant noise sources that were located anywhere from a quarter to three-quarters of a mile away. Provided a list of actions to mitigate noise from the noisiest pieces of refinery equipment. Assisted the refinery in the selection of long-term noise monitoring equipment to be situated on the refinery grounds so that a record of the current noise environment will be documented, and future noise complaints can be addressed more efficiently.

Tyco Electronics Corporation, Annual Noise Compliance Study, Menlo Park, CA

Conducted annual noise compliance monitoring. Provided letter critiquing the regulatory requirements and recommending improvements.

University of California, San Francisco Mission Bay Campus Vibration Study, CA

Conducted measurements and analysis of ground vibration across site due to heavy traffic on Third Street. Analysis included assessment of pavement surface condition and propensity of local soil structure.

Valero Crude-by-Rail, Benecia, CA

Performed noise study of the project which will provide the infrastructure necessary to bring 50-tanker-car consists into the refinery and pump crude oil from them via an unloading rack into an existing tank. Assessed primary new noise sources introduced by the project which included movement of rail cars and operation of pumps. Estimated noise levels from the new operations in the context of existing noise levels measured near local residences.

Walmart EIR Noise Analysis Review, Atascadero, CA

Review and Critique of EIR Noise Analysis for the Del Rio Road Commercial Area Specific Plan.

Construction

12th Street Reconstruction, Oakland, CA

Responsible for construction noise control plan from pile driving after City received complaints from nearby neighbors. Attendance required at community meetings.

9-1-1 Emergency Communications Center, San Francisco, CA

Technical assistance on issues relating to the demolition and construction work including vibration monitoring, developing specification and reviewing/recommending appropriate methods and equipment for demolition of Old Emergency Center for the SFDPW.

215 Fremont Street, Demolition Noise & Vibration, San Francisco, CA

Monitoring and control of noise and vibration on Fremont Street, immediately adjacent to the transbay aerial guideway during demolition.

Antlers Bridge Replacement, Shasta Lake, CA

Hydroacoustic monitoring for the construction of a new bridge to determine compliance with permit requirements for fish impacts.

Central Contra Costa Sanitary District, Grayson Creek Sewer, Pleasant Hill, CA

Evaluation of vibration levels due to construction of new sewer line in hard soil. Oversaw the installation of numerous vibration monitors as construction progressed to different areas of the neighborhood.

Genesis Marina Construction Noise, Brisbane, CA

Conducted pre-construction ambient noise survey. Developed Construction Mitigation Plan. Directed the installation and data collection of two noise monitoring stations for the duration of construction.

Golden Gate Bridge South Tower Retrofit Phase II, San Francisco, CA

Construction noise and vibration monitoring at Fort Point, an historic, unreinforced masonry structure.

Golden Gate Park Concourse Underground Garage, San Francisco, CA

Noise and vibration testing during underground garage construction to monitor for residences and an old sandstone statue during pile driving for the City of San Francisco.

Kaiser Redwood City Replacement Hospital – Construction Vibration, Redwood City, CA

Noise and vibration control consulting for design of new hospital facilities, including the central utilities plant and parking garage.

Laguna Honda Hospital, Clarendon Hall Demolition, San Francisco, CA

Project manager for performed vibration monitoring during demolition of an older wing of the hospital.

Lombard Reservoir Demolition, San Francisco, CA

Vibration monitoring during demolition. Reservoir surrounded by high-rise condominiums.

Moscone Expansion, San Francisco, CA

Evaluation of vibration and noise levels due to construction of new buildings. Oversaw installation of noise and vibration monitors on site to monitor construction levels.

Napa Creek Vibration Monitoring Review, Napa, CA

Initially brought into peer review construction vibration services provided by another firm, but eventually developed a new vibration monitoring plan and oversaw monitoring during for construction activities near historic buildings in Downtown Napa.

SFDPW, Environmental Services On-Call, San Francisco, CA

Noise and vibration monitoring for numerous projects including Northshore Main Improvement project and SOMA West Skate Park.

SFDPW Fourth Street Bridge Rehabilitation, San Francisco, CA

Construction noise, vibration, and underwater monitoring and support. Work included underwater noise measurements during pile driving and subsequent lab analysis, and ground-to-water transfer mobility measurements and subsequent analysis to predict underwater acoustic pressure levels during concrete abutment demolition.

SFMTA Geary BRT East, San Francisco, CA

Management of noise and vibration monitoring for 25 months.

525 Golden Gate Avenue Demolition, San Francisco, CA

Noise and vibration monitoring and consultation during demolition of a multi-story office building next to Federal, State, and Municipal Court buildings for the SFDPW.

San Francisco PUC, Richmond Transport Tunnel Clean Water Program, San Francisco, CA

Environmental compliance monitoring of vibration during soft tunnel mining and boring, cut-and-cover trenching for sewer lines, hard rock tunnel blasting and site remediation. Work involved long-term monitoring of general construction activity, special investigations of groundborne vibration from pumps and bus generated ground vibration, and interaction with the public (homeowners). Construction methods monitored included tunneling, pile driving, heavy equipment operation, and rock blasting.

Architecture

Dubai International Airport

Work involved recommendations for sound insulation between spaces, sound absorption treatment/materials within spaces. Reviewed design configurations, drawings, specifications, and construction documents and provided details and provisions for achieving the appropriate acoustical environment. Addressed control of noise from aircraft into interior spaces and presented recommendations on exterior shell elements for achieving appropriate noise control and satisfactory sound levels. Reviewed and made recommendations on PA system design and loudspeaker placement.

Kaiser Medical Transcriptionists Area, Santa Clara, CA

Consulted with Kaiser directly to improve the acoustical environment in open office area used for transcription. Recommended several measures to improve signal-to-noise ratio for medical transcriptionists.

Market Square (Housewives Market) Condominiums, Oakland, CA

Title 24 study and full acoustical design recommendations, including construction administration, for mid to high-end, mixed-use residential project on the historic Housewives Market site in Old Oakland.

San Francisco 49ers Media Room, Santa Clara, CA

Assist with the design of media room to be used for interviews and other media shoots.

Veterans Affairs Palo Alto Health Care System, Fisher House, Palo Alto, CA

Acoustical consultant on retrofit project to increase speech privacy between rooms at hotel-like facility on Campus.

640 W. California Avenue, Sunnyvale, CA

Acoustical consultant to reduce HVAC noise in tenant office space. Work included diagnostic noise measurements and noise control design.

EXHIBIT B



environmental service

by Papineau

January 29, 2024

Mr. Michael R. Lozeau
Lozeau Drury LLP
1939 Harrison Street, Suite 150
Oakland, California 94612

**Subject: Comments on Softball Field Renovation Project
Draft Environmental Impact Report, SCH#2022110035**

Dear Mr. Lozeau:

Please find included herewith comments on the Draft Environmental Impact Report dated December 2023. Comments submitted by this letter and attachment are made for your submittal on January 29, 2024.

If you have any questions about the comments, please call me at (510) 881-8574.

Sincerely,

Marc Papineau
Environmental Scientist

Enclosures:

Comments on the Draft EIR (9 pp.)
Attachment A, ILP Guidance Note 01/21 for the Reduction of Obtrusive Light
Attachment B, NCAA Best Lighting Practices
Attachment C, Resume of Marc Papineau

B5-55

Comments on the Draft EIR

Overview

UC Berkeley's existing softball facility is located in the Berkeley Hills on Centennial Drive, between Stadium Rim Way and Grizzly Peak Boulevard, east of Memorial Stadium, at an approximate elevation of 490 feet above mean sea level (see Figure 1). UC Berkeley's proposed Softball Field Renovation Project would include 66 LED light fixtures ("luminaires" mounted at 70-90 feet above ground level on six (6) 70-foot tall light poles. The mounting poles would include two for home plate, two for first/third base lines, and two for the outfield. Additionally there would be a 35 foot x 9 foot scoreboard, parking area, bleachers, and TV/press box. The existing bleacher seating would be expanded and outfield walls expanded for a larger field and larger overall footprint.

B5-56

The area east, northeast, south and southeast of the softball field contains open space preserves and limited developed land uses. With the exceptions of UC Berkeley sports lighting (i.e., Memorial stadium, Witter Rugby Field, and Cal Softball Facility), the adjoining neighborhood is located in an area having minimal artificial light at the eastern urban fringe (see Figure 2). Several houses are located southwest, south, or southeast of the softball field, in the elevation zone 400-580 feet above msl. In the immediate neighborhood of the softball field, houses are located within 350-1,130 feet (110-350 meters) of the centerfield wall (see Figure 3). Additional houses are located at or above the elevation of the proposed luminaries, many but not all being shielded by intervening terrain.

For clarity of exposition, to inform the public fully, the Cal Softball Field Renovation Project Draft EIR should explain that NCAA has best practices for both televised and untelevised sports play. The best practices are not standards *per se*. One set of best practices is intended for playability and player safety. The additional set of best practices is intended additionally to accommodate the quality of televised sport broadcasting. The Draft EIR cites (pp. 3-16, 3-23, 3-25, 4.2-2) only NCAA lighting best practices for televised night games. For untelevised play, recommended light levels are lower, being 70 footcandles infield / 50 footcandles outfield. For regional or national TV broadcast, the NCAA's best practices ratchet up—to 100 footcandles infield / 70 footcandles outfield.¹ This increase in lighting has nothing to do with playability, it's about broadcast cameras. Untelevised games and nighttime practices can be accommodated with lower light levels.

B5-57

The Cal Softball Field Renovation Project Draft EIR acknowledges (p. 4.2-7) light pollution, which includes various forms of unwanted light in the night sky, such as glare, light trespass, sky glow from over-lighting. Excerpt:

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. (p. 4.2-7)

B5-58

While acknowledging this, and while evaluating the effect of specified luminaires on spill light (or "light trespass") and glare, the Draft EIR fails to evaluate the incremental contribution and cumulative effect of the proposed project on sky glow.

For clarity of exposition, to inform the public fully of the potential individual and cumulative effects, the Draft EIR should evaluate and add perspective regarding sky glow. At a minimum, the cumulative sky glow impact of Cal Softball Field Renovation Project with Memorial Stadium and Witter Rugby Field should be evaluated.

B5-59

¹ One footcandle is about the same as 10.76 lux.

Independent calculation of Upward Flux Ratio, a metric used for evaluating incremental effect upon sky glow, indicates that UFR could be expected in the range of 2.3 and up to 3. In comparison, the threshold of significant effect in Environmental Light Zone E2 is 2. This calculation assumes addition of only the 66 luminaires proposed for the Cal Softball Field Renovation Project, without the 35 foot x 9 foot scoreboard and without off-field pedestrian or parking lot lighting. This result is unsurprising as all sports facilities with lighting generate upward light from reflection—even those having no upward-directed luminaires. The amount of reflected light depends on the amount of source light (lumens) and the reflective quality of the surfaces.

B5-60

Sky glow over a stadium or lighted sports field appears as a milky white “fog” (see Figure 4). It can be lessened or minimized but practically is unavoidable. The degree of visible sky glow depends, in part, upon viewing location and contrast in the field of view of the observer. Sky glow adversely affects not only star gazing but also nighttime viewing. Silhouettes of ridgelines or tree lines, which normally appear black, become grayed from sky glow over a stadium. Unlike the effect of glare, the effect of sky glow does not require a direct line-of-sight to a luminaire. Unlike spill light cast directly from luminaires and crossing the boundary of a lighted sports field, most sky glow in modern sports lighting installations is an indirect result of reflected light.

B5-61

To minimize the expected impact of sky glow mitigation measures, performance and design criteria, or restrictions on proposed lighting are warranted. The absence of these in the Draft EIR is at odds with acknowledgment given in Cal Softball Field Renovation Project Draft EIR of the cumulative lighting impacts from other athletic facilities in the project area such as the Memorial Stadium and Witter Rugby Field. In general, this defies the fact that nighttime use of lighted sport fields generally is acknowledged by both CEQA practitioners and lighting practitioners as potentially a significant source of spill light, glare, and also sky glow.

B5-62

Analysis presented in the Draft EIR and Appendix D appears rigorous. However, looking carefully, we find scant details—not even the name of the photometric mode is mentioned more than parenthetically. The model, AGi32, is mentioned by name once, parenthetically, in Appendix D. How was the model applied (*e.g.*, 3-D or flat, with or without terrain, with or without structures)? Based upon the photometric sheets presented at the end of Appendix D it appears that prediction plans were used at varying height above the plane of the playing field. Upward light output or reflected light were not evaluated.

B5-63

The AGi32 model is highly capable; however, it appears to have been applied for a preliminary evaluation in a relatively simplistic flat-plane mode, which requires far less data input. The AGi32 model can simulate lighting effects across multiple calculation planes in addition to the playing field plane. AGi32 receiver calculation points can be aimed in any direction. Receiver elevations can be entered in cases of complex versus flat-plane topography. While the AGi32 model is highly capable, neither the Draft EIR nor Appendix D explains in lay or technical terms how the model actually was applied.

B5-64

The model output, numbers such as lux or footcandles for spill light and candela for glare, do not address sky glow and do not communicate degree of impact, individual or cumulative, on nighttime views. Scenic vistas and nighttime views are available from the trails and hillside vantages. The Draft EIR (p. 4.2-2) acknowledges these trails and outstanding scenic vistas:

The local elevation in the Hill Campus East provides for panoramic westward views towards the San Francisco Bay and City of San Francisco. 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.

B5-65

Trails mentioned in the Draft EIR (p. 4.2-2, 4.2-7 & -8, 4.2-30,) include Upper Jordan Trail and an unnamed southwest-northeast trail running into the Hill Campus East from the eastern end of Canyon Road. In addition to trails mentioned in the Draft EIR (p. 4.2-13), there are Panoramic Ridge East-West Trail, Gwinn Canyon Trail, and Bay Ridge Trail (also known as the Skyline National Trail). These offer available scenic vistas from a variety of public viewing locations. The Panoramic Ridge East-West Trail in the Claremont Canyon Regional Preserve and Clark Kerr Fire Trail also in the Claremont Canyon Regional Preserve offer some of the best scenic views in the San Francisco Bay region.

B5-66

Of spill light, glare, and sky glow, the Cal Softball Field Renovation Project Draft EIR addresses two of the three—spill light and glare. However, sky glow is more relevant to nighttime viewing. The Draft EIR appropriately recognizes (pp. 4.2-16, 4.2-33) the low ambient light setting on the edge of urban Berkeley by characterizing the light setting as E2. For the E2 zone, and for other defined ambient light zones, various lighting organizations such as CIE and ILP have recommended guidance on maximum acceptable and practically achievable levels of spill light, glare, and sky glow. The three metrics are vertical illuminance (in footcandles or lux) for spill light, luminous intensity (in candela) for glare, and upward waste light ratio or upward flux ratio (unitless ratios) for sky glow. Sky glow is acknowledged in the Draft EIR (p. 4.2-7), but it is not evaluated.

B5-67

Unlike spill light and glare, effects of which generally are localized and specific to neighbors of a lighting installation, sky glow is an individual and cumulative effect and impairs local viewing of scenery and the night sky by a broader community. Therefore, it is especially important not only to acknowledge the sky glow effect, both individual and cumulative with Memorial Stadium and Witter Rugby Field, but also to evaluate the degree of impact on nighttime views. AGI32 model results presented in the Draft EIR and Appendix D fail to communicate any of these impacts.

Corrections for shielding by vegetation are included in the analysis (see Table 4.2-6, p. 4.2-35). These corrections are made *ad hoc*, outside the photometric modeling, to account for obstructions between light source and receiver. These obstructions are neither buildings nor terrain but “dense foliage” between receivers and the project site. We have no assurance from the Draft EIR text or Appendix D that the same corrections applied for receivers A, B, C, and D should be applied to other receivers which were not evaluated and which could receive spill light from the Cal Softball Field. These receivers are illustrated here in Figures 1 and 3 (yellow-shaded area).

B5-68

Specific Comments

1. An available metric for quantifying a project’s contribution to sky glow is Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation’s luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field. A UFR of 2, or lower, results for facilities having no upward directed light and minimal reflected light except that reflected up from the playing field. Such facilities minimize their cumulative contributions to sky glow.

B5-69

2. (pp. 3-16, 3-23, 3-25, 4.2-2) The Cal Softball Field Renovation Project Draft EIR cites NCAA lighting best practice for televised night games. For untelevised play, the NCAA’s recommended light levels are lower, being 70 footcandles infield / 50 footcandles outfield. However, for regional or national TV broadcast, the levels ratchet up—to 100 footcandles infield / 70 footcandles outfield. This increase in lighting has the sole purpose broadcast quality and has nothing to do with safety or playability. Untelevised games and nighttime practices could be accommodated with lower light levels. *Note: One footcandle is about the same as 10.76 lux.*

B5-70

NCAA does not call these “standards.” NCAA titles them as Recommended Best Lighting Practices and advises similarly for non-televised and televised intercollegiate play as follows:

TELEVISED: *Following these recommended best practices will help ensure quality of light needed for the safety of participants, enjoyment of spectators, and quality regional and national television broadcasts, as required. (see Attachment B)*

NON-TELEVISED: *Following these recommended best practices will help ensure quality of light needed for the safety of participants and the enjoyment of spectators, as required. (see Attachment B)*

3. (p. 4.2-1) The field itself including the dirt infield, turf outfield, warning track, home plate and foul areas is approximately 40,000 square feet (0.9 acre). The facility with bleachers, striped parking, landscape areas is larger.

4. (p. 4.2-7) The Cal Softball Field Renovation Project Draft EIR acknowledges light pollution, which includes various forms of unwanted light in the night sky, such as glare, light trespass, sky glow from over-lighting. The Draft EIR further acknowledges that views of the night sky are an important part of the natural environment and that excessive light and glare can be visually disruptive to humans and nocturnal animal species.

5. (pp. 1-7 and 6-3) The Cal Softball Field Renovation Project Draft EIR acknowledges as areas of concern and controversy both lighting impacts on nearby residents during softball games and practices and cumulative lighting impacts from other athletic facilities in the neighborhood of the project. Nighttime use of lighted sport fields generally is acknowledged by lighting practitioners as potentially a significant source of spill light, glare, and sky glow. Even so, potential impacts including spill light and glare are labeled in this Draft EIR as less-than-significant effects. But sky glow is not even evaluated.

6. (pp. 1-7, 4.2-32, -33, -34 and -35, and 6-3) Spill light and glare impacts appear to be evaluated in the Draft EIR and reported in Tables 4.2-4 and 4.2-5 for an optimized system having specific 90-foot tall pole heights, specific number and kind of luminaires, and specific luminaire aiming. The as-built system could differ, resulting in adverse spill light and glare effects. Therefore, performance and design criteria should be required or the installation certified (e.g., Dark Sky Certification).

7. (Appendix D) The technical appendix is relied upon in the Draft EIR for conclusions about the degree of lighting effects. Neither the Draft EIR nor Appendix D convey in lay terms how the photometric model was applied (e.g., 3-D or flat, with or without terrain, with or without structures). The AGi32 model is highly capable but it can also be applied in simplistic modes with less data input for preliminary evaluations. The AGi32 model can simulate lighting effects across multiple calculation planes in addition to the playing field plane. AGi32 receiver calculation points can be aimed in any direction. Receiver elevations can be entered in cases of complex versus flat-plane topography. While the AGi32 model is highly capable, the Draft EIR and Appendix D do not explain how the model used actually was applied.

8. (p. 4.2-33) Shielding by vegetation is included in the analysis. These corrections are made *ad hoc*, outside the photometric modeling, to account for obstructions between light source and receiver. Unlike terrain or buildings, trees, shrubs, and their leaf canopies may not be so unchanging depending on age, condition, species, and events such as fire. It would be conservative to evaluate the spill light impacts without this *ad hoc* treatment of the model results and implicit assumption that the foliage is unchanging and permanent.

9. (Table 4.2-4, p. 4.2-33, and Table 4.2-6, p. 4.2-35) Text in the Draft EIR and footnotes in Tables 4.2-4 and 4.2-6 do not identify receivers A, B, C, or D as points of maximum impact. Therefore, other nearby receivers along Canyon Road and along the associated trail could have higher cumulative spill light levels, which may exceed 0.46 lux, which is the threshold of significant effect.

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B5-77

Table 1

Alternative Addition of Values below Light Meter Detection Limits

Receptor Site	Softball + Rugby + Ambient	Rugby + Ambient	Ambient Only	Softball Only [derived]	Rugby Only [derived]
A	0.56	0.23	0.20	0.33	0.03
B	<0.23	< 0.12	< 0.06	0.11	< 0.06
C	< 0.18	< 0.12	< 0.06	< 0.06	< 0.06
D	0.56	0.10	0.06	0.46	0.04

Spill light (lux values) in Tables 4.2-4 and 4.2-6 should be explained, especially those having a “less than” (“<”) symbol. The less than (<) and plus (+) symbols are inappropriate for lay presentation as their meanings are unclear. Addition of <0.06 plus <0.06 lux plus 0.06 lux could be up to <0.18 lux. The caption “Ambient+” needs to be explained as it makes little sense on its own. Interpreted as upper bounds, the reported lux levels outside the project site may approach or exceed the threshold of significant effect at A and other receivers.

10. (Table 4.2-5, p. 4.2-34) Glare (candela values) in Table 4.2-4 should be explained and rounded to the nearest 100 candela. Since the values represent brightness of individual luminaries or luminaire groups—and are not additive sums of brightness—the caption “Ambient+” needs to be deleted or explained in lay terms as it makes little sense on its own.

11. (Table 4.2-6, p. 4.2-35) Text in the Draft EIR and footnotes in Table 4.2-6 do not identify receivers A, B, C, or D as points of maximum impact. Therefore, other nearby receivers such as those along Canyon Road and along the associated trail could have higher cumulative candela levels of 10,000 to 13,000 cd, which exceed the threshold of significant effect (7500 cd).

12. (pp. 4.2-16, 4.2-33) The Draft EIR appropriately recognizes the low ambient light setting on the edge of urban Berkeley by characterizing the light setting as E2 (see Figure 2). For the E2 zone, and for other defined ambient light zones, various lighting organizations such as CIE and ILP have recommended guidance on maximum acceptable and practically achievable levels of spill light, glare, and sky glow.

CIE 150: 2017 presents guidelines for assessing the environmental impacts of outdoor lighting and provides recommended limits for relevant lighting parameters to contain the obtrusive effects of outdoor lighting. Obtrusive effects of outdoor lighting are best controlled initially by appropriate design; therefore, the CIE guidance focuses on new installations.

Applicable guidance has been published, for example, by the Commission Internationale d’Éclairage (CIE) and Institution for Lighting Professionals (ILP), which provide criteria for evaluating impacts of outdoor sports lighting. The CIE and ILP guidance references provide thresholds of significant effects for all three (*i.e.*, spill light, glare, and sky glow). CIE 150: 2017 considers potentially adverse effects of outdoor lighting on nearby residents; users of adjacent roads (*e.g.*, pedestrians, cyclists); sightseers; beacons and similar systems (*e.g.*, air, marine, rail); and, astronomical observations. Effects of lighting on the natural environment can be difficult to quantify, and CIE 150:2017 does not address these effects. When there are fields, mountains, forests, rivers, lakes and/or coastline, located close to a lighting installation, there is the possibility, depending upon the season, of the lighting having an adverse effect on insects, plants and animals within the area of the proposed installation (CIE 150: 2017, p. 1).

CIE 150:2017 is intended for use by a) planning bodies, particularly local government authorities, to assist in assessing the potential obtrusiveness of outdoor lighting installations and b) designers of outdoor lighting to reduce obtrusive effects to an acceptable degree (CIE 150: 2017, p.1). The same thresholds of

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significant environmental effect are adopted in the guidance published by ILP. See Attachment A for ILP’s Guidance Note 01/21: The Reduction of Obtrusive Light.

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Cont.

13. (pp. 4.2-33 and 4.2-34) Of spill light, glare, and sky glow, the Cal Softball Field Renovation Project Draft EIR addresses two of the three—spill light and glare. The three metrics are vertical illuminance (in footcandles or lux) for spill light, luminous intensity (in candela) for glare, and upward waste light ratio or upward flux ratio (unitless ratios) for sky glow. Sky glow is not evaluated.

B5-81

14. (p. 4.2-7) Sky glow is acknowledged in the Draft EIR, but it is not evaluated. An available metric for quantifying a project’s contribution to sky glow is Upward Waste Light Ratio (UWLR) or Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation’s luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field. Independent analysis of the proposed project indicates that the UFR could be in the range 2–3. This is without consideration of the parking lot lighting, path lighting, or the 35 foot x 9 foot scoreboard. Analysis confirms the rather obvious fact that light will be reflected up off the field and bleachers.

B5-82

15. (p. 4.2-7) Sky glow will affect views of the night sky and scenic views from the Berkeley Hills. It’s like a graying of the sky which impedes viewing clarity and viewing of fainter stars, constellations, or planets.

B5-83

Additional Comments

Mitigation Measures and Continuing Best Practices (CBPs)

UC Berkeley would implement continuing best practices (CBPs) for aesthetics (AES) listed in the Cal Softball Renovation Project Draft EIR (p. 4.2-31):

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

B5-84

However, neither is intended or would be effective for minimizing sky glow from sports lighting. These two CBPs are almost certainly intended for architectural lighting and not sports lighting. “Historic character,” “exterior surface,” “architectural screens,” “shading devices,” and “preferable to reflective glass” are terms that fit the context of building architecture but have not so much to do with specialized sports field or court lighting. These CBPs are intended to minimize spill light and glare from architectural and parking lot or path lighting.

Receiver Locations

The Draft EIR considers relatively few receiver locations for evaluating lighting effects. Receiver locations are described generally in the Draft EIR (p. 4.2-32, -33, -34 & -35), which identifies and evaluates the proposed project’s lighting effects on four (4) receivers A, B, C, and D. From the Draft EIR context, we believe that the analysis basically was limited to receivers having a direct line-of-sight to the proposed luminaires in the Cal Softball Field.

B5-85

Many more receivers in the neighborhood and on the public streets and trails will experience the sky glow of reflected light over the softball field, Witter Rugby Field, and Memorial Stadium. The sky glow effect is not limited to viewers having a direct line-of-sight to the luminaires.

B5-86

Many more receivers than A, B, C, and D also may have lines-of-sight to the proposed luminaires over the existing softball field. Table 2 (next page) lists proximate candidates. Some have lines-of-sight that may be obscured by intervening trees and shrubs but not by terrain. Viewing elevations of these receiver vary relative to the 90-foot tall luminaire mounting heights poles. Figures 1 and 3 illustrate the zone (yellow-shaded) having an approximate elevation range of 400-580 feet msl, which is at or below proposed luminaire mounting elevation of approximately 580 feet msl.

Table 2
Sensitive Residential Properties in the Neighborhood

ID	Alameda County Parcel Number	Street Address	Distance	
			Feet	Meters
1	55-1862-59	67 Canyon Road	350	110
2 [A]	55-1862-60	61 Canyon Road	440	140
3	55-1862-1-5	53 Canyon Road	530	160
4	55-1862-58	45 Canyon Road	590	180
5	55-1862-14-1	39 Canyon Road	660	200
6	55-1862-13-4	37 Canyon Road	730	220
7	55-1862-13-2	33 Canyon Road	800	240
8	55-1862-12	15 Canyon Road	900	270
9	55-1862-2	37 Mosswood Road	530	160
10	55-1862-3-1	29 Mosswood Road	570	180
11	55-1862-5	21 Mosswood Road	670	200
12	55-1862-11	9 Canyon Road	925	280
13	55-1862-10	1 Canyon Road	1,020	310
14	55-1862-9	1 Orchard Lane	1,130	350
15	55-1862-8-1	3 Orchard Lane	1,070	330
16	55-1862-7	11 Mosswood Road	970	300
17	55-1862-6	13 Mosswood Road	880	270
18	55-1862-23-3	299 Panoramic Way	710	220
19	55-1862-23-3	48 Mosswood Road	660	200
20	55-1862-19-1	44 Mosswood Road	640	190
21 [C]	55-1862-17	38 Mosswood Road	630	190
NOTE:				
1. Distance is the approximate distance to the center field wall.				
2. [] denotes a receiver identified in the Draft EIR.				

B5-87

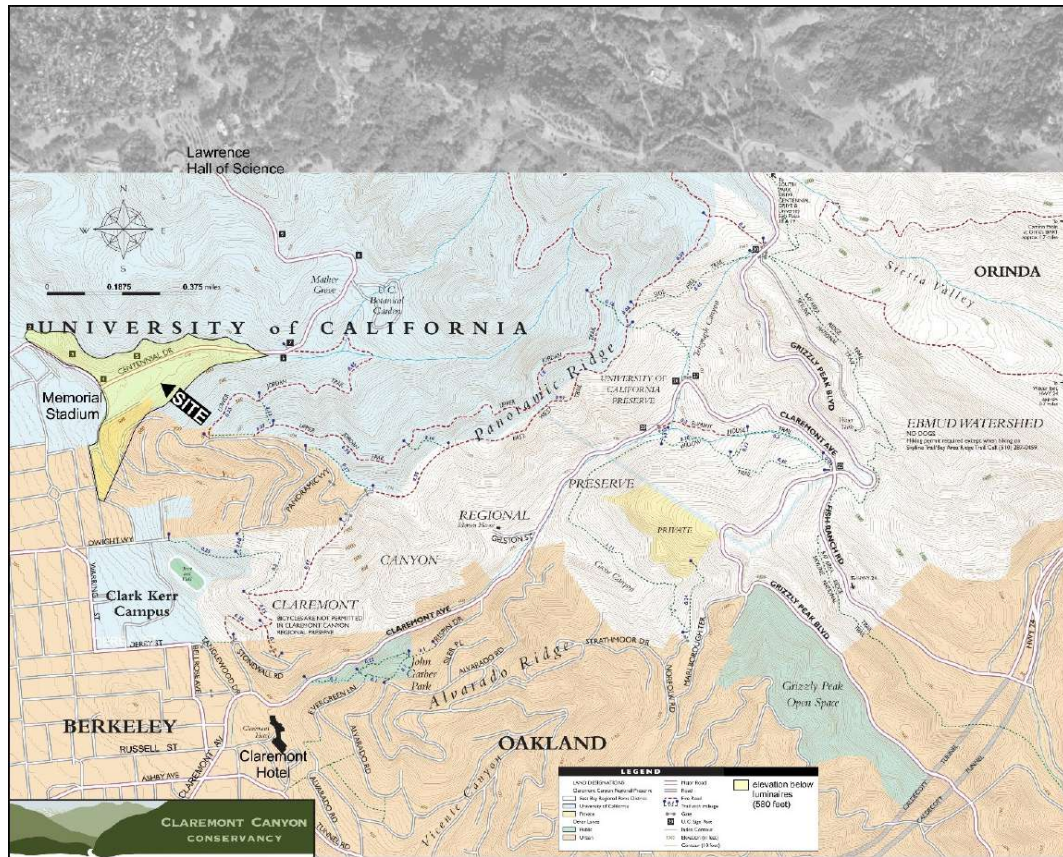


Figure 1. Trails,
Open Space & Preserves

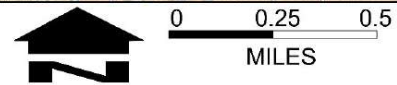




Figure 2. Existing Ambient
Nighttime Light Conditions



0 0.25 0.5
MILES

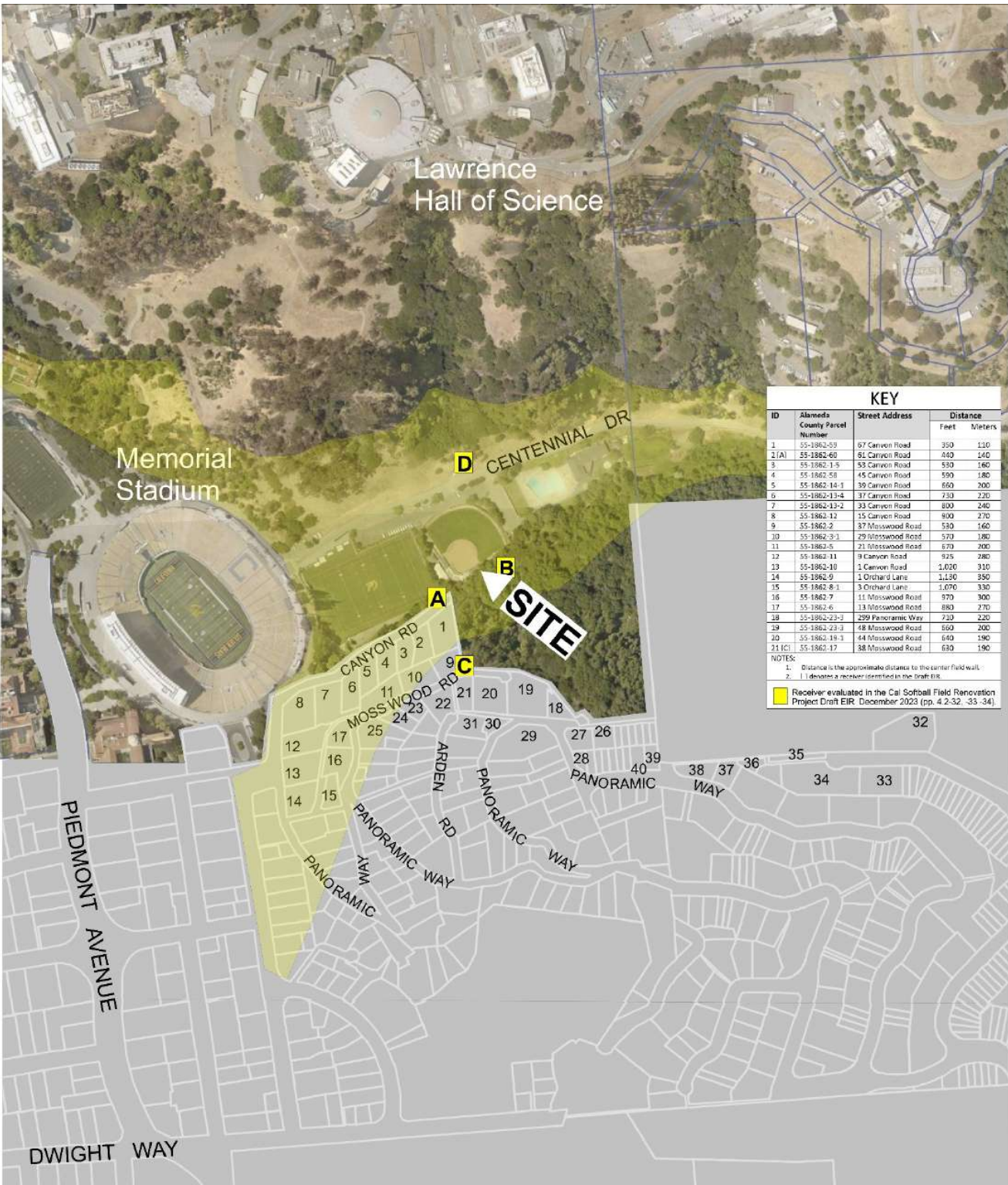
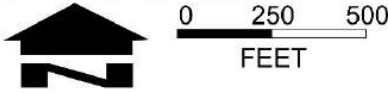


Figure 3. Neighborhood and
Parcels near the Project Site





4A Nighttime View of Memorial Stadium
from a Vantage near Bancroft Way
& Prospect Street (January 2024)



4B Sky Glow in the Nighttime View
from a Vantage near Bancroft Way
& Prospect Street (January 2024)

Figure 4

ATTACHMENT A
ILP Guidance Note 01/21 for the Reduction of Obtrusive Light

GUIDANCE NOTE 01/21

THE REDUCTION OF OBTRUSIVE LIGHT



Guidance Note

GN01/21

The Reduction of Obtrusive Light

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The Reduction of Obtrusive Light

This Guidance Note supersedes GN01/20 to reflect the changes in international guidance regarding obtrusive light as detailed in *CIE 150: 2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*¹. It also considers industry comment regarding the assessment and definition of obtrusive lighting.

Good lighting practice is the provision of the right light, at the right time, in the right place, controlled by the right system.

The invention of artificial light and its application in the external environment has done much to safeguard and enhance our night-time environment but, if not properly controlled, **obtrusive light** (sometimes referred to as light pollution) can present serious physiological and ecological problems.

Obtrusive light, whether it keeps you awake through a bedroom window, impedes your view of the night sky or adversely affects the performance of an adjacent lighting installation, is a form of pollution. It may also be a nuisance in law and can be substantially mitigated without detriment to the requirements of the task.

Sky glow, the brightening of the night sky, **Glare** the uncomfortable brightness of a light source when viewed against a darker background, **Light spill** the spilling of light beyond the boundary of the area being lit and **Light intrusion ('Nuisance')**² are all forms of obtrusive light which may cause nuisance to others, or adversely affect fauna & flora as well as waste money and energy.

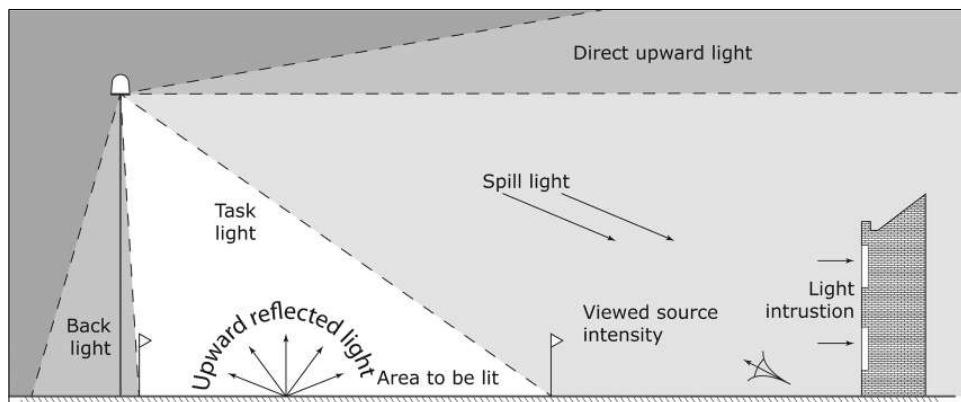


Figure 1: Types of obtrusive light

¹ The copyright of the data detailed within this guide belongs to CIE, email ciecb@cie.co.at

This document should be used in conjunction with CIE 150:2017 and CIE 126:1997 and not as a replacement for the procedures contained therein. These documents can be obtained from <http://cie.co.at/publications> and members of a National Committee of the CIE can purchase them with a discount of 66.7 %.

² The term light trespass has been used in the past and should no longer be referenced, trespass is to physically encroach on land and light can't do that, so the term nuisance or spill light should always be used.

Considerations to be made

Think before you light. Is it necessary? What effect could it have on others? Has it the potential to cause a nuisance? How can you mitigate and manage and potential adverse effects from your lighting installation?

There are published standards and guidance for most lighting tasks adherence to these will help mitigate obtrusive lighting aspects. Organisations from which full details of these standards can be obtained are given later in this Guidance Note.

For the purpose of this Guidance Note, the following two Commission Internationale De L'Eclairage (CIE) documents are specifically referenced, which provide guidance to the mitigation of obtrusive light from exterior lighting installations:

- CIE 150: 2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations
- CIE 126: 1997 Guidelines for Minimizing Sky Glow

When considering any lighting installation then these two documents should be referenced and referred to.

Whilst this guidance Note examines the effects of external lighting installations, other factors should also be considered. Office buildings, residences and shop fronts, with extensive use of glass without blinds, screens or curtains, could become a source of illumination to the exterior environment.

"Good Design Equals Good Lighting"

It cannot be stressed sufficiently that, by employing a competent lighting designer with proven experience in the relevant application, will result in a suitable lighting installation where all obtrusive lighting aspects are mitigated³.

Any lighting scheme consists of three basic elements: a light source, a luminaire (incorporating the optical control system) and a method of installation / mounting.

³ Competency can be determined through membership of a professional lighting body supported by the appropriate qualifications and experience in the application of lighting required.

Light sources (Lamps / LEDs)

The light source output in lumens is not the same as the wattage. It is the former that is important in combating the problems of obtrusive light.

Most night-time visual tasks are only dependent on light radiated within the visual spectrum. It is therefore not necessary for light sources to emit either ultra-violet or infra-red radiation unless specifically designed to do so. The majority of light sources used in external lighting do not contain these wavelengths or where they are present their spectral power is very low.

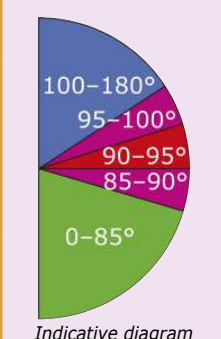
Research indicates that light from the blue end of the spectrum could have important adverse effects on fauna and flora. The lighting designer should consider the blue light spectral power of the light source and try to balance the needs of the task to be lit with any impact on fauna and flora within the environment.

Luminaires

The choice of luminaire with the right optical distribution at the right mounting height is critical to minimising light spill and obtrusive light effects, yet providing the right lighting performance on the task area.

Sky glow is the general diffuse sheen that is visible in the direction of large cities, airports, and industrial complexes. It occurs from both natural and artificial light sources and does not depend exclusively on the lighting design. It also depends on the atmospheric conditions (humidity, aerosols, clouds, haze, atmospheric pollution, etc.). Light propagating into the atmosphere either directly from upward directed or incompletely shielded sources, or after reflection from the ground or other surfaces, is partially scattered back towards observers on the ground; the impact being shown in table 1.

Table 1: The effect on the ability to view the night sky at various angles

	Angle of light emitted (degrees)	Sky glow effect	Glare effect
	100 - 180	Local	Little
	95 - 100	Significant	Some
	90 - 95	High	High
	85 - 90	Significant	High
	0 - 85	Minimum	Some

It is therefore important to consider the luminaire, its light distribution, how it is installed and how it is set up.

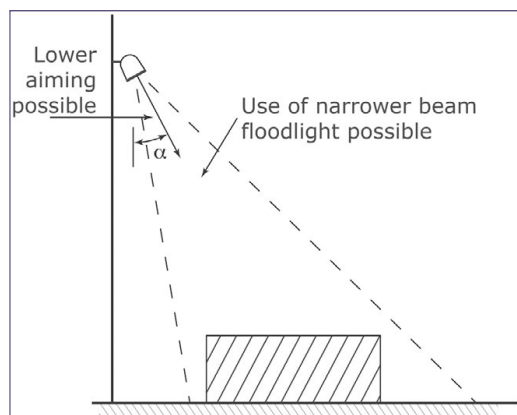
For most general sports and area lighting installations the use of luminaires with asymmetric optics is preferred. This type of optic should be designed and installed so that the front glazing is kept at or near horizontal; parallel to the surface to be lit or ground. If correctly designed, installed and aimed correctly should ensure minimising obtrusive light.

Appendices 1 and 2 give more details of how to choose, and if necessary, through the use of louvres and shields, modify luminaires.

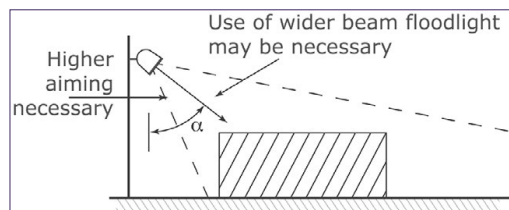
Installation

In most cases it will be beneficial to use as high a mounting height as possible, giving due regard to the daytime appearance of the installation.

It should be noted that a lower mounting height can be worse as can be seen from figures 2 and 3 from CIE 150. A lower mounting height can create a higher level of light spill and require additional lighting points.



✓ *Figure 2a: Higher mounting height – less spill light and glare*



✗ *Figure 2b: Lower mounting height – more spill light and glare*

Keep glare to a minimum by ensuring that the main beam angle of all luminaires directed towards any potential observer is no greater than 70°. Higher mounting heights allow lower main beam angles, which can assist in reducing glare.

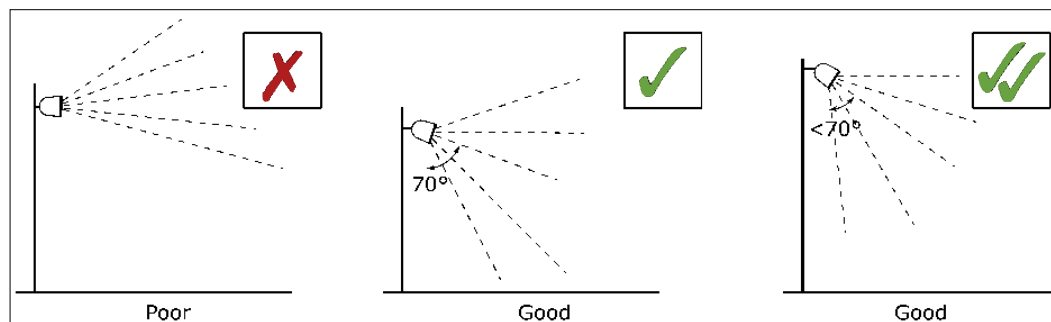


Figure 3: Luminaire aiming angles

In areas with low ambient lighting levels, glare can be very obtrusive and extra care should be taken when positioning and aiming lighting equipment. With regard to domestic security lighting, the ILP produces an information leaflet GN09:2019 “Domestic exterior lighting, getting it right!” that is freely available from its website.

When lighting vertical structures such as advertising signs, direct light downwards wherever possible. If there is no alternative to up-lighting, as with much decorative lighting of buildings, then the use of luminaires with the correct optical distribution coupled where required with shields, baffles and louvres will help reduce spill light around and over the structure to a minimum.

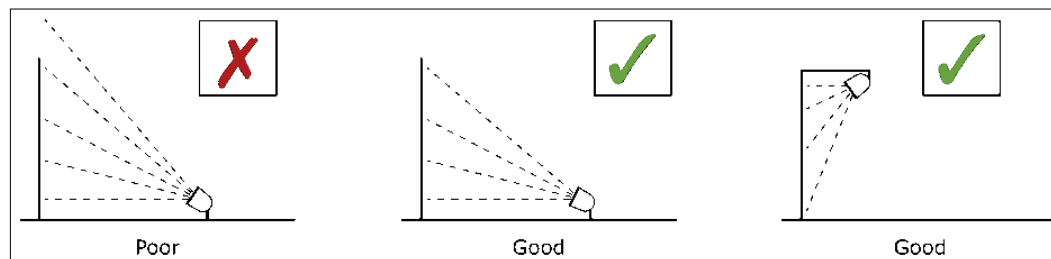


Figure 4: Façade illumination

For road and amenity lighting installations light near to and above the horizontal should normally be minimised to reduce glare and sky glow (Note the Upward Lighting Ratios (ULR's) advised in Tables 5 and 6). In rural areas the use of full horizontal cut off luminaires installed at 0° uplift will, in addition to reducing skyglow, also help to minimise visual intrusion within the open landscape. However, in some urban locations, luminaires fitted with a more decorative bowl and good optical control of light should be acceptable and may be more appropriate.

Clean Neighbourhoods and Environment Act (CNEA) 2005

The Clean Neighbourhoods and Environment Act (CNEA) 2005 gives Local Authorities and the Environment Agency additional powers to deal with a wide range of issues by classifying artificial light emitted from defined premises as a statutory nuisance.

The CNEA 2005 amended section 79(1) of the Environmental Protection Act 1990 to extend the statutory nuisance regime to include light nuisance stating the following:

'(fb) artificial light emitted from premises so as to be prejudicial to health or a nuisance'.

Guidance produced on Sections 101 to 103 of the CNEA 2005 by DEFRA (DEFRA, April 2006) extends the duty on local authorities to ensure their areas are checked periodically for existing and potential sources of statutory nuisances, including nuisances arising from artificial lighting. Local authorities must take reasonable steps to investigate complaints of such nuisances from artificial light. Once satisfied that a statutory nuisance exists or may occur or recur, local authorities must issue an abatement notice (in accordance with section 80(2) of the Environmental Protection Act 1990), requiring that the nuisance cease or be abated within a set timescale.

National Planning Policy Framework (NPPF)

The NPPF was introduced as a more concise and useable planning document to aid developers and designers in the design and construction of developments within the UK.

The National Planning Policy Framework 2019 makes little reference to lighting with regard to the control of obtrusive light, the only reference states:

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Many Local Planning Authorities (LPAs) have already produced, or are producing, policies that within the planning system will become part of their local development framework. For new developments there is an opportunity for LPAs to impose planning conditions related to external lighting, including curfew* hours.

* Curfew: The time after which stricter requirements (for the control of obtrusive light) will apply; often a condition of use of lighting applied the local planning department. Depending upon application curfew times often commence between 21:00 to 23:00 and may run until 07:00. However, exact curfew hours should be carefully applied to ensure the reduction of obtrusive light is prioritised within the immediate environment and towards sensitive human as well as fauna and flora receptors.

National Planning Policy

The national on-line planning guidance resource looks at when lighting pollution concerns should be considered;

The guidance provides a high level overview for planners with links to a few appropriate documents to give planners an overview of the subject through seven discussion points as follows:

- When is light pollution relevant to planning
- What factors should be considered when assessing whether a development proposal might have implications for light pollution
- What factors are relevant when considering where light shines
- What factors are relevant when considering when light shines
- What factors are relevant when considering how much the light shines
- What factors are relevant when considering possible ecological impact
- What other information is available that could inform approaches to lighting and help reduce light pollution

Artificial light requires consideration at the planning stage. To ensure that any proposed lighting installation conforms to the requirements of an area and its intended task, planners should consult with a competent lighting professional. The appropriate planning conditions for the project can then be established, the application reviewed, and the final performance of the installation confirmed.

The Scottish Executive has published a design methodology document (March 2007) entitled "*Controlling Light Pollution and Reducing Energy Consumption*", to further assist in mitigating obtrusive light elements at the design stage.

Environmental Zones

It is recommended that Local Planning Authorities specify the following environmental zones for exterior lighting control within their Development Plans.

Table 2: Environmental zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town / City centres with high levels of night-time activity

Note 1 Where an area to be lit lies close to the boundary of two zones the obtrusive light limitation values used should be those applicable to the most rigorous zone (see comment below)

Note 2 Rural zones under protected designations should use a higher standard of policy

Note 3 Zone E0 must always be surrounded by an E1 Zone

Note 4 Zoning should be agreed with the local planning authority. Due to local requirements a more stringent zone classification may be applied to protect special / specific areas

Note 5 SQM (Sky Quality Meter) is referenced by the International Dark Skies Association (IDA). SQM is an instrument used to measure the luminance of the night sky. It is typically used by astronomers to quantify skyglow, using units of magnitudes per square arcsecond. the scale is between 16:00 (a bright night sky) and 22:00 (the least light pollution). The criteria for zone E0 was revised in mid 2019, with the new requirements not being made retrospective

Note 6 Astronomical Observable Dark Skies will offer clearer views of the Milky Way and of other objects such as the Andromeda Galaxy and the Orion Nebula

Note 7 Although values of SQM 20 to 20.5 may not offer clear views of astronomical dark sky objects such as the Milky Way, these skies will have their own relative intrinsic value in the UK

Adjacent Zone Considerations

As advised in Note 1 to Table 2, where an area to be lit lies within visual distance of the boundary between two zones then the obtrusive light values applicable to the most rigorous zone shall apply. Figure 5 demonstrates this. For an observer located within or at the boundary of a more rigorous zone ($E(X-1)$) compared to the adjacent less rigorous zone ($E(X)$) then when the observer faces the less rigorous zone they will only be exposed to obtrusive lighting level pertinent to the zone within which they are located.

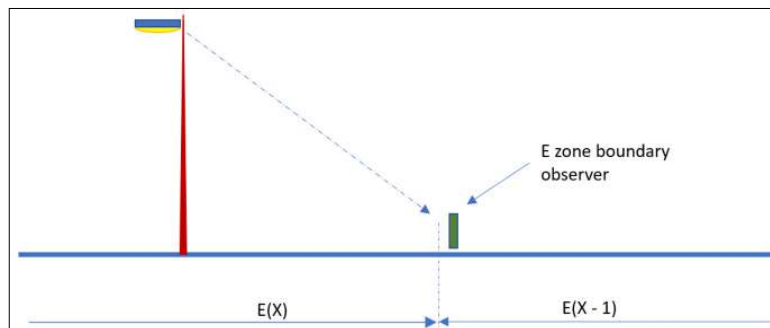


Figure 5: boundary zone considerations

Design Guidance

The following limitations based upon CIE150 may be supplemented or replaced by an LPA's own planning guidance for exterior lighting installations. As lighting design is not as simple as it may seem, you are advised to consult and/or work with a competent professional lighting designer when considering any exterior lighting.

Recommended Maximum Values of Light Parameters for the Control of Obtrusive Light

Limitation of illumination on surrounding premises

Light intrusion / nuisance

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on premises

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

* If the installation is for public (road) lighting then this may be up to 1 lx.

Limits apply to nearby dwellings / premises or potential dwellings / premises and specifically windows. The values are the summation of all lighting installations.

Spill light

Table 3 can also be considered for the management of spill light; however, designers must consider the task performance requirements of any adjacent lit areas and ensure that any spill light does not adversely affect these performance parameters as this could affect their safe use. This may result in a need to minimise spill and intrusive lighting values to less than might be expected for the environmental zone within which the installation lies.

Limitation of bright luminaires in the field of view

The limits for the luminous intensity of bright luminaires are dependent on the viewing distance d , (between the observer and the bright luminaire(s)) and the projected area A_p , of the bright part of the luminaire in the direction of the observer.

Table 4 shows the maximum values for the luminous intensity of luminaires in designated directions where views of bright surfaces of luminaires are likely to be a nuisance to occupants of premises, or from positions where such views are likely to be maintained, i.e. not for momentary or short-term viewing.

Table 4 (CIE 150 table 3): Limits for the luminous intensity of bright luminaires⁴

Light technical parameter	Application conditions	Luminaire group (projected area A_p in m ²)					
		$0 < A_p \leq 0.002$	$0.002 < A_p \leq 0.01$	$0.01 < A_p \leq 0.03$	$0.03 < A_p \leq 0.13$	$0.13 < A_p \leq 0.50$	$A_p > 0.5$
Maximum luminous intensity emitted by luminaire (I in cd) ⁵	E0 Pre-curfew Post-curfew	0 0	0 0	0 0	0 0	0 0	0 0
	E1 Pre-curfew Post-curfew	0.29 d 0	0.63 d 0	1.3 d 0	2.5 d 0	5.1 d 0	2,500 0
	E2 Pre-curfew Post-curfew	0.57 d 0.29 d	1.3 d 0.63 d	2.5 d 1.3 d	5.0 d 2.5 d	10 d 5.1 d	7,500 500
	E3 Pre-curfew Post-curfew	0.86 d 0.29 d	1.9 d 0.63 d	3.8 d 1.3 d	7.5 d 2.5 d	15 d 5.1 d	10,000 1,000
	E4 Pre-curfew Post-curfew	1.4 d 0.29 d	3.1 d 0.63 d	6.3 d 1.3 d	13 d 2.5 d	26 d 5.1 d	25,000 2,500

Note 1 d is the distance between the observer and the glare source in metres;

Note 2 A luminous intensity of 0 cd can only be realised by a luminaire with a complete cut-off in the designated directions;

Note 3 A_p is the apparent surface of the light source seen from the observer position

Note 4 For further information refer to Annex C of CIE 150

Note 5 Upper limits for each zone shall be taken as those with column $A_p > 0.5$

Considerations to aid the application of Table 4 and the assessment process.

- The assessment of A_p for observers can prove difficult and will vary for all observer positions and distances.
- The above information is applicable for the consideration of a single luminaire, but where two or more luminaires are located in close proximity to each other that to the observer they appear as a single light source, then the assessment shall be undertaken based upon the combined bright surfaces of luminaires (A_p) in the direction of the observer or, from positions where such views are likely to be maintained.
- In installations that involve lighting poles, towers or columns, the luminaires will often be viewed against the night sky. The contrast between the background sky and the bright surface areas of the luminaires can be considerable. In such installations the curfew levels

⁴ Amended based upon the approach taken by NSVV Nederlandse Stichting Voor Verlichtingskunde (Dutch: Dutch Foundation for Illumination; The Netherlands) and to consider CIE150 Annex C Table C.2

set for each environmental zone shall be applied, with the exception that such installations within an E4 zone will be designed to suit the curfew requirements of an E3 zone.

Appendix 3 provides a supplementary guidance to aid the application and use of Table 4.

Limitation of the effects on transport systems

Limits apply where users of road networks are subject to a reduction in the ability to see essential information. CIE 150 2017; Table 4 gives values that are for relevant positions and for viewing directions in the path of travel.

This assessment does not just apply to road lighting installations, but to any installation where luminaires' positioning falls under the above definition i.e. luminaires visible from the road network.

For non-road lighting installations where Threshold Increment (TI) cannot be established look to GN01 Table 4 source intensity limitations.

Table 5 (CIE 150; table 4): Maximum values of Threshold Increment and viewing direction in the path of travel

Light technical parameter	Road classification ¹			
	No road lighting	M6 / M5	M4 / M3	M2 / M1
Veiling luminance ² (L_v)	0.037 cd/m ²	0.23 cd/m ²	0.40 cd/m ²	0.84 cd/m ²
Threshold Increment	15% based on adaption luminance of 0.1 cd/m ²	15% based on adaption luminance of 1.0 cd/m ²	15% based on adaption luminance of 2.0 cd/m ²	15% based on adaption luminance of 5 cd/m ²

Note 1 Road classifications as given in CIE 115:2010

Note 2 The veiling luminance values specified in this table are based upon on a permissible TI value of 15%

Definitions:

TI The measure of disability glare expressed as the percentage increase in contrast required between an object and its background for it to be seen equally well with a source of glare present. Note: Higher values of TI correspond to greater disability glare, the reduction in visibility caused by intense light sources in the field of view.

L_v The luminance that would need to be superimposed on a scene in object space to reduce the scene's contrast by an amount equal to the added retinal illuminance from scattered light on the scene's retinal image. It is most commonly used to describe the contrast-reducing effect of a glare source in the field of view.

Limitation of skyglow

Table 6 (CIE 150 table 5): Maximum values of upward light ratio (ULR) of luminaires

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR) / %	0	0	2.5	5	15

Note 1 This is the primary approach to limit skyglow and is suitable to compare different single luminaires and mitigate the contribution of each luminaire within an installation.

Note 2 This does not take into account the effect of light reflected upwards from ground that also contributes to skyglow.

Note 3 Some lighting schemes will require the deliberate and careful use of upward light, e.g. ground recessed luminaires, ground mounted floodlights and festive lighting, to which these limits cannot apply. However, care should always be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.

Table 7 (CIE 150 table 6): Maximum values of upward flux ratio of installation (of four or more luminaires)

Light technical parameter	Type of installation	Environmental zones				
		E0	E1	E2	E3	E4
Upward flux ratio (UFR) / %	Road	n/a	2	5	8	12
	Amenity	n/a	n/a	6	12	35
	Sports	n/a	n/a	2	6	15

Table 7 allows the effect of both direct and reflected upward components of a whole installation to be considered. The factor being the upward flux ratio (UFR).

Note n/a within table 7 denotes that lighting of this type is not usually expected within these zones

This should only be considered where an installation consists of four or more luminaires that form an installation with a defined performance requirement or specialised fauna growth lighting systems (such as those used to promote grass growth in sports stadia) and is in proximity to:

- Optical observatories
- Lies within dark (E1) zones which abuts a protected (E0) dark sky zone

Note 1 The effect of distance must be considered which is a factor of the artificial lighting installation size. A small lighting installation will have an effect on an optical observatory 30km away whereas a large lighting installation of many luminaires will have an effect from a greater distance up to 100km. Specific guidance is given in CIE126 and CIE150.

Note 2 All external surfaces will have varying reflectances depending upon their condition and climatic conditions (wet, dry, frost etc,) as well as their varying angles, therefore the level of uncertainty in any assessment may be considerable.

Clauses 6.4.2 and 6.4.3 of CIE 150: 2017 describe the calculation methods for both ULR and UFR.

As discussed in Table 1, light emitted just above the horizontal in a zone between 80° and 110° is extra critical for skyglow in large open areas around observatories. An additional measure in these areas limits the luminous intensities ($I_{80} - I_{110}$) as follows:

- Between 80° and 90° < 2.0 cd/ 1000lm
- Between 90° and 100° < 0.5 cd/1000lm
- Between 100° and 110° 0 cd (0.5% of total luminaire lumens for bollard luminaires)

Note All proposed luminaires must have been photometrically measured so that results can be verified for Gamma angles 0 to 180°.

Limitations of the effect of over-lit building facades and signs

Table 8 provides recommendations regarding luminance values that provide visibility in order that a balanced urban lighting master plan can be considered. This lighting does not cause negative impacts such as a continuous increase in the lighting levels (or ratcheting) between buildings and within areas creating light pollution.

Illuminated advertising signage should be assessed as advised in the Institutions Professional Lighting Guide 05 (PLG05); The Brightness of Illuminated Advertisements.

Table 8 (CIE 150 table 7): Maximum permitted values of average surface luminance

Light technical parameter	Application conditions	Environmental zones				
		E0	E1	E2	E3	E4
Building façade luminance (L_b)	Taken as the product of the design average illuminance and reflectance divided by n	$< 0.1 \text{ cd/m}^2$	$< 0.1 \text{ cd/m}^2$	5 cd/m^2	10 cd/m^2	25 cd/m^2
Sign luminance (L_s)	Taken as the product of the design average illuminance and reflectance divided by n (p_i), or for self-luminous signs, its average luminance	$< 0.1 \text{ cd/m}^2$	50 cd/m^2	400 cd/m^2	800 cd/m^2	1.000 cd/m^2

Note The values apply to both pre- and post-curfew, except that in Zones 0 and 1 the values shall be zero post-curfew. The values for signs do not apply to signs for traffic control purposes.

For illuminated advertising signs the aim should be to achieve the limits advised in PLG05.

Relevant Publications and Standards

British Standards

BS 5489-1:2020 Code of practice for the design of road lighting – Part 1 Lighting of roads and public amenity areas

BS EN 13201-2:2015 Road lighting; Part 2: Performance requirements

BS EN 13201-3:2015 Road lighting; Part 3: Calculation of performance

BS EN 13201-4:2015 Road lighting; Part 4: Methods of measuring lighting performance

BS EN 12193:2018 Light and lighting; Sports lighting

BS EN 12464-2:2014 Lighting of work places; Outdoor work places

PD CEN TR 13201-1:2014 Road lighting; Guidelines on selection of lighting classes

BS EN 12464-2:2014 Light and lighting; Lighting of work places; Part 2 Outdoor work places

CIE publications

001 Guidelines for minimizing urban skyglow near astronomical observatories

CIE 094-1993 Guide for flood lighting

CIE 112-1994 Glare evaluation system for use within outdoor sport and area lighting

CIE 115:2010 Lighting of roads for motor and pedestrian traffic

CIE 126:1997 Guidelines for Minimising Sky Glow

CIE 129:1998 Guide for lighting exterior working areas

CIE 136:2000 Guide to the lighting of urban areas

CIE 150:2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations

CIE 169:2005 Practical design guidelines for the lighting of sport events for colour

ILP publications

PLG 04 Guidance on undertaking environmental lighting impact assessments

PLG 05 The brightness of illuminated advertisements

PLG 06 Guidance on seasonal decorations and lighting column attachments

GN 09 Domestic Security Lighting: Getting it right!

SLL / CIBSE Publications

LG 01: The industrial environment (2018)

LG 04: Sports lighting

LG 06/16: The exterior environment

LGLOL Guide to limiting obtrusive light

NB: These notes are intended as guidance only. The application of the values given in the various tables should be given due consideration along with all other factors in the lighting design. Lighting is a complex subject with both objective and subjective criteria to be considered. The notes are therefore no substitute for professionally assessed and designed lighting undertaken and assessed by a competent lighting professional, where the various and maybe conflicting visual requirements need to be balanced.

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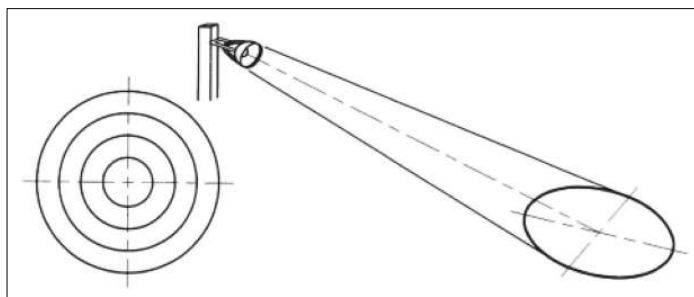
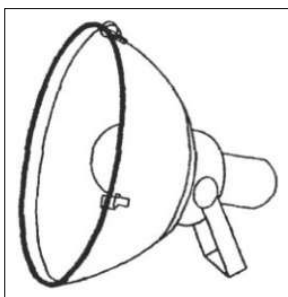
Acknowledgements

<i>Allan Howard</i>	<i>WSP (Chair)</i>
<i>Peter Raynham</i>	<i>UCL</i>
<i>Dan Oakley</i>	<i>South Downs National Park</i>
<i>Appendix 2 images</i>	<i>acdc</i>
<i>Cover image</i>	<i>Allan Howard</i>

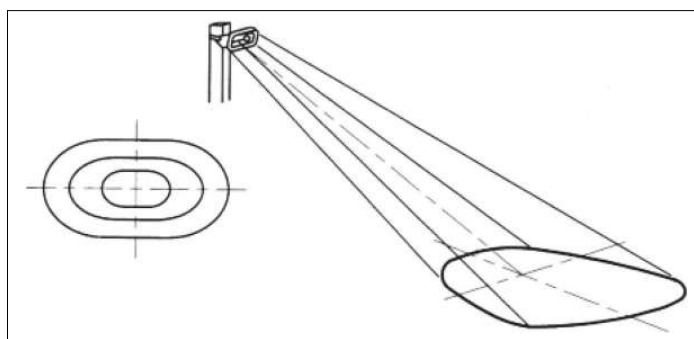
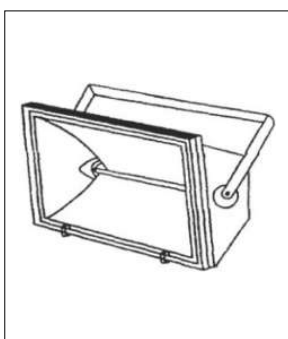
Appendix 1

Outdoor luminaire classification system

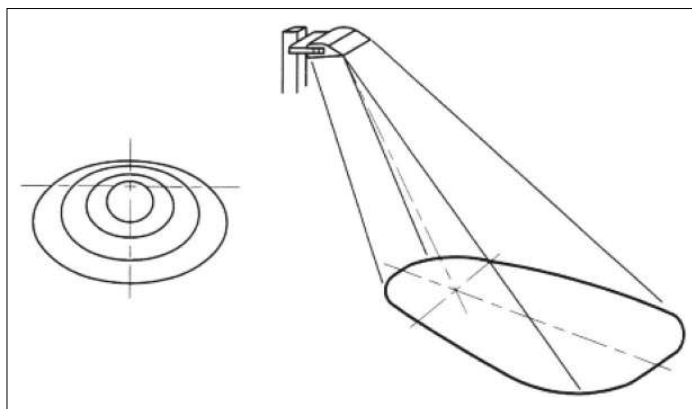
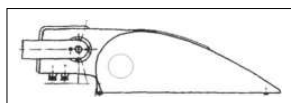
Based upon CIE 150:2017 and for the purpose of this and associated documents the following figures illustrate the luminaire classification (CIE 150:2017)



Type A flood light / projector producing a symmetrical beam



Type B flood light / projector producing a fan-shaped beam



Type C flood light / projector producing a double asymmetric distribution in the vertical plane

Appendix 2

Illustrations of luminaire accessories for limiting obtrusive light



Luminaire with cowl, hood & shield



With louvre



With cowl

Appendix 3

Supplementary guidance

Limits for the luminous intensity of bright luminaires

The ILP's Guidance notes for the reduction of obtrusive light 2011 and CIE 150:2003 only advised of a single limiting luminaire intensity based upon an environmental zone and pre / post curfew assessment. This approach did not take into consideration the fact that intensity is a factor of illuminance at the observer multiplied by the square of the distance to the source. As we know, the illuminance received is a factor of the inverse square law, as well as the size of the source.

GN01/20 superseded by GN01/21, as well as CIE150:2017 now take this into consideration, but with few exceptions lighting design software has yet to catch up with the requirements.

The assessment of intensity as advised within Table 4 has been developed to assist the competent professional lighting designer in making the considerations necessary. At this time, and until software is available to assist the designer, they must make their best professional judgement and undertake some manual assessments, calculations and reviews, based upon software that is currently available to determine compliance or otherwise with intensity limits and values.

This should be considered as follows:

1. Observer position (d)

The closest observer position will be the most onerous, so for any given installation determine where the most realistic closest maintained observer position will be. This is where the luminous intensity will be greatest, and should therefore set the limiting assessment value.

2. Determine the luminaire group (projected area A_p)

As can be seen in Image 1, whilst all the luminaires are of the same size, their apparent projected area A_p is different for each one from a single observer position.



Image 1: Change in projected area based upon observer position

In general, for the same observer distance (d) a luminaire with a smaller A_p will cause the greater concern regarding luminous intensity.

Where the designer knows the expected A_p of the installed luminaire, then this figure can be used to determine the luminaire group in Table 4. Where this factor is unknown then the bottom three rows of table 4 (amended below) are provided as an aid to gauging A_p and are based upon CIE150:2017 Annex C. This approach groups ranges of luminaires by diameter, extracts a geometric mean diameter for each group and provides a corresponding A_p for application (if your luminaire is square then you will need to do a calculation based upon area), so this can be used to assign the luminaire group. Whilst this is for circular luminaires the designer will need to make their best professional judgement for all shapes of luminaires and the expected A_p towards each observer.

Table 4 (CIE150 Table 3 (amended)), limits for the luminous intensity of bright luminaires⁵

Light technical parameter	Application conditions	Luminaire group (projected area A_p in m ²)					
		$0 < A_p \leq 0.002$	$0.002 < A_p \leq 0.01$	$0.01 < A_p \leq 0.03$	$0.03 < A_p \leq 0.13$	$0.13 < A_p \leq 0.50$	$A_p > 0.5$
Maximum luminous intensity emitted by luminaire (I in cd) ⁵	E0 Pre-curfew Post-curfew	0 0	0 0	0 0	0 0	0 0	0 0
	E1 Pre-curfew Post-curfew	0.29 d 0	0.63 d 0	1.3 d 0	2.5 d 0	5.1 d 0	2,500 0
	E2 Pre-curfew Post-curfew	0.57 d 0.29 d	1.3 d 0.63 d	2.5 d 1.3 d	5.0 d 2.5 d	10 d 5.1 d	7,500 500
	E3 Pre-curfew Post-curfew	0.86 d 0.29 d	1.9 d 0.63 d	3.8 d 1.3 d	7.5 d 2.5 d	15 d 5.1 d	10,000 1,000
	E4 Pre-curfew Post-curfew	1.4 d 0.29 d	3.1 d 0.63 d	6.3 d 1.3 d	13 d 2.5 d	26 d 5.1 d	25,000 2,500
	Aid to gauging A_p Luminaire diameter	2 to 5 cm	5 to 10 cm	10 to 20 cm	30 to 40 cm	40 to 80 cm	>80 cm
	Geometric mean of diameter (cm)	3.2	7.1	14.1	26.3	56.6	>80
	Corresponding A_p representative area (m ²)	0.0008	0.004	0.016	0.063	0.251	>0.5

Note 6 d is the distance between the observer and the glare source in metres

Note 7 A luminous intensity of 0 cd can only be realised by a luminaire with a complete cut-off in the designated directions

⁵ Amended based upon the approach taken by NSVV Nederlandse Stichting Voor Verlichtingskunde (Dutch: Dutch Foundation for Illumination; The Netherlands) and to consider CIE150 Annex C Table C.2

Note 8 A_p is the apparent surface of the light source seen from the observer position

Note 9 For further information refer to Annex C of CIE 150

Note 10 Upper limits for each zone shall be taken as those with column $A_p > 0.5$

To aid this assessment, values of A_p corresponding to the geometric mean diameter of each circular luminaire group have been extracted from CIE150 Annex C and included within Table 3. These areas can be considered for an assessment of likely A_p in the observer direction to calculate a maximum luminous intensity value.

3. *Determining the maximum luminous intensity emitted*

This is just a matter of looking down the luminaire group and to the appropriate environmental zone, and determining the calculation required for pre and post curfew levels. This will advise the designer / assessor of the maximum permitted luminous intensity for that observer position and luminaire. Existing software can then be used based upon observer position and the value of intensity advised by the programme manually compared to the limited value determined from Table 4.

The additional notes b) multiple luminaires and c) luminaires viewed against the night sky within GN01/20 for the consideration of the limitation of bright luminaires in the field of view should also be considered.

Example:

1. *15 cm luminaire*

We are working in an E2 zone, the luminaire has a diameter of 15cm and the realistic expected maintained nearest observer position is 100m away.

Based upon Table 4, this advises that the geometric mean of diameter is 14.1cm, and the corresponding representative A_p is 0.016. This places it within the luminaire group $0.01 < A_p \leq 0.03 \text{ m}^2$ grouping. Reading down this column to E2, the pre-curfew maximum luminous intensity calculation is $2.5d$ where d from our case is 100m.

The limiting intensity to the identified observer is therefore $2.5 \times 100 = 250 \text{ cd}$

2 *44 cm luminaire*

We are working in an E3 zone, the luminaire has a diameter of 44 cm and the realistic expected maintained nearest observer is 80m away.

Based upon Table 4, this advises that the geometric mean of diameter is 56.6cm, and the corresponding representative A_p is 0.251. This places it within the luminaire

group $0.13 < A_p \leq 0.50 \text{ m}^2$ grouping. Reading down this column to E3, the pre-curfew maximum luminous intensity calculation is 15d where d from our case is 80m.

The limiting intensity to the identified observer is therefore $15 \times 80 = 1,200 \text{ cd}$

Assessment

In both cases these are the values the competent lighting designer needs to use within the assessment calculations. If the lighting design software is CIE150:2017 compliant it will do this, however this may require the designer to make manual assessments between intensity values advised through existing software, and the limitation required for each observer, and adjust their design until it is compliant.

ATTACHMENT B
NCAA Best Lighting Practices

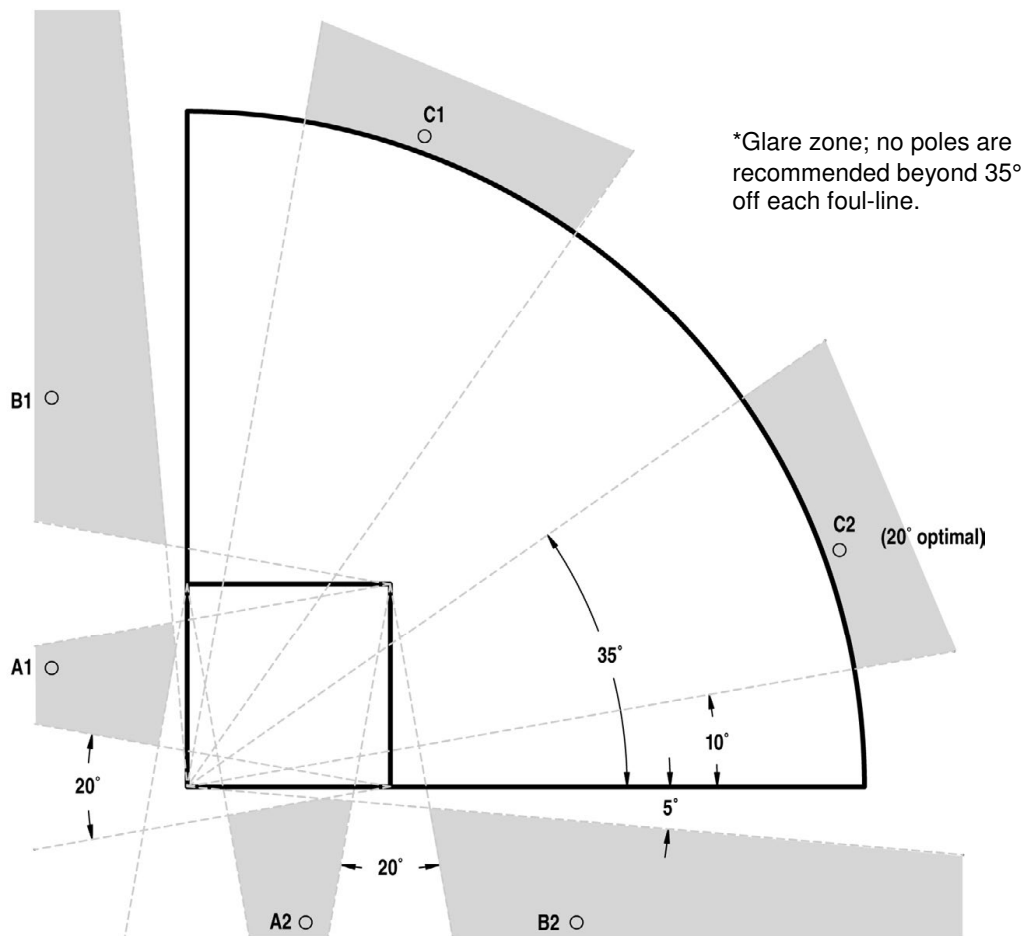


Best Lighting Practices: Softball Standard Intercollegiate Play

Summary: Following these recommended best practices will help ensure quality of light needed for the safety of participants and the enjoyment of spectators, as required.

Horizontal light levels: 70 footcandles infield / 50 footcandles outfield
Horizontal uniformity: 2.0:1 infield, 2.5:1 outfield
Grid spacing: 20 ft x 20 ft

Recommended pole placement:



1. Shaded areas indicate recommended pole location.
2. Line drawn through each "A" pole location must be behind home plate to ensure lighting the portion of the ball the batter sees as it crosses home plate.
3. Consideration should be given to locating "B" poles between 1/3 and 2/3 distance of the foul-line. This positioning towards the outfield foul pole allows the ball to be lit in a more constant perpendicular illuminance as it travels from the infield to the outfield.
4. Recommend minimum field sizing is as follows: 190 feet down the lines and 200 feet minimum to the center.
5. For new facilities or upgrades, it is recommended to consult a lighting professional for optimal pole placement.



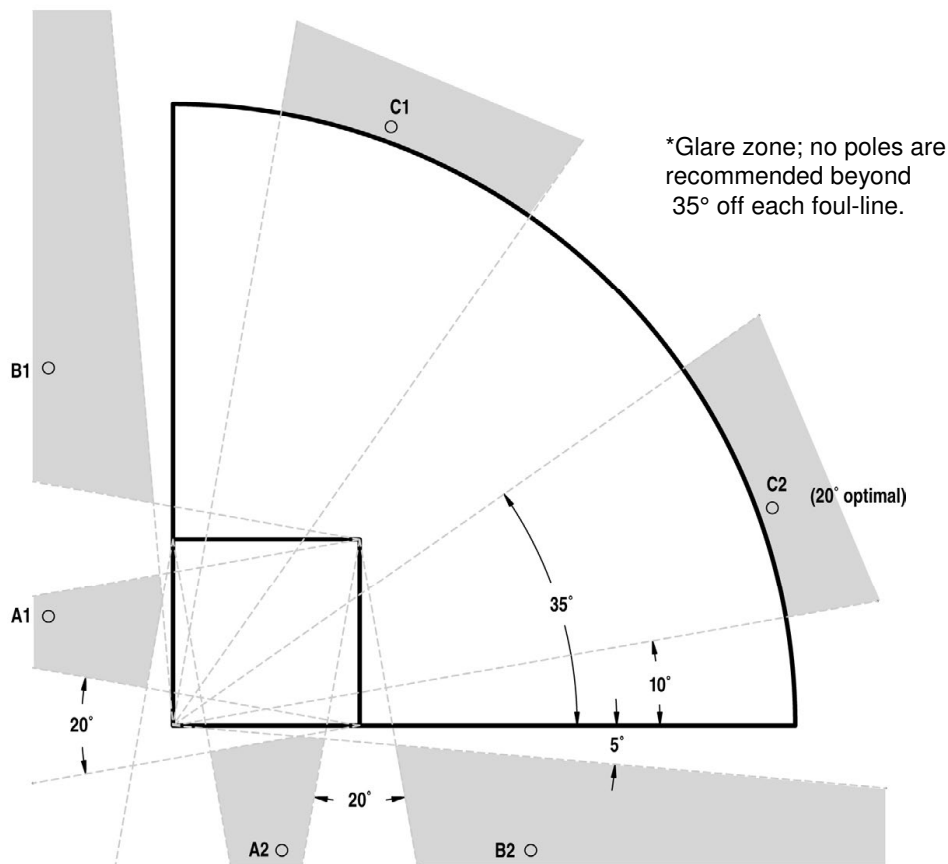
Best Lighting Practices: Softball

Regional and National Broadcast

Summary: Following these recommended best practices will help ensure quality of light needed for the safety of participants, enjoyment of spectators, and quality regional and national television broadcasts, as required.

Horizontal light levels: 100 footcandles infield / 70 footcandles outfield
Horizontal uniformity: 1.5:1 infield, 2.0:1 outfield
Vertical light levels: 70/40 footcandles to high home plate camera
70/40 footcandles to 1st baseline camera
70/40 footcandles to 3rd baseline camera
Vertical uniformity: NA
Grid spacing: 20 ft x 20 ft

Recommended pole placement:



1. Shaded areas indicate recommended pole location.
2. Line drawn through each "A" pole location must be behind home plate to ensure lighting the portion of the ball the batter sees as it crosses home plate.
3. Consideration should be given to locating "B" poles between 1/3 and 2/3 distance of the foul-line. This positioning towards the outfield foul pole allows the ball to be lit in a more constant perpendicular illuminance as it travels from the infield to the outfield.
4. Recommend minimum field sizing is as follows: 190 feet down the lines and 200 feet minimum to the center.
5. For new facilities, or upgrades, it is recommended to consult a lighting professional for optimal pole placement.

ATTACHMENT C
Upward Flux Ratio

Upward Flux Ratio (UFR)

Per CIE150: 2017, page 26, Equation 4
by M. Papineau, January 25, 2024

UFR is obtained from the formula:

$$R_{UF} = \frac{E_i}{E_m} \left[1 + \frac{R_{U,D,0,u}}{\rho_1 - u} + \frac{\rho_2}{\rho_1} \left(\frac{R_{D,D,0,u} - u}{u} \right) \right]$$

UFR Calculator

ENTER DATA:

Ei/Em

1.05

initial illuminance/maintained illuminance

$R_{U,D,0,u}$

0

ratio of upward directed light

$R_{D,D,0,u}$

1

ratio of downward directed light

ρ_1

0.25

field turf reflection

ρ_2

0.32

other reflection by surroundings

u

0.52

utilization factor

RESULT:

UFR= 2.3

Exceeds limit for zone E2.
*See CIE150: 2017, Table 6.

UFR sensitivity to reflectances

UFR equals or exceeds 2 (rounded) for cases where turf/sod reflection is 0.22 to 0.25 and other reflection >0.50.

1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.22	0.24	0.26	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
0.26	0.26	0.27	0.27	0.28	0.28	0.28	0.29	0.29	0.29	0.30	0.30	0.31	0.31	0.32	0.32
0.55	0.54	0.53	0.52	0.51	0.50	0.55	0.54	0.53	0.52	0.51	0.50	0.55	0.54	0.53	0.52
2.1	2.0	2.0	2.1	2.2	2.2	2.0	2.1	2.1	2.2	2.3	2.3	2.1	2.2	2.2	2.3

CIE150: 2017 Threshold Limits

Table 6 – Maximum values of upward flux ratio of installation (of four or more luminaires)

Light Technical Parameter	Type of Installation	Environmental Zones				
		E0	E1	E2	E3	E4
Upward flux ratio (UFR) / %	Road	n/a	2	5	8	12
	Amenity	n/a	n/a	6	12	35
	Sports	n/a	n/a	2	6	15

UFR sensitivity to utilization factor, "u"

UFR equals or exceeds 2.3 for "u" between less than 0.50

	Case 1	Case 2	Case 3	Case 4	Case 5
Ei/Em	1.05	1.05	1.05	1.05	1.05
$R_{U,D,0,u}$	0.00	0.00	0.00	0.00	0.00
$R_{D,D,0,u}$	1.00	1.00	1.00	1.00	1.00
ρ_1	0.22	0.23	0.24	0.25	0.26
ρ_2	0.26	0.27	0.28	0.29	0.3
u	UFR	UFR	UFR	UFR	UFR
0.49	2.3	2.3	2.3	2.3	2.3
0.50	2.3	2.3	2.3	2.3	2.3
0.51	2.2	2.2	2.2	2.2	2.2
0.52	2.2	2.2	2.2	2.2	2.2
0.53	2.2	2.1	2.1	2.1	2.1
0.54	2.1	2.1	2.1	2.1	2.1
0.55	2.1	2.1	2.1	2.0	2.0
0.56	2.0	2.0	2.0	2.0	2.0
0.57	2.0	2.0	2.0	2.0	2.0

ATTACHMENT D
Résumé of Marc R. Papineau



1995-present Environmental Service (Castro Valley, CA)

Mr. Papineau offers specialized services in air pollution and greenhouse gas impact assessment, community noise assessment, and Phase I environmental site assessment. His services have supported the land development projects of local not-for-profit affordable housing developers and market-rate housing developers. Mr. Papineau has managed multidisciplinary teams preparing Environmental Impact Statements (EISs), Environmental Impact Reports (EIRs), and Negative Declarations for water and wastewater projects, road and interchange improvements, and residential subdivisions. He founded Environmental Service in October 1995 and the Greenhouse Gas Information Group in October 2009.

1992-1995 Levine Fricke Recon (LFR), formerly Certified Engineering & Testing Co.

Mr. Papineau managed the Physical Sciences Department whose emphasis was Phase I and II environmental site assessments for developers and lenders.

1982-1991 Earth Metrics Incorporated (Burlingame, CA)

Managed the Physical Sciences Department that performed Phase I environmental site assessments, acoustical assessments, air pollution and odor assessments, and indoor air quality assessments, and also managed project teams preparing EIRs. Managed a smog trend study of the Livermore-Amador Valley and carbon monoxide (CO) monitoring, both conducted for the Hacienda Business Park, Pleasanton, CA. Services of the Physical Sciences Department supported the programs of cities, school districts and utility districts and also assisted private-sector developers.

1981-1982 Earth Metrics Incorporated (Houston, TX)

Mr. Papineau managed and implemented a community scale CO monitoring study in Houston, TX, for a joint venture enterprise providing consulting services to the City of Houston and Urban Mass Transit Administration (UMTA) in regard to the "Spine Corridor," a commuter rail concept. He applied results of the monitoring to validate a microscale carbon monoxide model, which then was applied to predict future CO levels in transit station locations and feeder routes.

1979-1981 Graduate Studies (Berkeley, CA)

During a leave of absence for one quarter, Mr. Papineau participated in environmental assessments for the Multnomah and Sunset light rail corridor alternatives in Portland, OR, including air quality and transportation noise measurements and analysis for METRO.

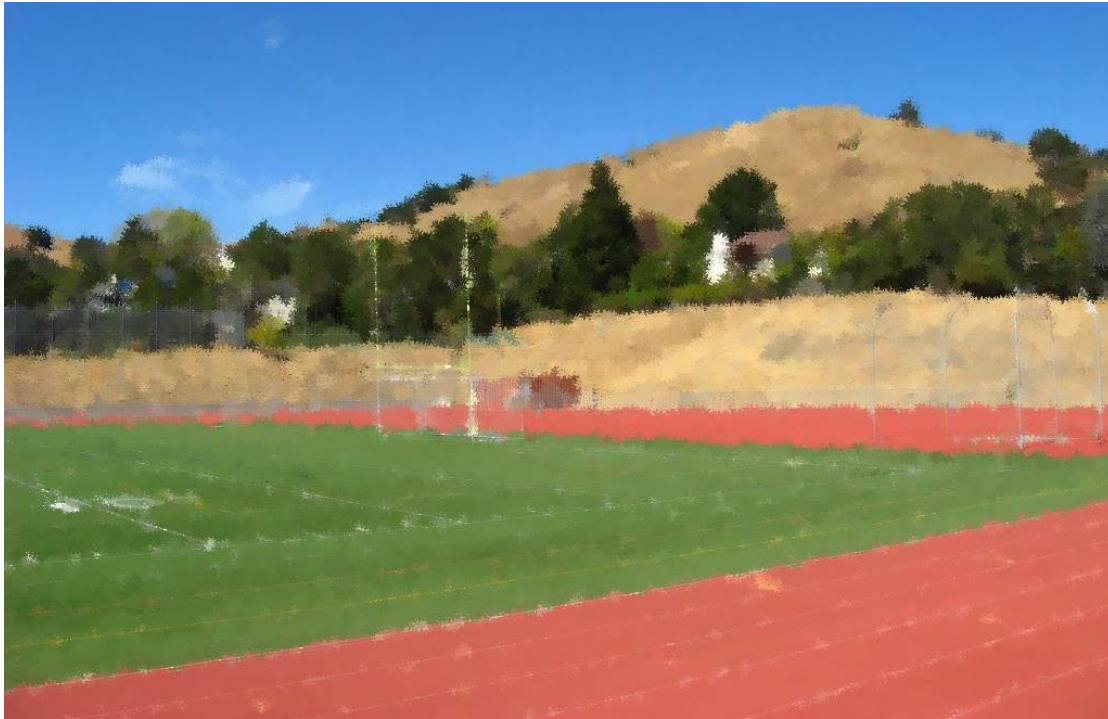
1978-1979 Earth Metrics Incorporated (Palo Alto, CA)

Mr. Papineau was an environmental scientist and technical writer for EISs and EIRs documentation pursuant to the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). He performed air quality and transportation noise modeling using U.S. EPA guideline and Federal Highway Administration (FHWA) models. Conducted a statistical analysis of ozone transport for the Butte County Air Pollution Control District, which showed patterns consistent with ozone transport from outside Butte County.

1977-1978 Environmental Research & Technology (Westlake Village, CA)

Mr. Papineau performed statistical evaluations of basin-wide "CHAMPS" air pollution monitoring data for Dr. George Hidy, whose Los Angeles basin smog research was funded by the American Petroleum Institute.

EXHIBIT C



San Marin High School Stadium Lights Project

Partially Revised Final Environmental Impact Report

SCH#2016082068

prepared by

Novato Unified School District

1015 7th Street

Novato, California 94945

Contact: Yancy Hawkins, Assistant Superintendent of Business and Operations

prepared with the assistance of

Rincon Consultants, Inc.

449 15th Street, Suite 303

Oakland, California 94612

October 2019



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Environmental Scientists | Planners | Engineers

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Appendices

Appendix A	Revised Initial Study Biological Resources Analysis
Appendix B	Lighting Report
Appendix C	Photometric Studies

1 Introduction

This document is a Revised Environmental Impact Report (EIR) for the proposed San Marin High School Stadium Lights Project, located in the City of Novato, California. For the purposes of this Revised EIR, the San Marin High School Stadium Lights Project refers to the installation of stadium lighting and athletic field improvements, as detailed in Section 2, *Project Description*, of the original EIR.

1.1 Environmental Impact Report Background

The Novato Unified School District's Board of Trustees certified a Final EIR for the proposed project in May of 2017. In January of 2019, after construction of the project, the Marin County Superior Court ordered NUSD to revise and republish the following sections of the EIR, and to desist from operation of the project until the Revised EIR is certified:

- Aesthetics
- Biological Resources (analyzed in the Initial Study, which was Appendix A to the Final EIR)
- Alternatives
- Cumulative Impacts

Please note that the section numbering in this Partially Revised Draft EIR is different from the numbering of the corresponding sections in the original EIR. The Aesthetics section, Section 2 of this Revised EIR, was Section 4.1 of the original EIR. The Alternatives section, Section 4 of this EIR, was Section 6 of the original EIR. Cumulative Impacts, Section 3 of this EIR, is a new section, presenting the cumulative impacts analyses for all of the topics studied in the original EIR. The Biological Resources from the original EIR was in Appendix A, Initial Study, of the original EIR; here, it is also in Appendix A.

Regarding revised and recirculated EIRs, California Environmental Quality Act (CEQA) Guidelines Section 15088.5(c) states that "If the revision is limited to a few chapters or portions of the EIR, the lead agency need only recirculate the chapters or portions that have been modified." Therefore, this Revised EIR consists only of the revised sections, as well this introduction and a list of new references not cited in the original EIR; it does not include those sections and discussions from the original Final EIR that the Court did not require to be revised and recirculated. Those sections and discussions are incorporated herein by reference. The Final EIR is on file and available for review at District offices, 1015 7th Street, Novato and online at <https://nUSD.org/departments/maintenance-operations-and-facilities/development-projects/san-marin-high-school-stadium-lights/>.

In accordance with CEQA Guidelines Section 15088.5(f)(2), the District requests that reviewers limit the scope of their comments to the revised portions of this revised EIR.

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2 Aesthetics

This section discusses the project's potential impacts related aesthetics including, visual character and light and glare. In the original EIR, these impacts were discussed in Section 4.1, *Aesthetics*.

The analysis in this section is based primarily on the Sports Lighting CEQA Report prepared by Benya Burnett Consultancy (June 2019), which is included as Appendix B to this EIR; lighting standards, measurements, and concepts referenced in this EIR are contained or referenced in said report.

2.1 Setting

Baseline Visual Character of the Region

The City of Novato is a suburban community in northern Marin County in the San Francisco Bay Area (Novato 1996). Single-family residential neighborhoods with one- and two-story homes predominate, in addition to some multi-family housing that is dispersed mainly along arterial and collector streets (Novato 1996, 2014). Commercial uses are concentrated downtown along Grant Avenue, along Redwood Boulevard, in pockets along Highway 101, and in various small clusters and convenience centers (Novato 1996). Much of the urbanized area of Novato occupies a flat northwest-trending valley that follows Novato Creek, Vineyard Creek, Warner Creek and other tributaries flowing southeast from the hills to the Bay (Novato 2009). The topography of Novato varies from eastern flatlands at the margins of San Pablo Bay to hillsides and valleys to the west.

Scenic natural resources including hillsides, Bay plains, and Bay shorelines frame the City of Novato (Novato 2014). The City finds that views from Novato to the surrounding scenic resources are extremely important to Novato residents. These views provide physical orientation and are integral to the city's character and sense of place. Mt. Burdell, located north of the city, is a natural landmark that dominates views of Novato from U.S. 101 and most areas north and west of State Route (SR) 37. The 1,508-foot-high Mt. Burdell is part of an open space managed by the Marin County Department of Parks and Open Space which offers expansive views of Novato from a number of hiking and biking trails. Hillsides provide a scenic backdrop for developed areas. Designated open space is the largest single land use within Novato's sphere of influence (with 8,383 acres, or 37 percent of total land), followed by residential land uses (8,355 acres, or 37 percent of total land).

While there are no State-designated scenic highways in Marin County, U.S. Highway 101 (U.S. 101) is eligible for State designation as a scenic highway to the north of SR 37 in Novato (Caltrans 2016). This segment of U.S. 101, located approximately 2.3 miles east of the project site, provides scenic views of hillsides and ridgelines to the south, west, and north, and of wetlands and plains connected to San Pablo Bay to the east. The Bay plains are a key component of scenic views from U.S. 101 (Novato 1996).

Baseline Visual Character of the Project Site

San Marin High School is located in a suburban residential neighborhood in northwestern Novato, with single-family residences largely one story in height to the east of San Marin Drive, two-story multi-family residences to the north and northeast, and two-story single-family residences to the

west. The nearest residences are located approximately 120 feet north and northeast of the stadium track. All Saints Lutheran Church is situated to the southeast of the high school, across San Marin Drive (a four-lane road with a tree-lined median). The high school is located at the interface between suburban development and open space. The City's approximately 98-acre O'Hair Park, which includes equestrian facilities at Morning Star Farm, the Dogbone Meadow dog park, and trails through open space areas, is located across Novato Boulevard south of the school. The Dwarf Oak Trail to Mt. Burdell and single-family residences on Sandy Creek Way abut the school site to the west. Open hillsides with grassland and scattered oak trees rise to the north and west of San Marin High School.

The San Marin High School stadium (Mead Field) is at the northeast portion of the campus, with one- and two-story light brown rectangular school buildings and a small surface parking lot to the southwest, a baseball field (Lefty Gomez Field) to the northwest, and a surface parking lot to the southeast. The track and football field at the stadium are elevated approximately 10 to 15 feet above the surrounding parking lots. A retaining wall separates the bleachers at the southeastern side of the stadium from the adjacent parking lot. The northeastern end of the stadium is sunken below the level of multi-family residences to the north by an approximately 25-foot-high grassy berm. A chain-link fence rings the perimeter of the track. The most prominent visual features at the stadium are the relatively flat green athletic field surrounded by a reddish-brown oval track, a mounted scoreboard and flag pole at the southwest end of the field, yellow goal posts at each end, and gray bleachers on both long sides of the field. Mounted Bose speakers in the existing public address system also overlook the bleachers. Figure 1 shows photographs of baseline visual conditions at and surrounding the stadium, taken in 2016 prior to installation of the proposed stadium lighting.

Scenic resources visible from the project site and public viewing locations in its surroundings, as defined in the City's General Plan (adopted 1996), include ridgelines and hillsides that provide a backdrop for developed areas (Novato 1996). Mt. Burdell, a scenic landmark with an elevation of 1,508 feet, is visible to the northeast of San Marin High School. Figure 2 shows existing views of the stadium from the surrounding area. As shown in Photo 3, the Dwarf Oak Trail provides public views looking south toward the stadium. Some nearby residences have views of the stadium. As shown in Photo 4, the stadium's elevated position relative to San Marin Drive and deciduous and evergreen trees in the roadway's median largely obstruct views of the project site from residences to the southeast. School buildings fully obstruct views of the stadium from O'Hair Park to the south. Trees lining the Dwarf Oak Trail block views from residences to the west. A few single-family residences on San Ramon Way to the north have direct southward views looking down on the stadium.

Baseline Light and Glare Conditions

This Revised EIR defines the existing baseline for light and glare conditions as those present when the District released a Notice of Preparation of the original EIR in August 2016, before installation of the proposed stadium lighting system. Light and glare produced by this system are considered impacts of the proposed project and evaluated below in Section 2.2, *Impact Analysis*. As explained in the Methodology section, the impact analysis incorporates actual measurements of light levels generated by use of the stadium lights. As of August 2016, no permanent athletic field lighting was used at the San Marin High School stadium, although the mounted digital scoreboard produced low-intensity light during athletic events. Offsite sources also contribute to existing light conditions (or "illumination") at the stadium. Existing permanent light fixtures are present at the softball field on the southwest portion of the high school, approximately 750 feet southwest of the stadium. Exterior

Figure 1 Photographs of Baseline Conditions at Stadium Site



Photo 1: Northward view across stadium toward single-family residences on San Ramon Way and hillside open space.



Photo 2: View to northeast from stadium of school parking lot, San Marin Drive, and hillside open space.

Figure 2 Photographs of Baseline Conditions from Surrounding Area



Photo 3: Southward view of stadium from publicly accessible open space on Dwarf Oak Trail.



Photo 4: View of stadium to northwest from single-family residences on San Marin Drive.

security light fixtures are located at on-site school buildings and at on-site solar panels. In addition, the stadium receives spillover light to varying degrees from nearby streetlamps and the headlights of cars on San Marin Drive.

Glare refers to the discomfort or impairment of vision experienced when a person is exposed to a direct or reflected view of a light source, causing objectionable brightness that is greater than that to which the eyes are adapted (Pennsylvania Outdoor Lighting Council n.d.). By contrast, illumination is defined as the amount of light that strikes an object, including light cast by sources that are not directly seen by viewers. The intensity of glare ranges from the worst case of “disability glare,” where visibility is lost, to “discomfort glare,” where the light is distracting and uncomfortable. Discomfort glare is a subjective phenomenon and has not been directly linked to a physiological cause (Shuster 2014). The amount of glare depends on a set of factors such as the size of the source, the contrast between background light and the glare source, and the age of the viewer (Hiscocks 2011). General sources of glare at the stadium include headlights on and reflected sunlight from automobiles on adjacent streets and parking lots, and reflected sunlight from the windows of nearby buildings.

Anthropogenic sky glow is caused by all outdoor lighting, including streetlights, retail centers, car dealerships, and other commonly occurring outdoor lighting (Appendix B). In communities near the California coast, there are two types of sky glow: that caused by low clouds (the “marine layer”) and that caused by uplight on clear nights (clear sky glow). The former is localized and on a cloudy night the stray uplight from a town or small city can cause a distinctive glow above it. The latter is the accumulation of the upward light from the entire metropolitan Bay Area and is affected by all the lighting within a radius of 100 miles or more from the viewer’s location.

Sky glow from low clouds varies considerably depending on the time of year, the altitude of the clouds, the cloud density and reflectivity, temperature, and other factors (Appendix B). The primary causes tend to be downtown districts, regional malls, auto malls, and major freeway commercial corridors. Glow is caused by all the upward light from all the community, and not from just one neighborhood or cause. Sky glow levels from the marine layer throughout other areas of California that have similar proximity to the ocean and population density measure between 0.010 and 0.020 foot-candles.

Clear sky glow is measured using the Bortle Scale, a system of ranking the light pollution caused by communities throughout the world as well as identifying “dark sky” areas with little or no sky glow (Appendix B). The astronomer John Bortle originally published this nine-level scale in *Sky & Telescope* magazine in February 2001 (Bortle 2006). The entirety of Marin County is Bortle Class 5, which means a moderate amount of anthropogenic sky glow.

Regulatory Setting

State

Government Code Section 53094. This article of California’s Government Code states that a school district is not required to comply with the zoning ordinances of a county or city unless the zoning ordinance makes provision for the location of public schools and unless the city or county has adopted a general plan. Furthermore, this article authorizes the governing board of a school district to render a local zoning ordinance inapplicable to a proposed use of property by the school district, by a vote of two-thirds of its members. The governing board may not take this action when the proposed use of the property is for non-classroom facilities, including, but not limited to, warehouses, administrative buildings, and automotive storage and repair buildings. Because the

proposed project is considered an improvement to educational facilities at a public school, the governing board of the District adopted Resolution No. 16-2016/17 to exempt the proposed project from local zoning ordinance requirements pertaining to aesthetics and other issues.

Local

Although the District is not required to comply with local zoning ordinances pursuant to Government Code Section 53094, the following regulatory information for the City of Novato is provided for reference.

City of Novato General Plan. The City of Novato's General Plan (1996) does not include objectives or policies applicable to visual character or scenic resources at the school site. While EN Policy 27 (Scenic Resources) in the Environment Chapter of the General Plan seeks to "protect visual values on hillsides, ridgelines, and other scenic resources," this policy addresses development on hillsides and ridgelines rather than scenic views available to or from such resources. The Community Identity Chapter states that "lighting should serve functional, safety, and aesthetic purposes." CI Policy 13 (Lighting Design Guidelines) calls for amending the City's Zoning Ordinance to incorporate design guidelines for exterior lighting that would mitigate impacts on open space or other valuable views. However, this policy has not been implemented (City of Novato 2015).

Novato Municipal Code. The City of Novato's Municipal Code has qualitative standards for light trespass and glare that would apply to the project, except that the District has exempted itself from the local zoning ordinance pursuant to Government Code Section 53094. Pursuant to the general development standards in Section 19.22.060 (Light and Glare), light or glare from exterior lighting must be shielded or modified to prevent emission of light or glare beyond the property line. The placement of exterior lights is required to eliminate spillover illumination or glare onto adjoining properties to the maximum extent feasible, and not interfere with the normal operation or enjoyment of adjoining properties. In addition, Section 19.22.060 requires that all non-essential internal and exterior lighting be turned off after 11:00 p.m. (except for uses with extended hours).

2.2 Impact Analysis

Significance Thresholds

The thresholds below are based on the CEQA Initial Study checklist contained in Appendix G of the CEQA Guidelines. An aesthetic impact is considered significant if the addition of stadium lights would:

- 1 Have a substantial adverse effect on a scenic vista;
- 2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- 3 Substantially degrade the existing visual character or quality of the site or its surroundings; or
- 4 Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

The Initial Study (Appendix A) determined that the project would not damage scenic resources such as trees, rock outcroppings, or historic buildings within a state scenic highway corridor. Therefore, the analysis of aesthetic impacts focuses on thresholds 1, 3, and 4.

Methodology

Scenic Vistas and Visual Character Impacts

The analysis of scenic vistas and visual character is based on a field reconnaissance, supplementary review of Google Maps, and photo documentation of the stadium site. The scenic vistas discussion focuses on identified public view locations, but also considers impacts to private views. The visual character analysis considers whether or not the proposed lighting and public address systems would substantially and adversely degrade the overall aesthetic qualities of the site relative to current conditions.

Light Impacts

Light trespass occurs when lighting systems that illuminate one site also illuminate adjacent sites, such as neighboring private property. Light impacts can be analyzed by quantifying illuminance, or the amount of incident light on a place surface, from the spillover of light at property lines nearest to residences (Pennsylvania Outdoor Lighting Council n.d.). The spillover of light is also known as “light trespass.” Light trespass is measured on both the vertical plane (e.g., light shining through a window) and the horizontal plane (e.g., light falling on a bed), in terms of lux or foot-candles. Lux is the metric measurement of light levels, and approximately 10 lux is equivalent to 1 foot-candle (Appendix B).

The Revised EIR’s analysis of light impacts is based on a lighting study of the proposed stadium lighting system, prepared by internationally recognized lighting consultant James Benya in June 2019 (Appendix B). As discussed in the lighting study, the District has decided to apply a standard set by the International Commission on Illumination (CIE) to limit light trespass. The standard, CIE:150, employs a lighting zone system that ranges from E1 to E4, based on existing ambient light in the general area. For example, in a nature preserve a candle can be seen for a mile, but in downtown San Francisco it would be lost in the haze of thousands of light sources. Lighting zone E1 represents the nature preserve and E4 is the city, with E2 and E3 being steps in between. The choice of lighting zone can be a matter of judgment; the E2 zone is described as “sparsely populated rural areas” and zone E3 is described as “well inhabited rural and urban settlements.”

Although the E3 zone would be appropriate to apply to the project site because nearby light-sensitive residences are located in suburban developments, this analysis makes a conservative assumption that the San Marin High School site is located in the rural E2 zone due to its proximity to a substantial open space area, unique among the School District’s campuses, particular to this analysis and not applicable to the School District, as a whole. The CIE’s allowed maximum light trespass in the E2 zone is 5 lux, which is approximately equivalent to 0.5 foot-candle (Appendix B). In this Revised EIR, the District applies 5 lux as the threshold for significant light trespass at residential property lines. This threshold is more stringent than the 2 foot-candle threshold that the District previously used in the *PBC Parcels 1A and 1B Mitigated Negative Declaration* of June 2006 (NUSD 2006). Furthermore, it is more stringent than thresholds that other school districts have recently applied to comparable lighting projects in California. For example, the Glendale Unified School District has used a standard of 2.5 foot-candles on adjacent properties, while the San Mateo Union High School District has applied a standard of 0.8 foot-candles at the nearest residential property lines (Glendale Unified School District, 2012; San Mateo Union High School District, 2016).

To determine if the proposed stadium lighting system would meet the CIE’s threshold for the E2 zone, the lighting study includes field verification of light trespass from the stadium lighting system. Consistent with the CIE:150 standard, illuminance from the lighting system was measured in the

vertical plane at the property boundary at a height of 5 feet above surface grade (Appendix B). The measurements were taken by James Benya on the evening of Monday, May 6, 2019, and are representative of typical lighting conditions during football games at San Marin High School. They were taken along two lines, one reasonably parallel to the northeast property line, and one southeast of the stadium along the west side of the San Marin Drive median. Each line represents a worst-case scenario for the most affected residential properties. This field verification of light trespass from the project reflects the actual performance of the stadium lighting system. Therefore, it is more accurate than and supersedes the predictive photometric studies that the lighting manufacturer, Musco, provided prior to construction of the project (see Appendix C).

Glare Impacts

This updated, in situ analysis properly uses light intensity as a proxy, representative of the amount of discomfort glare that residents near the stadium site would experience, because the visibility of a distant light source is proportional to its intensity (Hiscocks 2011). Discomfort glare is typically measured in terms of candelas. The amount of candelas depends on the luminous power per unit solid angle emitted by a point light source in a particular direction. In layman's terms, the degree of discomfort glare decreases the further that a viewer is located from a light source, due to the dispersion of light across distance. The lighting study prepared for this Revised EIR makes the conservative assumption that illuminance on the vertical plane of 5 lux or greater at adjacent residential property lines would indicate a potentially significant glare impact (Appendix B). This threshold of illuminance is applied as a reasonable surrogate for glare because direct measurement of glare in the field would be prohibitively expensive and unnecessary. Because glare is a complex sensation that factors in the luminance and size of the light source, the luminance and area of the background, the position of the light source in the field of view, as well as the viewer's unique sensitivity and physiology, it is impossible to measure glare directly except under laboratory conditions. Therefore, it is appropriate to rely on illuminance as an indicator of a potentially significant glare impact.

Sky Glow. Sky glow impacts would be significant if the proposed lighting would emit a substantial amount of upward light, significantly contributing to marine layer sky glow or clear sky glow during nighttime hours.

Project Impacts and Mitigation Measures

Threshold 1: Would the project have a substantial adverse effect on a local scenic vista?
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Impact AES-1 THE ADDITION OF LIGHTS AND LIGHT POLES AT THE STADIUM HAS INCREMENTALLY ALTERED VIEWS OF AND THROUGH THE STADIUM SITE. HOWEVER, BECAUSE LIGHT POLES DO NOT SUBSTANTIALLY OBSTRUCT VIEWS OF SCENIC RESOURCES, IMPACTS TO SCENIC VISTAS WOULD BE LESS THAN SIGNIFICANT.

The project has introduced eight light poles up to ~~80~~90 feet tall to the stadium site, incrementally altering existing views of and through the site. In addition, up to 36 poles (18 egress lighting poles and 18 public address system poles), each up to approximately ~~30-15 to 35~~ feet tall have been installed throughout the project site to provide lighting for safe egress and clean-up and to provide focused, distributed sound during athletic events. These structures do not substantially affect views from scenic roadways. While the segment of U.S. 101 to the north of SR 37 in Novato is eligible for State designation as a scenic highway, this highway is located approximately 2.3 miles east of the

project site; distance, existing trees and vegetation, and intervening hillsides obscure the new light and speaker poles from U.S. 101.

The light and speaker poles would affect views of scenic resources from local residences and parks. To demonstrate the project's effect on views, Figure 3 and Figure 4 show photographs of existing visual conditions after installation of the proposed stadium lighting system. These photographs were taken on a clear day in July 2019. They present approximately the same perspectives as those shown in photographs of baseline visual conditions (from before installation of the lighting system) in Figure 1 and Figure 2. As shown in Photo 8 in Figure 4, residences on the east side of San Marin Drive have views across the stadium to the northwest of hillsides and ridgelines in the Mt. Burdell Open Space area. Existing deciduous and evergreen trees in the median of San Marin Drive partially obstruct these views. In addition, equestrians south of Novato Boulevard at Morning Star Farm in O'Hair Park have similar northward views of hillside, atop the one-to-two-story buildings at San Marin High School. The new light and speaker poles are partially visible in the foreground of views toward scenic hillsides and ridgelines. However, as shown in Figure 3 and Figure 4, the narrow light and speaker poles only occupy a sliver of the overall views through the stadium site from the perspective of nearby residences and parks. In addition, the approximately ~~30~~15 to 35-foot tall egress lighting and speaker poles are similar to poles that were on the stadium site under baseline conditions, such as the speaker poles behind the bleachers on the east side of the stadium, and similar to or shorter and narrower than the existing street lights on San Marin Drive (see Figure 1, Photo 2). The new egress lighting and speaker poles are partially screened by existing trees adjacent to the project site and do not substantially affect views of the surrounding hillsides and ridgelines (see Figure 4, Photo 8). The poles have minimal impact to the overall viewshed from surrounding properties and do not substantially obstruct views of any identified scenic resources. Consequently, impacts to scenic vistas would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Figure 3 Photographs of Stadium Site with New Stadium Lighting System



Photo 5: Northward view across stadium toward single-family residences on San Ramon Way and hillside open space.



Photo 6: View to northeast from stadium of school parking lot, San Marin Drive, and hillside open space.

Figure 4 Photographs from Surrounding Area with New Stadium Lighting System



Photo 7: Southward view of stadium from publicly accessible open space on Dwarf Oak Trail.



Photo 8: View of stadium to northwest from single-family residences on San Marin Drive.

Threshold 3: Would the project substantially degrade the existing visual character or quality of the site or its surroundings?

Impact AES-2 THE PROPOSED LIGHT POLES HAVE INCREMENTALLY ALTERED DAYTIME AESTHETIC CONDITIONS AT THE STADIUM SITE. HOWEVER, THE LIGHT POLES DO NOT CONFLICT WITH THE VISUAL CHARACTER OF THE STADIUM'S VICINITY AND HAVE A NEGLIGIBLE EFFECT ON OVERALL VISUAL QUALITY. IMPACTS ON VISUAL CHARACTER AND QUALITY WOULD BE LESS THAN SIGNIFICANT.

The project has introduced eight light poles up to ~~80~~90 feet tall to the stadium site, incrementally altering existing daytime visual character in the vicinity. In addition, up to 36 poles (18 egress lighting poles and 18 public address system poles), each up to approximately ~~30~~35 feet tall have been installed throughout the project site to provide lighting for safe egress and clean-up and to provide focused, distributed sound during athletic events. As discussed in Impact AES-1, the new light and speaker poles are partially visible from residences on the east side of San Marin Drive and from recreational users at O'Hair Park. In addition, Photo 5 shows that several residences on San Ramon Way have a direct southward line of sight toward the stadium. The light and speaker poles are fully visible to these residences from a distance of at least 225 feet. In addition, Photo 7 shows that people using the Dwarf Oak Trail in the Mt. Burdell Open Space area have direct southward views of the light and speaker poles from a distance of approximately 1,100 feet (0.2 miles). Although the new light and speaker poles are partially or fully visible to neighboring residences and recreational users of open space areas, they are narrow and only occupy a sliver of the overall views through the stadium site. In addition, the approximately ~~30~~15 to 35-foot tall egress lighting and speaker poles are similar to previous poles on-site, such as the speaker poles behind the bleachers on the east side of the stadium, and similar to or shorter and narrower than existing street lights on San Marin Drive (see Figure 1, Photo 2). The new egress lighting and speaker poles are partially screened by existing trees adjacent to the project site and do not substantially affect views through the stadium site (see Figure 4, Photo 8). The light and speaker poles are visually compatible with existing elevated structures at the stadium, including a flag pole at the southwest end of the field, yellow goal posts at each end, and bleachers and mounted speakers alongside the field. The mass, materials, architectural style, and surface treatments of the poles also are typical of elements commonly seen at sports stadiums. Nighttime aesthetics impacts from light and glare are analyzed separately in Impacts AES-3 and AES-4. Therefore, impacts to daytime visual character and quality would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4: Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Impact AES-3 THE PROPOSED PROJECT HAS INTRODUCED A PERMANENT STADIUM LIGHTING SYSTEM TO BE USED FOR SPORTING COMPETITIONS, PRACTICES, AND OTHER EVENTS ON A SITE THAT LACKS EXISTING PERMANENT LIGHT SOURCES. BY DESIGN, THE STADIUM LIGHTING WOULD BE FOCUSED ON THE ATHLETIC FIELD AND WOULD MINIMIZE LIGHT TRESPASS. MEASURED LIGHT LEVELS FROM THE STADIUM LIGHTS DO NOT EXCEED THE CIE THRESHOLD FOR SITES IN THE E2 ZONE. THEREFORE, LIGHT TRESPASS AT PROPERTY LINES FACING RESIDENCES WOULD NOT SUBSTANTIALLY DISTURB RESIDENTS. LIGHTING IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The project has introduced new permanent light sources at the San Marin High School stadium, which lacks existing permanent on-site light sources. Table 1 summarizes the physical features and frequency of use of the proposed lighting system.

Table 1 Characteristics of Proposed Stadium Lighting System

Lighting Feature	Details
Height of Lights	Approximately 30 <u>15</u> to <u>90</u> feet
Number of Light Poles	8 tall poles (up to <u>90</u> feet in height) Up to 18 short poles (up to approximately 30 <u>35</u> feet in height)
Lighting Type	Musco Light-Structure System LED (or equivalent)
Times of Use	Evening football, soccer, lacrosse games; evening football, soccer, lacrosse practices; track meets and practices; Powder Puff game, evening school events such as graduation

As shown in Table 1, the eight new primary LED light fixtures rise ~~to 8~~from 80 to 90 feet in height. Downward-facing luminaires have been affixed at a height of approximately 80 ~~to 90~~ feet on each pole to illuminate the stadium during sport competitions, practices, and other events. Additional downward-facing luminaires are mounted at 70 feet on some poles in order to provide consistent illumination across the field surface. Lower output, upward-facing luminaires are mounted at 20 feet on each pole in order to illuminate airborne objects such as footballs during games. A second set of lower output LED luminaires are installed on up to 18 new and existing poles, each up to approximately ~~30~~35 feet tall. These egress and clean-up lighting system poles are spaced evenly around the perimeter of the track and also along pathways leading to ADA-compliant accessible parking spaces.

The project has introduced a new permanent lighting system to a stadium that lacked existing permanent lighting. When the new lighting system is used for athletic events, it would result in a substantial increase in lighting on the field relative to baseline conditions. However, the proposed type of lighting system (state-of-the-art LED system) is designed specifically to minimize light trespass and would be operated during restricted time frames before normal sleeping hours. First, the approximate 80- ~~to 90~~-foot height of the brightest stadium lights would enable each luminaire to be mounted with a narrow beam angle, which would focus light downward while still covering the athletic field, thereby limiting light trespass at the nearest off-site residences approximately 120 feet away. While it may be counterintuitive that highly mounted light fixtures would reduce light trespass relative to lower fixtures, their narrower beam angle would emit less light visible to neighboring residences. The proposed light fixtures also feature reflectors and visors to block upward light from the brightest fixtures. While lower-output luminaires mounted at 20 feet on each

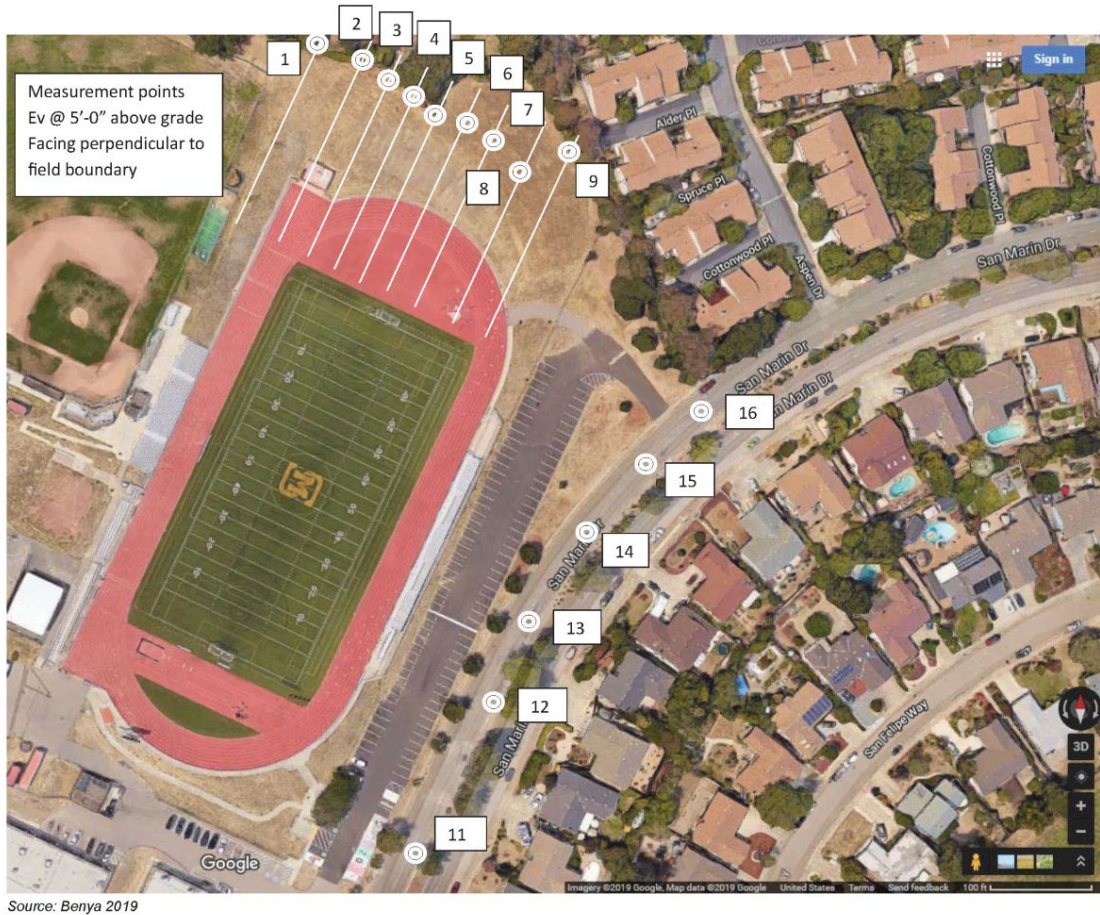
pole would cast light upward, these fixtures would only be lit during games to illuminate airborne objects such as footballs. The proposed stadium lights also would be used only during certain events, as shown in Table 1, with the main lights turned off at set times:

- Evening football games (22 plus any playoff games per year) 8:30 PM on Thursday and by 9:45 PM on Friday
- Evening soccer games (20 on average per year plus any playoff games per year) by 8:30 PM on Tuesday through Saturday
- Evening lacrosse games (13 on average per year plus any playoff games per year) by 8:30 PM on Monday through Saturday
- Evening track meets (two on average per year plus any Track Finals) by 8:30 PM on Wednesday and Thursday
- Scheduled evening athletic practice by 8:00 PM on Monday through Friday
- Evening school events such as graduation by 9:45 PM
- Powder Puff game (one per year) by 8:00 PM on Friday

For further detail on the anticipated schedule of events, refer to Table 3 and Table 4 on pages 25 and 26 of the original Final EIR. The main stadium lights would be turned off by 9:45 PM or earlier, with the rare exception of games that extend to overtime, which could require the continued use of main stadium lights beyond this cut-off time. It is acknowledged that some neighbors of San Marin High School typically go to sleep before 9:45 PM. In addition, stadium lighting would emit light in the blue spectrum, exposure to which can suppress production of the hormone melatonin and impair sleep quality in the evening (American Medical Association 2016). However, the proposed stadium lights' narrow beam angle, reflectors, and visors would minimize the exposure of nearby residents to lighting that could potentially disturb sleep. Furthermore, unlike LED streetlights that are illuminated all night and have generated complaints from residents in cities like Davis, California, and Seattle, the proposed LED lights would be turned off by 8:30 PM most nights and by 9:45 PM fewer than approximately 15 times per year for home football and Powder Puff games. The stadium lights would have a 9:45 PM cut-off time that precedes the Illuminating Engineering Society of North America's identified "post-curfew" hours of 10:00 PM or later, which correspond to normal sleeping hours.

Table 2 shows the results of field verification of illuminance levels from use of the proposed stadium lighting system at property lines facing residences, and Figure 5 maps the locations of these measurements. As shown in Table 2, light trespass at residential property lines would be 2.75 lux at the greatest. This light level would not exceed the CIE threshold of 5 lux for sites in the E2 zone. Therefore, nearby residences would not be subject to excessive illuminance when stadium lights are in use. Although the District has exempted itself from the local zoning ordinance, illuminance also would not exceed the light and glare standards in the City of Novato's Municipal Code. Consistent with Section 19.22.060 (Light and Glare), exterior lights would be designed to minimize spillover onto adjacent properties to the maximum extent feasible, and all non-essential lighting would be turned off prior to 11:00 p.m. Lighting impacts would be less than significant.

Figure 5 Measurement Locations for Light Trespass from Stadium Lighting System



Source: Benya 2019

Table 2 Measured Light Trespass from Stadium Lighting System at San Marin High School

Measurement Location	Illuminance (Lux)	CIE Illuminance Threshold for E2 Zone (Lux)
Northeast Property Line		
1	2.36	5
2	2.17	
3	2.10	
4	2.63	
5	2.34	
6	2.44	
7	2.20	
8	2.75	
9	1.62	
Southeast Property Line		
11	0.54	5
12	1.10	
13	1.19	
14	1.69	
15	1.63	
16	0.85	

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4: Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Impact AES-4 THE PROPOSED STADIUM LIGHTS WOULD NOT GENERATE LIGHT LEVELS THAT COULD CAUSE EXCESSIVE DISCOMFORT COMFORT GLARE FOR RESIDENTS OR DISABILITY GLARE FOR PEDESTRIANS AND MOTORISTS. IMPACTS FROM GLARE WOULD BE LESS THAN SIGNIFICANT.

The proposed stadium lights would generate light intensity on-site at nearby residences, and on adjacent public streets and sidewalks. Light intensity at sports facilities can cause discomfort glare, an annoying or painful sensation when people are exposed to a bright light in the field of view (Shuster 2014). As discussed in Impacts AES-1 and AES-2, nearby residents would have at least partial views of the proposed stadium lights from San Ramon Way north of the stadium and east of San Marin Drive. However, sports luminaires focus most of their light onto the sports field, and off-site glare is usually the result of a luminaire that is mis-aimed towards the property line (Appendix B). Based on the field measurements of light trespass from the proposed stadium lighting system, shown in Table 2 above, the project would not generate illuminance on the vertical plane exceeding

5 lux at adjacent residential property lines. Therefore, the stadium lights would not subject nearby residents to excessive discomfort glare, nor would it expose pedestrians and motorists outside the stadium to “disability glare” that reduces visibility. The project would have a less than significant impact from glare.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

Impact AES-5 THE PROPOSED STADIUM LIGHTS ARE SHIELDED AND THE BRIGHTEST LIGHTS WOULD BE DOWNWARD-FACING TO REDUCE LIGHT TRESPASS. UPWARD-FACING LIGHTS WOULD ONLY BE USED DURING GAMES AND WOULD BE DESIGNED TO PROVIDE ONLY THE MINIMUM AMOUNT OF ILLUMINATION NECESSARY TO SEE AIRBORNE OBJECTS IN THE STADIUM. THEREFORE, THE PROJECT WOULD NOT SUBSTANTIALLY CONTRIBUTE TO MARINE LAYER OR CLEAR SKY GLOW. IMPACTS FROM SKY GLOW WOULD BE LESS THAN SIGNIFICANT.

As discussed in Impact AES-3, the proposed stadium lighting has been designed to minimize light trespass. The approximate 80-to 90-foot height of the brightest stadium lights would enable each luminaire to be mounted with a narrow beam angle, which would focus light downward, thereby limiting light trespass outside the athletic fields and reducing sky glow. The proposed light fixtures also feature reflectors and a visor to block upward light. Although lower-output luminaires have been mounted facing upward at 20 feet on each light pole and would incrementally increase sky glow when in use by reflecting light off clouds and aerosols, these lights would only be used during games and would be designed to provide only the minimum amount of illumination necessary to see airborne objects in the stadium.

The lighting report prepared for the project evaluated the proposed stadium lighting system’s contribution to both marine layer sky glow and clear sky glow. A marine layer was present in Novato on the night of lighting measurements in June 2019 (Appendix B). Sky glow illumination near the project site, in an area that the stadium lights could not directly illuminate, measured 0.016 foot-candles. This lighting level is typical of sky glow when a marine layer is present near the coast in California, which measures between 0.010 and 0.020 foot-candles. The stadium lights did not substantially contribute to sky glow produced by the greater community. Moreover, the lighting report determined that the stadium lighting does not contribute enough uplight to affect clear sky glow in Marin County.

The timing of stadium lights would also limit their contribution to sky glow. The use of all stadium lights would be limited to approximately 152 nights of the year, approximately 83 of which would be games (this estimate includes the maximum number of playoff games that could be played in any given year). For most lighted evenings, the lights would be turned off by 8:30 PM or earlier. For approximately 15 or fewer nights per year, the lights would be cut off by 9:45 PM in the evening. The minimal amount of sky glow that would be introduced with installation of the proposed lighting system would be limited to early evening hours (typically before 8:30 PM), would occur for a

maximum of 152 nights per year, and would occur in a location with existing nighttime lighting (including street lamps along the adjacent roadway and security lighting on the adjacent campus).

Therefore, the proposed stadium lights would not substantially contribute to sky glow during sensitive nighttime hours, and impacts would be less than significant.

Mitigation Measures

No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

January 28, 2024

To: Shraddha Navalli Patil, Senior Planner
Planning and Capital Projects

From: John Stenzel
6 Mosswood Road
Berkeley, CA 94704

RE: Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project

Thank you for soliciting public comment on the latest installment of the University's development plans--in this case, for the women's softball complex. Over my 31 years living near the second hairpin (Panoramic and Mosswood) I have seen how much the UC has ratcheted up the use of the rugby field and the women's softball facility, as well as the nearly half a billion dollar investment in Memorial Stadium and the High Performance Athletic Facility and the parking garages and on and on and on. For each incremental increase in construction noise, traffic congestion, light pollution, etc., we have seen a parade of DEIRs that low-ball the impacts, and none of these DEIRs contains an honest and complete discussion of alternatives, a fundamental tenet of CEQA compliance, nor a realistic analysis of the cumulative impacts of low-level noise on the mental and physical health of residents subjected to frequent bursts of stress-inducing noise pulses.

C1-1

The current DEIR for the building of a top-class softball stadium (let's not sugar-coat this with "renovation of a field" nonsense) is no exception. In dismissing every other possible location, section 6.3.2 takes less than a page from the 300+ page document to dismiss every other siting alternative with what amounts to "This site would be not be possible because the NCAA requires X or Y" or "This site would be inconvenient for our athletes to walk to" (although most athletes use scooters and never stop at stop signs). Once again the longtime property owners in the neighborhood will pay a continuing price so that a few dozen athletes and their thousands of supporters can practice and play and party in a multimillion-dollar facility, located in a bottleneck of severely reduced road access, with a canyon chock-full of wildfire-prone unmaintained vegetation just above it and already-congested streets below. What could possibly go wrong?

C1-2

The University has paid millions, no doubt, for consulting firms to write copious reports based on mistaken assumptions. Let's look at just one—the noise calculations. High levels of noise are harmful, no one would dispute that, so the noise reports all track high-decibel intrusions (and analyze ground vibration for many many pages) before concluding that the current project will have no adverse effects. From what I can gather, much of these calculations involve averaging over the course of a day, thus smoothing out whatever data the microphones on Mosswood Road neighbors' back decks might pick up (section 4.5.3)

C1-3

Yet despite plenty of medical evidence that moderate and low level noise intrusion causes cumulative impacts on mental and physical health, I see no analysis of an important contribution to stress from the construction projects and from the ongoing increased traffic that thirty or more softball games will bring: no one seems to acknowledge the ubiquitous noise pollution of hundreds if not thousands of backup beepers. The impact on access to emergency vehicles through the Rimway / Gayley Road / Prospect corridors is similarly given short shrift, and it's

C1-4

C1-5

important to realize that thousands more vehicle trips will be expected for each of 30-50 games each year, no doubt not coordinated with Greek Theater events that already create nightmarish traffic scenarios in the same zone.

C1-5
Cont.

As anyone who lived through the yearslong Memorial Stadium debacle will remember, every piece of construction equipment, all the concrete trucks, every tradesperson's truck, brought a dozen or more piercing alerts that wafted up the hill into our consciousness. No these were not high-decibel events that Dudek measures so carefully, but OSHA no doubt requires these noisemakers *to alert nearby people, to put them on notice of potential danger!* And they work, insidiously and suddenly, even as the workers themselves have learned to ignore them. Your construction projects and facilities improvements come with a cortisol delivery instrument that penetrates each neighbor's home, and not just during daylight hours: despite UC's assurances, we had plenty of 4AM deliveries throughout the stadium retrofit.

C1-6

For every football game we have another dose of TV trucks, delivery trucks, catering trucks, emergency vehicles—but “only” pre-game and game-day and post-game for a handful of games each season. But now in the even more constricted echo-chamber of lower Strawberry Canyon we are expecting to have thirty or more of these games each season, plus tournaments, plus night games with 1500-2000 spectators! Yet your “analysis” makes no mention of these cumulative impacts. From what I can discern from your flurry of charts and graphs, “ambient” analysis smoothes out the peaks and downplays the impacts of short intervals of not-especially-loud but nevertheless designed-to-catch-our-attention sounds that degrade and pollute the sonic environment for everyone within earshot.

C1-7

As I've said in previous comments on DEIRs, I have a modest proposal to at least share the pain: if indeed these endless and ubiquitous beepers are inconsequential and not even worth mentioning, why not have a few hundred UC and Dudek employees accept a 24-hour speaker in their homes and offices, with a microphone mounted on the back deck of an upper Mosswood home? With each truck you will hear what we hear, an alert that stimulates our reptile brains to pay attention to a potential danger, a microdose of cortisol that corrodes our daily lives. If this is harmful or hateful to you, consider that this is what you are proposing for us. If it is truly inconsequential, you shouldn't mind—it's what you are offloading onto neighbors.

C1-8

I should note that construction noise is only a small part of the problem: as I've noticed this year, for several hours each afternoon throughout the offseason, athletes using the batting cage can't seem to practice without amplified music thundering up through the natural amphitheater. This is in keeping with the practice of playing music throughout pregame and during the game and between innings, since these athletes can't possibly perform without having their personalized “walkup music” blaring for each at-bat, just like the big boys!

C1-9

Let each person supporting this project carry this noise into your homes and bedrooms each night until 11 PM on all of the 20 or 30 or 50 game days each year that follow. If you agree to that, all you athletes and parents, chancellors and planners, coaches and cheerleaders for women's athletics and champions of gender equity, I guarantee that you will better understand why we, your closest neighbors, do not embrace your vision for our future.

C1-10

Thank you for reading. Let me know when we can set up that microphone.



Planning Departmental <planning@berkeley.edu>

Lighting arrays at Strawberry Canyon rugby and softball facilities

Michele Liapes <maliapes@gmail.com>
To: planning@berkeley.edu

Sun, Jan 28, 2024 at 3:59 PM

To the City of Berkeley Planning Commission: .

As a UC Berkeley alumna, I am writing to express my strong opposition to Campus plans to upgrade the rugby and softball facilities in Strawberry Canyon with expanded new lighting. First of all, I suggest that there is not enough interest in either rugby or softball to justify the new lighting for TV purposes, especially in the wake of the breakdown of the Pacific 10 conference. Second, and most important, such artificial lighting has the almost certain potential to adversely affect nocturnal wildlife elsewhere in the canyon, particularly nesting owls.

Please do not give this Commission's approval to new and unnecessary development that would so negatively affect a thriving and productive wildlife community nearby. We need these, and, once we've destroyed them, they're gone forever.

Thank you in advance for your consideration.

Sincerely,

Michele Liapes

C2-1

C2-2

C2-3

1/29/24, 6:26 PM

UC Berkeley Mail - Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project



Planning Departmental <planning@berkeley.edu>

Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project

Stefanie Pruegel <stefanie.pruegel@gmail.com>
To: planning@berkeley.edu

Sun, Jan 28, 2024 at 10:38 PM

To whom it may concern:

I am extremely concerned about the massive new lighting arrays to enable TV broadcast of 21-25 night games per year that the UC is planing to install at Strawberry Canyon. This will result in light and noise pollution well beyond the actual stadium area, disrupting and further marginalizing nocturnal wildlife in the Canyon. This goes well beyond the wood rat being negatively impacted and includes owls, bats and countless other wildlife, even insects. I find the attention to these matters in the DEIR highly inadequate. The plan also completely neglects to address the risk of wildfire which is greatly increased by the anticipated traffic and activities. The project is located in a Very High Fire Hazard Severity Zone - a fact conveniently disregarded in the DEIR.

I strongly oppose the project and urge the responsible parties to reconsider.

Sincerely,
Stefanie Pruegel
East Bay resident

C3-1

C3-2

1/29/24, 6:21 PM

UC Berkeley Mail - Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project



Planning Departmental <planning@berkeley.edu>

Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project

1 message

James Isbester <aji1076@gmail.com>
Reply-To: James Isbester <aji1076@gmail.com>
To: planning@berkeley.edu

Mon, Jan 29, 2024 at 4:14 PM

To whom it may concern:

I am a neighbor of the University of California, Berkeley campus and have been since the early 1980s. I have seen the University impose many "renovations" on the community and the landscape since then. From that vantage point, the Draft EIR's treatment of cumulative effects would be comical were it not so disrespectful and, quite simply, wrong. Specifically:

C4-1

Impact Bio-5. Prior to the Clark Kerr campus and the development of the existing softball and rugby fields, the area between Centennial Drive and Claremont Avenue contained few impediments to the movement of wildlife and little light pollution. Through extensive fencing on the enlarged Strawberry Creek facilities, the Clark Kerr Campus, facilities associated with the Clark Kerr Campus, and portions of the Botanical Garden, wild life corridors of movement have been restricted and, essentially pushed up further into the hills. The extensive lighting that has already been added to the rugby and softball fields as wells as the Botanical Garden substantially changes the night time nature of the region, with consequences for nocturnal and diurnal wildlife alike.

C4-2

Now, the University proposes even more traffic and human activity along Centennial Drive. Events likely to be disruptive to wildlife have grown from the episodic football game traffic to something that occurs more often than not. The purpose of the expansion the University now proposes is to support a range of activities that will essentially be constant, and without season. Furthermore, the expansion of lighting will turn night into day even more effectively and for many more days a year. It may not seem like a substantial change over what exists now, but it is a significant change over what existed even twenty years ago.

C4-3

C4-4

Impact Noi-3. Cumulative noise impacts. This conclusion is simply farcical. Anyone familiar with this area of Berkeley in the 1990s would agree that there has been a tremendous increase in the amount of disruptive noise generated in an ongoing manner by the expansion of the University's facilities. The study's conclusion that the cumulative impact is not significant can only be some kind of arithmetical game. For example, if the current noise level is disruptive 100 days of the year and it is only going to be increased to 110 days, perhaps the proposed expansion is not, by itself, significant. But if the question is what is the cumulative effect, then we must compare it to the status quo ante, in which the noise level was disruptive on only 30 days of the year (i.e., football games and the occasion concert in the stadium). Seen against that sort of template, suggesting that the University's expansion is not part of a cumulative impact on noise is ridiculous.

C4-5

There are many other ways in which the Draft EIR simply ignores the reality of what has happened in this area over the past 4 decades. But I will leave it to others to address those.

C4-6

Regards,

James Isbester
299 Panoramic Way
Berkeley, California, 94704

6/6/24, 4:46 PM

UC Berkeley Mail - Request for documents incorporated by reference in the Draft EIR



Planning Departmental <planning@berkeley.edu>

Request for documents incorporated by reference in the Draft EIR

Janice Thomas <mountainlionsandbears@gmail.com>
To: UC Berkeley Planning <planning@berkeley.edu>

Fri, Dec 29, 2023 at 12:14 PM

Greetings.

This is to request assistance accessing documents which have been incorporated by reference in the Draft EIR on the softball field renovation project.

The documents which I need to review include the following:

- A3 GEO. 2018. Geotechnical Investigation Report. Levine-Fricke Softball Investigation Report. University of California, Berkeley. Draft. August 13, 2018.
- EBMUD. Letter from David J.h Rehnstrom, EBMUD to Shraddha Navaili Patil, UC Berkeley, regarding the "notice of availability - addendum to the 2020 Long Range Development Plan EIR for the Levine-Fricke Softball Field Improvements Project." January 13, 2020.
- UC Berkeley. 2014. "Emergency Operations Plan (EOP)."

Thank you.

Regards,
Janice

--
Janice Thomas

C5-1a

JANICE THOMAS

Berkeley, California
January 29, 2024

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

Sent via electronic mail to planning@berkeley.edu

Dear Ms. Patil,

I am concerned about the adequacy of this study. Although the document is long, it lacks the substance one would need to evaluate the project in its environmental context.

C5-1b

At the start, the Project Location does not adequately convey information which decision-makers would need to decide if this is a good investment in the fiscal sense or otherwise. Key information which should probably be included on any ticket that a potential spectator buys, or presented to any investor or donor, and especially at the start of a 364-page tome, should relay the hazards of this precarious site. For starters, it is located in the least accessible part of Berkeley.¹ It is just east of the Hayward Fault, in a landslide area, and the new structures will be built in a liquefaction zone.

C5-2

The project location is also distinctive in other ways for what is not mentioned or left ambiguous. On the south-facing side of the canyon hillside is Lawrence Berkeley National Laboratory. On the north-facing side of the canyon hillside is Panoramic Hill. As described, the proximity is vague. In fact, the closest house is 90 feet from the closest point of the football field².

C5-3

Although the land use zone is classified as Hill Campus West, the context is not the Greek Theater or Bowles Hall. The context is the canyon and the hillside residential neighborhood. None of the other buildings in the HCW are in the canyon.

The area is state-designated as a Very High Fire Hazard Severity Zone (VHFHSZ). The fact that the proposed project is located in a VHFHSZ was mentioned one time in the DEIR.

C5-4

The proposed project is surrounded on the south, the north, and to the east by the Hill Campus East and the Ecological Study Area. The juxtaposition of the proposed facility and the natural environs illustrates an insensitive relationship. Uses have heretofore been relatively low impact in comparison to the proposed. The hillside neighborhood within 90 feet of the existing field is

C5-5

¹<https://www.google.com/maps/@37.8688568,-122.2883345,14z?authuser=0&entry=ttu>

² Levine-Fricke Softball Field Improvements Project, July 2020, Addendum, page 21.

listed on the National Register of Historic Places in celebration and appreciation for an architectural style which celebrated natural materials and the natural environment.

↑ C5-5
Cont.

Throughout the document key information is minimized. One of these is that the proposed project introduces night games into Strawberry Canyon and as many as 21-25 night games. There are no night games at Witter Rugby Field and there are no largescale, noisy, disruptive, routine, nighttime activities at the Strawberry Canyon Recreation Area. This is a new and disturbing use.

The scope of this project includes changes in use, specifically, the schedule of night games where the baseline, as reported, was one night game in the intercollegiate softball field's history. The 10:00 p.m. schedule of field closure is dependent upon on games being over, tie games being resolved, and all of the various business and cleanup operations being ended too. This seems unlikely.

C5-6

As stated, the proposed new buildings and structures support a regular and routine program of night games where none exists currently. The DEIR mentions one night game in the softball field's history.

It is one thing for there to be multiple intercollegiate facilities near this hillside neighborhood. But night games at the stadium introduced problems we had never before experienced, and likewise, night games at the softball field will create yet a new set of problems.

The DEIR states that the city's Community Noise ordinance will be followed, that the city's General Plan Transportation Element will be followed, but the environmental review document suggests otherwise.

C5-7

Post-season games, and hence the number of additional night games at the new facility, are dependent upon the team's rank at the end of the season. Given the softball team's track record, it highly likely the maximum number of games will be played at Cal. "The Bears are consistently ranked in the top 25, have reached the postseason for 27 straight years, have reached the Women's College World Series 14 times (11 NCAA, 3 AIAW),^[2] and have won 1 Women's College World Series Championship in 2002.³"

C5-8

It bears mentioning that the proposed project is more than a field renovation. Moreover, the project was filed at the Governor's Office of Planning and Research as "redevelopment."

C5-9

The site for the proposed project is extremely complex. Through methodological wizardry, only one category of impacts – Transportation/Vehicle Miles Traveled – is considered significant and unavoidable. A more robust analysis might show multiple impacts which as a whole are greater than the sum of their parts.

C5-10

³ https://en.wikipedia.org/wiki/California_Golden_Bears_softball accessed 1/28/24

In general, the methodology bears scrutiny. One curiosity is the use of past seating capacity of 1,340 – inflated with temporary seating – as the baseline for analysis when the spectator attendance average was 500 people.⁴

C5-11

And there are ambiguities, such as this: “The use of the softball facility would remain *largely similar* to current uses...(emphasis added).⁵”

AESTHETIC IMPACTS –

Skyglow unanalyzed.

The DEIR did not evaluate the effect of skyglow. By not evaluating skyglow, the DEIR eliminated this data as a condition which would have at least two effects. One is the effect on scenic vistas and two is the indirect effect on cultural resources.

The competition-grade lights are 70 footcandles in the outfield and 100 footcandles for the infield (horizontal illuminance). By way of comparison, Game Day lighting at Memorial Stadium – at “horizontal illuminance” – is 125 footcandles. During security and maintenance, lighting is 20 footcandles.⁶

C5-12

Please see the attached photograph for an illustration of Skyglow from stadium lights at 6:38 a.m. on 1/25/24.

The photograph was taken from the sidewalk at the top of Bancroft Steps, facing north toward Memorial Stadium’s southern façade with the bright hillside known as Tightwad Hill in the background. The silhouette of the hillside known as Panoramic Hill appears to be touching the stadium and is in complete darkness as would be expected at this hour on a winter morning.

Skyglow is not masked by foliage in trees. It illuminates an entire area and creates the illusion of daylight. Lighting which is used at night but that approximates daytime is not restful or semi-rural or compatible with the woodland setting that is most dense at the south of the site, evident in riparian areas especially to the north of the site, and to the dense woodlands in the Ecological Study Area.

Effect of night games.

C5-13

The effect is worsened by the frequency of having 21-25 night games through the length of a semester and concentrated at the end with tournaments and post-season games. These events occur on week nights and not only weekends. The effect of 21-25 night games compared to zero night games has not been analyzed.

There might also be aesthetic impacts from the recessed lights which will be added in areas of public circulation. It is unclear how many lights will be added, and thus, the potential impact is

↓ C5-14

⁴ DEIR Cal Softball Field Renovation Project, page 4.6-21

⁵ Notice of Availability of DEIR Cal Softball Field Renovation Project 12/13/23

⁶ Draft Environmental Impact Report Southeast Campus Integrated Projects (2006) p. 3-27.

not adequately analyzed. If there are lights, they would preferably be angled downward, as they are reported to be. But the question of relevance involves a comparison between the existing number of lights compared to the proposed number of lights. Will the lights look like an airport landing strip?

C5-14
Cont.

Impact on hillside residents.

In the existing conditions, there are four light towers, 50-feet tall, and support 1,000 watt light fixtures. The lights measure around 20-30 footcandles. The portable lighting structures are 53-feet tall and support 1,500 watt light fixtures. In contrast, in the proposed conditions there would be six poles with light mountings reaching 70 to 90 feet tall. The average footcandles in the outfield would be 70 and the average footcandles in the infield would be 100.

C5-15

The DEIR describes Panoramic Hill neighborhood as being “southwest” of the project site. By omission, this is an error. The Panoramic Hill neighborhood is also south of the project site, e.g., 299 Panoramic Way. The scope of the Aesthetic analysis should include the part of the neighborhood which is due south of the project if it has not already done so.

C5-16

BIOLOGICAL RESOURCES –

Inadequate methodology: BSA too small.

The methodology which was used to study biological resources identified a Biological Study Area (BSA) and then looked for candidate, sensitive, or special-status species within it. The BSA was defined as “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.”⁷

C5-17

The study area was too small to identify potentially impacted species. Potential impacts from noise and light could easily extend beyond 500’ from the proposed project.

Exclusion of legitimate corridor.

The methodology studies wildlife movement corridors by referencing a wildlife movement corridor which has been mapped while failing to apply definition and criteria to recognize a wildlife movement corridor which exists in the Hill Campus East and which is contiguous with the project site. This would be the Ecological Study Area^{8 9} which is contiguous with the softball field on the south and is across the street from Centennial Drive to the north of the project site. The ESA extends to, and is inclusive of, the Upper Strawberry Canyon, which is referenced below.

C5-18

⁷ page 4.3-1

⁸ UC Berkeley Hill Campus Working Paper (2002), Figure 2. Hill Campus Land Use – 1990 LRDP.

⁹ Ibid. Figure 3. Hill Campus Land Use – 2020 LRDP.

The DEIR states, “The project site and BSA (Biological Study Area) are not located in any established wildlife movement corridors.”¹⁰ Yet the DEIR mentions a “critical linkage mapped by Penrod et al. (2013) (and which) 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... bobcat, and black-tailed deer, but it is also intended to serve several other species, such as American badger... brush rabbit...California quail... loggerhead shrike... California red-legged frog... white-tailed kit, Wrentit, and Alameda whipsnake.”¹¹

C5-18
Cont.

The DEIR did not report examination of the Ecological Study Area. A review of Figures 2 and 3 of the Hill Campus Land Use Map shows the ESA on both sides of the canyon and within 500’ of the project site.

C5-19

Please see recent photographs, dated 12/28/23, of two tributaries, one of which is Chicken Creek near the former Poultry Husbandry Building in Strawberry Canyon. Both creeks are within 500-feet of the project site. Please see the Helios EIR¹² for a description of biological resources in Chicken Creek.

C5-20

The two tributaries flow from the south-facing slope of Strawberry Canyon and are culverted underneath Centennial Drive where they connect to the Strawberry Creek culvert.

C5-21

Inadequate survey.

Were the riparian areas studied? It would seem they would have been included since they are located within the 500’ buffer. The one-and-a-half hour survey was conducted on 9/15/22. An hour and a half field survey from 9-10:30 a.m. is insufficient to study both the project site and a 500-foot buffer around the site. Moreover, despite the proposed project first being announced in 2018, there is just this single sampling of biological resources which occurred during a fall morning. Variation by season and time of day might have yielded different results. A sample size of one is inadequate.

C5-22

The DEIR concludes that the only potential impact is to the San Francisco dusky-footed woodrat, and that this effect can be mitigated. The DEIR identifies no other species of concern.

C5-23

Inappropriate removal of coastal live oak-bay woodland flora.

According to this interpretation of the Wildfire Vegetative Fuel Management Plan,¹³ vegetation would be removed 100’ from the project site. Yet south and southwest of the project site are

C5-24

¹⁰ Ibid. page 4.3-16

¹¹ Ibid. page 4.3-16

¹² <https://ceqanet.opr.ca.gov/2007072107/2>

¹³ See 4.7 – 31, footnote. “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.”

coast live oaks which are “native trees in the Bay Area, and are well-adapted to fire conditions.”¹⁴

↑ C5-24
Cont.

CULTURAL RESOURCES –

The DEIR failed to examine the impact on Strawberry Canyon as a potential cultural landscape and the impact on a historic district listed on the National Register of Historic Places, the Panoramic Hill Historic District¹⁵.

Cultural landscapes.

Cultural Landscapes are a category of historic resource described by the National Park Service and the National Register. <https://www.nps.gov/subjects/culturallandscapes/understand-cl.htm> <https://www.denix.osd.mil/legacy/denix-files/sites/33/2022/01/Perspectives-in-Landscapes-Paper-2006-Legacy-06-294.pdf> The absence of any study or consideration of Strawberry Canyon as potentially eligible as a cultural resource is a significant omission.

Strawberry Canyon holds much of California's history. Writings by the Berkeley Architectural Heritage Association (BAHA) about the landscape potential provide a deeper awareness of the state's culture and history. Various events are memorialized through the setting and the experience of being in these wilds, which have been sustained by virtue of moderating use and development over the years.

C5-25

There is the Stephen Mather Redwood Grove (1st Director of the National Park Service), the University's Botanical Garden, Julia Morgan's Senior Women's Hall, which is located at the Botanical Garden, the history and creation of the Ecological Study Area, the Wurster, Bernardi, & Emmons designed Haas Club House at the Strawberry Canyon Recreation Area. These resources are documented in a newsletter of the Berkeley Architectural Heritage Association (BAHA)¹⁶. Other BAHA newsletters which describe Strawberry Canyon for its potential as a cultural landscape worthy of landmarking are found in the Summer of 2007¹⁷ and the summer of 2008¹⁸ newsletters. BAHA also hosted an event with Charles Birnbaum¹⁹, a nationally recognized expert on cultural landscapes.

BAHA's letter to Lawrence Berkeley National Laboratory about the impacts from the proposed Helios building also provides additional information about the canyon's resources as a cultural resource. https://berkeleyheritage.com/helios_baha_letter1feb08.html

¹⁴ <https://oaks.cnr.berkeley.edu/assessing-fire-damaged-coast-live-oaks-2/#:~:text=Effect%20of%20Fire%20on%20Oaks,well%2Dadapted%20to%20fire%20conditions.>

¹⁵ <https://npgallery.nps.gov/GetAsset/1f8ae583-b015-4cd8-a8ad-15573cdc7bd1>

¹⁶ Fall-2007/Winter 2008 Newsletter. <https://berkeleyheritage.com/newsletter/127.fall-winter2007-08.pdf>

¹⁷ <https://berkeleyheritage.com/newsletter/126.summer2007.pdf>

¹⁸ <https://berkeleyheritage.com/newsletter/129.summer2008.pdf>

¹⁹ https://en.wikipedia.org/wiki/Charles_A._Birnbaum

Key figures in the Sierra Club's early history used to live in the Panoramic Hill Historic District (Marion Randall Parsons and Edward Taylor Parsons), or the vicinity (William Colby and Joseph N. LeConte). <https://www.sierraclub.org/library/key-figures-sierra-club-history> Hill resident Lincoln Hutchinson co-founded the Sierra Ski Club, and a lodge was named after him.²⁰ Their architecturally-distinguished houses reflected a lifestyle which invited the outdoors inside rather than shuttering it outside as was done during the Victorian era preceding Arts and Crafts design.

C5-25
Cont.

Architectural resources of distinction (National Register) in the vicinity include Memorial Stadium, which is at the mouth of the canyon, Bowles Hall on the west facing hillside just outside of the canyon, and the Greek Theater, which was designed by Julia Morgan, on Gayley Road.

Strawberry Canyon still has integrity of setting if only the land use is not urbanized. Night games are grossly artificial which is the antithesis of the values represented in Strawberry Canyon's history. Skyglow urbanizes the environment which is in contradiction to the rustic nature of the canyon's trails and environs.

C5-26

The cultural resource impact analysis was also inadequate for failing to consider the effect of the project on the Panoramic Hill Historic District, which functions as a residential district ("domestic – single and multiple dwellings). The proposed project is within 90 feet of the historic district.

"Under criterion C, Panoramic Hill is significant in the area of architecture as a neighborhood that represents the Bay Area Tradition²¹ in architecture, primarily the first phase associated with the Arts and Crafts Movement.²²" The historic district is profoundly linked to the canyon environs by shared history and values reflected in the district's architecture.

C5-27

Importantly, the impact is to the district as a whole and not to any individual structure in the district. Integrity of setting would be lost from light and noise impacts which would create a more urbanized environment.

C5-28

In short, the DEIR erred in not evaluating the effect on the visual character of Strawberry Canyon and how it would impact its potential as a cultural resource. Neither did the DEIR consider the integrity of setting and association of the Panoramic Hill Historic District.

GEOLOGY AND SOILS –

Strawberry Creek has flooded the Strawberry Creek Recreation Area. One notable occasion in 1962 led to "(t)he pool deck (being) buried under six inches of mud... The pool itself was filled with muddy water and debris.²³" More recently, the upper pool at the Strawberry Canyon Recreation Area was closed after a soil event (either due to rain or landslide) in which the upper

C5-29

²⁰ <https://www.clairtappaanlodge.com/hutchinson-lodge>

²¹ https://en.wikipedia.org/wiki/First_Bay_Tradition

²² <https://npgallery.nps.gov/GetAsset/1f8ae583-b015-4cd8-a8ad-15573cdc7bd1> section 8 page 1

²³ Finacom, Steven (Spring, 1998). The Strawberry Creek Flood of 1962. *Chronicle of the University of California*. Pages 107-109.

pool was closed. Was the pool contaminated by hazardous and/or toxic substances from one of the tributaries flowing from the Lawrence Berkeley National Laboratory?

The university has documented issues related to soils and creeks and the interaction thereof²⁴.

Recently, the hillside on the northside of Centennial Road and across from the Witter Rugby Field and at a diagonal to the existing softball field had more than one landslide. The area is covered over with fabric of some kind and is now 154' in length. Attached please find a photograph for your review.

The relevance of landslides is the potential to further compromise ingress and egress. There are, in other words, potential transportation impacts due to geological and soil conditions.

Geology and Soils were studied in the Initial Study and impacts were deemed "less than significant." The only area for which there was "no impact" was the capacity of the soils to support the use of septic tanks if sewers were not available.

It is noted that "the project site is located approximately 700 feet east of the Alquist-Priolo Earthquake Fault Zone for the Hayward fault...(that) (t)he project site overlaps with the liquefaction hazard zone along the western portion of the site and an earthquake-induced landslide zone lies beyond the project site's southern boundary... Liquefaction zones are described as areas where historical occurrence of liquefaction or local geotechnical and ground water conditions indicate a potential for permanent ground displacements."²⁵

It is also noted that "soils at the project site consist of an artificial fill topsoil layer (ranging between approximately 2 feet to 38 feet below ground surface, underlain by natural alluvium/colluvium deposits (2 feet to 27 feet) and bedrock of the Great Valley Complex (20 feet to 470 feet)."²⁶ Has site-specific testing been done to determine what type of soil is underneath the area where the heaviest structures will be built? If so, please provide the documentation including the geotechnical investigation report (A3GEO 2018) listed.

It is furthermore noted that "(g)roundwater was not encountered in exploratory borings at the project site during the subsurface geotechnical boring..."²⁷ It is noted that "(g)roundwater levels can fluctuate significantly with location, season, precipitation, leakage in and out of utilities, and other factors."²⁸ During what month was the testing conducted?

"The south- and west-facing slopes north of Centennial Drive are much drier than those to the south... Much of the area north of Centennial Drive was created by fill excavated during construction of Memorial Stadium or Centennial Drive ..."²⁹

C5-29
Cont.

C5-30

C5-31

²⁴ <https://creeks.berkeley.edu/strawberry-creek-management-plan-1987/363-storm-drainage-system>

²⁵ Cal Softball Field Renovation Project Initial Study (November 2022). Page 28.

²⁶ Ibid. page 28.

²⁷ Ibid. page 28.

²⁸ Ibid. page 28.

²⁹ DEIR Cal Softball Field Renovation Project, page 4.3-7,8

The field itself is in a liquefaction zone which is problematic from the standpoint of supporting the structures. There will be a stadium with a capacity for 1,511 spectators, as well as other structures, e.g., a stadium concourse³⁰. Does the University of California Seismic Safety Policy allow the construction of buildings in liquefaction areas which are as large as the proposed project structures? Will the concourse be on top of the stadium? Please provide a figure which shows the perspective from ground level.

C5-32

The proposed project will need to have utilities built which will have connections to existing utilities.

“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.”³¹ (emphasis added)”

C5-33

Where it is stated that average attendance is 500 and that average anticipated attendance is 1000, which doubles the attendance, the impact hardly seems “marginal.”

Attached please find attached a letter from Professor Emeritus Garniss Curtis who objected to the construction of buildings at some locations at the Lawrence Berkeley National Laboratory site. Also attached is the Regents’ decision to decertify the Helios EIR, which would have allowed the construction of a building near Chicken Creek. These observations might be relevant to the proposed project, and thus, I am including this information.

C5-34

Attached is a map of the Hayward Fault and the liquefaction area north of the fault line in the location of the proposed project.³²

C5-35

Of concern then are several scenarios. One is that the sliding hillside on the northside of Centennial Drive will interfere with access to the proposed project. Secondly, the concern is that the soil characteristics at the site of the heaviest structures will not support construction and remain stable over time. Has the University conducted any geologic studies to determine the viability of building the proposed structures and holding the anticipated number of people in a liquefaction zone?

C5-36

Of concern too is whether atmospheric rivers and other intense rain events will interact with these conditions and compromise the safety and security of people and structures.

C5-37

NOISE –

↓ C5-38

³⁰ Ibid. page 3-23.

³¹ Ibid. page 59.

³² Geomatrix. Site Location Map and Location of Hayward Fault in Berkeley, California Memorial Stadium, University of California Berkeley.

The DEIR recognizes that there are "noise-sensitive land uses... (which) include residents to the southwest, south, and southeast of the softball field."

This is also to point out (using DEIR data) the angles of the slopes to the north and south of the softball field. The slopes range from 30-75%, as documented in Figure 4.3. The slopes are relevant to how sound is dispersed or not and how light can be reflected as described by the Panoramic Hill Association's experts.

The noise data measurement show that sound does not dissipate further up the hill. The measurements do not adequately represent the scope of the effect, the impact, the problem.

The noise sensitive setting is further emphasized based on the City of Berkeley noise ordinance. The neighborhood is located in the Environmental Safety-Residential Zone, <https://berkeley.municipal.codes/BMC/23.202.070> which has a limit of 55 dBA. <https://www.nonoise.org/regulation/ordinance/Berkeley,%20California.pdf>

Please clarify that is it not only the "residences closest to the Project site³³" which are within the Environmental Safety-Residential (ES-R) zone but rather all of the houses within Berkeley's jurisdiction on Panoramic Hill. The zoning is relevant to establishing the noise ordinance standards for the district.

The DEIR is inconsistent in describing the location of Panoramic Hill. Usually it is described as southwest of the project site, but it is also south of the project site and further up the hill. It is important to accurately describe the subject of what is being studied, and in this case is it is the study of noise impacts on Panoramic Hill residents.

Please correct that affected areas include Arden Road and not only Arden Path. Again, assumptions are made without foundation in terms of where measurements would be collected. The failure to measure more comprehensively suggests a failure to understand the difference between noise impacts in hillside residential environments and houses in flat terrain.

The existing description identifies different noise thresholds for the respective municipalities' noise ordinances but does not identify the jurisdictional boundaries between Oakland and Berkeley. Of sampled houses, which are in Oakland and which are in Berkeley? The different jurisdictions have different noise ordinances and standards.

Please see the City of Berkeley Municipal Code, Community Noise Chapter 13.40, Table 13.40.a1. There it is clear that "levels not to be exceeded more than 30 minutes any hour." Also please note that between 7 a.m. – 10:00 p.m., the standard is 55 dBA but that between 10:00 p.m. – 7:00 a.m. the standard is 45 dBA.

The DEIR states that the operational hours end at 10:00. Does that mean the field will be shut down, and gates closed? It is unlikely that all the noise will abate by 10:00.

C5-38
Cont.

C5-39

C5-40

C5-41

C5-42

³³ UC Berkeley CA Softball Field Renovation Project Draft EIR, page 4.5-11.

The crowd (up to a capacity of 1,511 spectators) cannot disperse in 360° direction but instead will be walking in one direction, westward on Centennial toward a parking lot or to one of the few available parking spaces on the street.

C5-43

The closest parking lot is .3 mile away.

There is also noise associated with service vehicles, broadcasting equipment, vendor operations, etc., which are noise sources not yet accounted for. These are new sources of noise because there have not hitherto been night games.

C5-44

Noise also has the potential to disrupt residential neighborhoods as many as 21-25 nights. This will especially be a problem if spectators park in neighborhoods instead of public garages.

C5-45

The problem of noise from pedestrians leaving the facility at 10:00 p.m., not knowing the area, and being amped up from recreating, yelling, and screaming for a few hours, and potentially being intoxicated, has not been addressed but instead completely omitted from measurement or comment. Since there are no existing night games, perhaps this is why. There is no baseline.

C5-46

TRANSPORTATION –

VMTs.

The proposed project also increases vehicles mile traveled (VMT) in more ways than previously identified. Already, VMT is identified as a significant and unavoidable impact; however, it is likely that the impact is worse than previously documented.

That is because the increase in VMT will likely not be offset by the proposed mitigation. “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... The key elements of the UC Berkeley TDM Strategic Plan include: transit pass subsidies, shuttle services including night safety shuttle service, permit parking priced to influence demand, pretax commuter benefits program, bike share program, carpool program, online commute planning tool, bicycle parking carshare opportunities, and a designated TDM administer (sic) that manages the TDM program (UC Berkeley 2021a)”³⁴

C5-47

The university’s best practice is used for students, faculty, and staff who visit the campus on a regular basis. But no evidence was shown which demonstrates programmatic effectiveness with spectators, whose travel pattern is different from commuters. In other words, the Draft EIR provides no evidence which shows that online commute planning tools, a carpool program, pretax commuter benefits, etc. would provide sufficient incentives to change spectator behavior for one event, or even several events.

³⁴ Ibid. 4.6-12

Not only is the population different than the population on which the TDM was developed, the TDM is used primarily for daytime use rather than night use. The project is associated with an increase in number of games played at night.

↑ C5-47
Cont.

The DEIR reports that in a recent survey, “approximately 95 percent of spectators drove their own vehicle...”³⁵ Maybe a location downhill and close to BART would reduce spectators’ reliance on vehicles as their means of transportation to softball games.

↑ C5-48

Given that the proposed project will increase the number of games and the number of night games, and given the unproven VMT strategy, it is likely that VMT will increase beyond what was studied here, and which is already found “significant and unavoidable.”

↑ C5-49

Parking is also limited in the area, and the lots mentioned in the DEIR all require an uphill walk. Plus, the parking garages are expensive and residential neighborhoods could be substituted at no cost. Parking isn’t monitored at night so the Residential Parking Permit (RPP) system does not discourage parking in residential neighborhoods. The impact in terms of the environment is to drive around looking for a place to park.

↑ C5-50

If spectators park at a lot, they are walking or being shuttled 0.3 miles from the Stadium Garage, 0.5 miles from the Underhill Garage, 0.8 miles from the Lower Hearst Garage, or 0.9 miles from the Recreational Sports Facility.

↑

Conflicts with City of Berkeley’s General Plan Transportation Element.

The Draft EIR states that it will comply with the City of Berkeley’s General Plan Transportation Element. It does not. Please refer to Claremont Elmwood Neighborhood Association’s comment on the DEIR Cal Softball Field Renovation Project for a description of the problem.

↑

The transportation analysis does not consider whether an increase in trucks is anticipated during operations. The transportation analysis considers spectators, athletes, coaches, and staff, but does not consider the impact of other vehicles which are associated with expanded use.

↑ C5-51

The analysis of net increase in project trip generation (Table 4.6-3) does not include the various service personnel and vehicles whether trucks or cars . The analysis is deficient in this way.

↑

The transportation analysis fails to provide a safe route for construction traffic. It is noted that “Regional construction traffic is expected to travel to the project site by using California State Highway 24, ..., 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).^{36 37}

↑ C5-52
↓

³⁵ Ibid. page 4.6-12

³⁶ Ibid. 4.6-24

³⁷ City of Berkeley. 2017b. “Restricted Movement of Trucks” [map]. Accessed on April 27, 2023.

<https://berkeleyca.gov/sites/default/files/2022-02/Designated-Truck-Route-Map.pdf>. City of Berkeley. accessed on 1/25/24.

These streets have a tonnage limit which is specified in the Designated Truck Route Map. Will construction vehicles weigh less than three tons? If so, the plan laid out in the DEIR is out of compliance with City's regulations and despite the Draft EIR's statement that it was in compliance.

C5-52
Cont.

Neither does the Draft EIR provide a route from the corridors to the canyon. The Draft EIR leaves it up to the contractors to solve this problem. By deferring the solution, the impacts are unanalyzed. This is dangerous because the shortest route is through a city street, which is Canyon Road, and which is substandard in width with no sidewalks.

C5-53

The Draft EIR improperly concludes that "(i)mplementation of these CBPs (continuing best practices) 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."³⁸ To the contrary, the plan does not comply with the City of Berkeley's Department of Public Works, Transportation Division's Designated Truck Route map.

C5-54

WILDFIRE –

Emergency response or evacuation plan.

C5-55

The DEIR did not mention Assembly Bill 747 and did not mention evacuation route assessment. https://abag.ca.gov/sites/default/files/documents/2021-11/Resource_Guide_05_Evacuation_Considerations.pdf

The proposed project makes an existing evacuation nightmare worse. Rather than adding population to an area, the university should be reducing population in the area.

The proposed project continues to put Californians and visitors in danger of coming into a VHRHZ where there is extremely limited ingress and egress. The limited ingress and egress have not adequately been described, delineated, relative to the capacity of the roadways and the population which currently needs these roadways to evacuate the area. It is not only the softball field spectators, players, coaches, staff, vendors, service personnel, etc., who must access and leave the site, but also the residents who live in East Berkeley, which includes residents who live in the city's hill areas north, south, with Panoramic Hill in between. There appears to be no adequate study of the capacity of the road and the size of the population which would likely use this road.

C5-56

Other features of this location which are related to evacuation have to do with the proposed project being located east of the Hayward Fault. The proposed project is accessed by a two-lane roadway in a designated landslide area. Figure 4.3-2.

C5-57

The roadways are few.

³⁸ Ibid. page 4.6-25

The north-south corridor of Gayley-Piedmont-Warring-Belrose is heavily trafficked and carries residents from all of the hillside residential areas (north Berkeley, south Berkeley, and Panoramic Hill in between). The only way to access and leave the proposed project is by way of this corridor. The exception is to travel up Centennial Drive to Grizzly Peak which might not be an option when there is a fire east of the project site.

To get to the proposed project requires using Stadium Rim Way and then Centennial Drive. The alternative is to come up Prospect Road to Canyon Road to Stadium Rim Way to Centennial Drive.

Canyon Road is substandard in width without any shoulder and without a sidewalk. A garage is built into the hillside and opens out into the street without a setback. There are natural restrictions to this roadway being tucked in between a retaining wall on one side (east) and the stadium on the other side (west). The attached photograph shows the barriers which cannot be eliminated (retaining wall on one side and the stadium wall on the other). Please note too that there is a power line at this location which is leaning toward the roadway. If it falls, it would completely prohibit ingress and egress.

The Prospect- Canyon-Stadium Rim Way corridor is furthermore restricted due to the Hayward Fault which runs lengthwise through the stadium and also intersects this corridor.

Another restriction exists on Centennial Drive. There was a recent landslide, or other significant land movement, which necessitated covering it to prevent further movement. The length of the slide is 154' as measured on 1/21/24.

Rather than preparing an evacuation route assessment, the DEIR used evacuation modeling to estimate impact. Assumptions were based on number of existing seats (permanent + portable) compared to future seats (permanent) rather than on the difference between existing average attendance (500) and predicted average attendance (1000). The latter is a two-fold increase in attendance and expected use.

Exposing people or structures to significant risks from wildfire.

A significant expansion of the built environment and a significant increase in night games will expose people to significant risks from wildfire and hazards. A glamorous facility and sporting event will be inviting them there

Once at the facility, there are risks from the human capacity to ignite wildfires. Will there be any prohibitions on leaving the softball field area and walking around outside of the fenced area? There is no mention of restriction of movement either during the day or night. Will alcohol be served or will smoking cigarettes or marijuana out of the fence be prohibited? Will security guards be posted?

Whether under the influence of a substance or not, spectators are at risk of leaving the facility and wandering onto Centennial Road and being hit by an oncoming vehicle.

C5-57
Cont.

C5-58

C5-59

ALTERNATIVE ANALYSIS –

Edwards Field is a very large field and stadium and represents track and field in its heyday. Edwards Field is also located in the athletic quadrant, which is at the border of Downtown Berkeley and close to other student athletic programs. Redevelopment of Edwards Field would provide an excellent setting for our female student athletes. An attached photograph shows a vantage point near the site from a hotel restaurant in Downtown Berkeley.

C5-60

IN CLOSING,

The natural beauty of Strawberry Canyon is gradually being eroded by increasingly dense use of the area by intercollegiate athletics, and by overly aggressive vegetation management. Much will be lost for future Californians if the current trends continue.

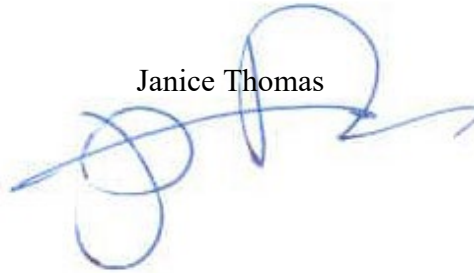
C5-61

The site also poses hazards which seem to not have been taken seriously. Sheer luck has taken us this far and must not be squandered.

I am entirely in support of women's intercollegiate softball. What I object to is the location.

Yours sincerely,

Janice Thomas



Attachments:

Skyglow

Two tributaries and one closeup

Landslide on Centennial

Garniss Curtis' letter to Regents

Geomatrix study of the Hayward Fault and environs

Limited street width and hazards and barriers

Tennis at night in athletic quadrant (12/21/23)

CC: Michael Lozeau, Esq.
Lozeau|Drury











May 11, 2008

To: Regents University of California
C/o Anne Shaw, Associate Secretary
Regents of the University of California

From: Professor Emeritus Garniss H. Curtis
Department Earth and Planetary Science
University of California, Berkeley

Re: Certification of Final Environmental Impact Reports for Proposed Computational
Research and Theory Facility and Helios Energy Resources Facility and Project Approvals

Dear Ladies and Sirs:

As the request for my geologic opinion on the advisability of constructing large buildings in the lower part of Strawberry Canyon and in the next canyon to the north known as Blackberry Canyon came to me on May 4th, I have to be brief and rely on my memory. I shall first say as strongly as I can "absolutely do not construct any buildings in those two canyons," then I shall go into the reason based on the work I did as consultant to Mr. Ben Lennart 25 to 35 years ago who was contracted by the University to investigate a number of sites for possible constructions or for stopping land slides that were threatening buildings.

First, the geologic setting of the two areas: The active Hayward Fault goes across the mouths of both canyons. Further east, the Wildcat Canyon fault parallels the Hayward Fault behind the Botanical Gardens and northward joins the Hayward near the town of San Pablo. Southward the Wildcat Canyon fault can be easily traced to Sibley Park and beyond. A few small epicenters lie along this fault near its junction with the Hayward, but it does not seem to be active elsewhere to the south. However, in the past the area between the two streams and the two faults which includes the whole of the Lawrence Laboratory complex lay four miles to the south next to Sibley Park. The volcanic rocks in both areas have potassium-argon dates of approximately 10 million years, and the rhyolite found in both of them is the same rhyolite. The volcanic rocks underlying most of the Lawrence Lab complex fill an old crater, a collapse caldera. The old volcano that once rose above these rocks collapsed after the expulsion of a very large amount of rhyolite ash, now largely removed by erosion. The volcanic rocks broke up as the collapse occurred and many show crushing and deformation and are mixed with large amounts of ash and volcanic fragmental debris. This material should never have been built on, as it is so clay-rich and unconsolidated. The western rim of this caldera is easily traced from its arcuate shape that is cut off by the Wildcat Canyon not far from the Merry-go-Round in Tilden Park. The boundary rocks to the west are sandstones and shales thought to be of Cretaceous age, that is, they are older than 65 million years.

Exposures of these sandstones and shales are good below Building 50 down to Bowles Hall, and they dip westward at angles of 20 to 25 degrees, about which more later. The Hayward Fault passes very close to the rear of Bowles Hall after going through the Stadium where it has caused major deformation of the support pillars and offset of the two sides of the Stadium since its construction in 1927.

Behind Hearst Mining Building and a few feet to the east, is the Lawson Adit that is a tunnel going eastward. Begun in the 1920s or earlier, it was completed in 1938 when it reached the Hayward Fault. Professor George Louderback told me (personal communication) that it was not an ordinary fault gouge that he found in the Hayward Fault zone but a peculiar mixture of serpentine and metamorphic rocks that also appear on the surface and underlie Stern Hall and part of Foothill Student Housing. Founders Rock near the corner of Hearst and Gayley Road is in this mélange. Also in the tunnel are several exposures of the offset of Strawberry Creek as determined from the contained rounded cobbles of Strawberry Canyon origin. Thus this indicates a displacement of more than 600 feet north along the Hayward Fault.

Still further north along the Hayward all the way to San Pablo huge amounts of the mélange similar to that in the Lawson Adit have been squeezed out of the Hayward Fault and are gradually sliding down the slope below the fault. Much of this mélange has reached the bottom of the hill back of El Cerrito. Along the Arlington many houses built on this mélange are sliding and have caused a great number of legal problems. Within the fault itself no movement can be detected in these deposits, some of which are more than 100 feet thick. Thus we believe that movement and expulsion of this mélange takes place during major earthquakes on the Hayward Fault.

A great deal of research has been done recently on the Hayward Fault by the USGS at Menlo Park, which was reported in a talk on the last Thursday of this past April. They have established a return time of major quakes of 6.5-7 magnitudes on the Hayward Fault of 130 years. The last major quake along the northern part of the Hayward Fault was 140 years ago, so we are over-due. They estimate that there is approximately a 65 percent chance a major quake will occur in the next 30 years.

Lennart was able to get survey notes from East Bay Municipal Utility District for the San Pablo Dam water tunnel to El Cerrito which crosses the Hayward Fault and shows that the right lateral horizontal movement of approximately one centimeter per year is matched by uplift of the east side of the fault of approximately one centimeter per year also. So, with the evidence of the horizontal displacement of the old Strawberry Creek of 600 feet horizontally along Galey Road, the Cretaceous sedimentary rocks east of the Hayward Fault there have also risen 600 feet. Building 50(?) sits on these Cretaceous strata, which, as mentioned dip westward 20-25 degrees. If an earthquake occurs when

these beds are soaked with winter rains the chance of a major landslide are great along the slippage planes of shale dipping westward. Minor slides have already occurred in these beds behind Bowles Hall. Indeed, the Foothill Student Housing was planned to be built there until I called attention to the landslide. A major landslide would probably destroy all the buildings on both sides of Galey Road from the Stadium to the buildings on both sides of Hearst Avenue and would probably reach Dow Library, destroying everything in its path to that point and possibly beyond. Buildings in the lower parts of both Strawberry and Blackberry Canyons would be buried if not destroyed.

Major landslides of the type I have described here are not rare along the Hayward Fault as was shown to us during our study of the Hayward Fault at the base of the hill behind the Clark Kerr Campus. We discovered that most of the campus was underlain by a large landslide that had originated in Claremont Canyon, and was gradually moved northward along the Hayward Fault. Trenches and drill holes showed this landslide to be up to 30 feet thick. It extends westward to and possibly beyond Piedmont Avenue. Further south is a huge landslide that underlies most of the campus of Mills College and extends westward another quarter mile. Still further south are more large slides that have originated in canyons and steep slopes east of the Hayward Fault. As the hills rise and become unstable, earthquakes cause them to break loose and slide. Very few large slides have occurred on the eastern slopes of the Berkeley Hills; hence the relationship to earthquakes of major land slides close to the Hayward Fault along the western slopes of the Berkeley Hills. Normal erosion rounds off unstable areas on the eastern slope of the Berkeley Hills before they break loose and slide.

Most of the buildings of the Lawrence Laboratory are on the unstable ground filling the old caldera particularly the Bevatron and associated buildings. As the Cretaceous beds immediately west of these buildings have been eroded away there is nothing to keep these soft caldera-filled beds from sliding. The buildings on them will certainly move a few feet in a major earthquake if not hundreds of feet. Keep in mind the Loma Prieta quake of 1989 of magnitude 6.9 which from a distance of over 60 miles destroyed a section of the Bay Bridge, a section of the overhead freeway in Oakland killing 63 people, and many houses on filled ground in the Marina of northern San Francisco some 70 miles from the quake!

No! Major buildings of any kind should not be constructed in either of these canyons bordering this huge block of unstable rock.

Professor Emeritus Garniss H. Curtis
Department Earth and Planetary Science
University of California, Berkeley
For: Regents University of California, May 11, 2008



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November 12, 2008

**CHAIR OF THE COMMITTEE ON GROUNDS AND BUILDINGS
PRESIDENT OF THE UNIVERSITY**

**ACTION UNDER INTERIM AUTHORITY – DECERTIFICATION OF THE FINAL
ENVIRONMENTAL IMPACT REPORT AND RESCISSION OF THE REGENTS'
APPROVAL OF DESIGN, HELIOS ENERGY RESEARCH FACILITY, BERKELEY
CAMPUS**

EXECUTIVE SUMMARY

Campus:	Berkeley
Project:	Helios Energy Research Facility
Action:	Decertification of Final Environmental Impact Re and Rescission of Design Approval
Total cost:	None
Previous Actions	
Nov 2006:	Approval of the 2007-08 State Budget for Capital Improvements including the Helios Energy Research Facility, at that time, a smaller project without the Energy Biosciences Institute. May 2007: Approval of project budget (\$159,400,000) for Helios Energy Research Facility including the Energy Biosciences Institute, funded from external financing (\$74,400,000) and interim financing (\$15,000,000). May 2008: Approval of budget augmentation and standby financing (\$38,846,000). May 2008: Approval of design and certification of the environmental impact report.
Item Summary:	The proposed actions are 1) the decertification of the environmental impact report prepared and certified for the Helios facility and 2) rescission of the design approval for the project granted on May 27, 2008. This will allow the campus to proceed with a proposed redesign of the Helios facility to address geotechnical issues identified subsequent to the Committee's approval of the project.

RECOMMENDATION

It is recommended that:

Pursuant to the Regents' Policy on Interim Authority

The President and the Chair of the Committee on Grounds and Buildings decertify the Final Environmental Impact Report for and rescind the design approval of the Helios Energy Research Facility.

BACKGROUND

In May 2008, the Committee on Grounds and Buildings certified a Final Environmental Impact Report (FEIR) for the Helios Energy Research Facility and approved the design for the project. As stated in the FEIR, the geotechnical report prepared for the project identified a significant lens of colluvial material underneath the building footprint. Initial plans had been to remove this material and replace it with an engineered/drained backfill.

Subsequent to the Regents' approval of the project and in connection with further design of the project, the project team has further evaluated the design of the project and determined that revision of the design is in order to resolve design concerns. In particular, the project team further evaluated the colluvial material beneath the building footprint and the engineered backfill proposed to replace this colluvium. Further evaluation demonstrates that issues related to removal of the colluvial material and backfill can be entirely eliminated with design changes. The project team accordingly has concluded that a revision to the design of the project is in order. These proposed project changes are substantial enough to warrant submittal of a revised design to The Regents for approval, following analysis in and certification of a new Environmental Impact Report (EIR). The project team intends to submit the new design and new EIR to The Regents in the spring or summer of 2009.

Proposed Decertification of the FEIR and Rescission of Approval

The campus has requested that the FEIR certified for the project be decertified. A new draft EIR will be prepared once the design of the new Helios facility has been completed. This document will be circulated for public review and comment and will be presented to The Regents along with a request for design approval for the new facility. The campus anticipates that the design and environmental review process for the new facility will be completed in 2009.

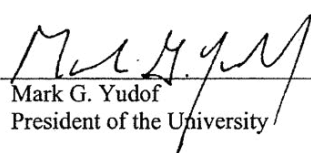
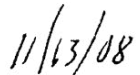
CEQA Classification

The proposed action would have no potential to result in an adverse environmental effect. In accordance with the California Environmental Quality Act (CEQA), the action to decertify the FEIR and rescind the project approval is exempt from environmental review under Public Resources Code Section 21080(b)(5) and CEQA Guidelines Section 15270.

- 3 -

Approved:

Leslie Tang Schilling Date
Chair of the Committee on Grounds and Buildings

Mark G. Yudof Date
President of the University

Charles,

It was Engineer John Shively who hired geotechnical engineer Ben Lennert to explore why there was a landslide over 30 years ago. They suspected water inside the hills and Lennert drilled and found the source. If you ask John to answer questions, he can fill you in.

John jokes that they thought they might bottle it and sell as 'Bear Water' as the studies found it to be pure geologic water.. John is on the SSC Board. His email is: "john shively" <jrshively@gmail.com> and tel is: 531-1355. He is hard of hearing--I have to speak loudly. John has spoken at meetings many times of this history-- is an enjoyable story-teller.(I may have spelled Lennert incorrectly.)

The Lab and University have avoided addressing these facts and have never formally done a good science--comprehensive study to confirm {or disconfirm} Garnis's findings. They selectively trench and dig shallow wells for planned projects. The Aquifer is formally recognized by the State Water Resources Control Board and it could serve as a drinking water bank as the well pumps sufficient water to qualify. The well with pump are located below ground at the Space Science lab parking lot above the Lawrence Hall of Science, thus they are maintained and monitored by the University..

Although Iraj Javandel (now retired from LBL) likely denies the Caldera concept-- he used to test the creek and well water. Often, he has said he HOPED a doctoral student would take on a study of the Aquifer. His CV lists his qualifications as 'aquifer restoration". A number in the phone book for him 526-9205 and Reza 521-7003 on Ventura in Albany. He may know if anyone has studied the aquifer.He may have written something about it! Perhaps you will ask him? Iraj is a talker with a big ego--as a earth scientist--he may say much more now he is clear of the Lab.

ALL the Lab people still deny the fact of the Caldera; yet they cannot deny the fact of the Aquifer. If someone took on a study of the Aquifer they likely would back into studying the geologic formations that Garnis has indicated are Caldera geology. Perhaps your web work could plant the idea of a study for a grad student?

UC BERKELEY HILL CAMPUS WORKING PAPER



Strawberry Canyon c. 1870

A STUDY IN SUPPORT OF THE 2020 LONG RANGE DEVELOPMENT PLAN
DECEMBER 2002

The purpose of Working Papers is to document findings, identify concepts for further consideration and investigation, and inspire creative thinking. They do not represent decisions made nor policies adopted by the University.

■ HILL CAMPUS STUDY COMMITTEE

Co-Chairs

- Beth Burnside, Vice Chancellor for Research
- Tom Lollini, Assistant Vice Chancellor for Physical and Environmental Planning

Academic Planning and Facilities

- Vice Provost William Webster

Athletics/Recreational Sports

- Associate Director Mike Weinberger

Botanical Garden

- Associate Professor Ellen Simms, Director

Budget and Finance

- Assistant Vice Chancellor Tom Koster

Field Station for Behavioral Research

- Professor Stephen Glickman

Forestry

- Professor James Bartolome, Environmental Science, Policy and Management - Ecosystem Sciences
- Associate Professor Whendee Silver, Environmental Science, Policy and Management - Ecosystem Sciences

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- Professor William Dietrich, Chair, Geology and Geophysics

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- Mike Chartock, Director for Strategic Planning

Lawrence Hall of Science

- Director Ian Carmichael

Mathematical Sciences Research Institute

- Professor David Eisenbud

Samuel Silver Space Sciences Laboratory

- Professor Robert P. Lin, Director

Staff to the Committee:

- Kerry O'Banion, Project Director 2020 LRDP

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■ INTRODUCTION

PURPOSE The campus is now preparing an update of its Long Range Development Plan, to guide capital investment at UC Berkeley through the year 2020. The Hill Campus - the campus lands east of the Stadium, Greek Theater and Bowles/Stern/Foothill - is a critical element of this update. The LRDP and its Environmental Impact Report will seek to establish a land use framework for the Hill Campus that reflects an optimal balance of program requirements and environmental stewardship.

Toward this end, a study committee for the Hill Campus was formed in spring 2002 to identify those program requirements and recommend how they might best be accommodated. The objectives for the study committee were to:

- Assess the value of the Hill Campus for instruction, field research, recreation and other potential uses - including habitat and resource conservation - and define the areas of greatest value for each use.
- Identify the needs of current Hill Campus programs, and anticipated changes through 2020.
- Identify known and potential demands of other users through 2020.
- Define a set of principles for development of the Hill Campus through 2020, including land use, protective measures for sensitive/valuable areas, and key capital investments and management practices required to support these principles.

SCOPE The university owns roughly 1000 acres of land in the hills east of Memorial Stadium, the Greek Theater, and the Bowles/Stern/Foothill student residences, as shown in figure 1. Roughly 200 acres of this land are now utilized and managed by the university-operated Lawrence Berkeley National Laboratory under its own separate jurisdiction.

The 200 acre LBNL site shown in figure 1 includes the 70 acre expansion agreed upon by the campus and LBNL in March 1996 to improve fire management.¹ These 70 acres shall continue to be managed under the land use policies of the campus Long Range Development Plan until the LBNL LRDP update is adopted by the regents, at which point the LBNL LRDP shall become the guiding document.

While the balance of this working paper does not address land use within LBNL, its director of strategic development is an active member of the study committee, and the findings of the committee are congruent with LBNL policies and plans. The term 'Hill Campus' in the balance of this working paper refers to the roughly 800 campus managed acres lying east of Memorial Stadium, the Greek Theater, and the Bowles/Stern/Foothill student residences (figure 1).

■ RELATED PLANS

1990-2005 LRDP The current 1990 LRDP states the objective for the Hill Campus is:

... to administer most of the area as a conservation land resource with limited areas designated for development ... Major portions of the area are proposed to continue to be managed as an environmental teaching resource, such as the Ecological Study Area and Faunal Refuge Area ... the area is also proposed to continue to be used and managed as a recreation resource ... The area is suitable for research uses that ... require or are compatible with a natural or semi-natural environment ... research activities [without] wet laboratory facilities or ... high service requirements are suitable for the area ... a site is [also] reserved for future faculty housing adjacent to existing residential areas near roads and services.²

The 1990 LRDP divides the Hill Campus into land use zones (figure 2), although one of the zones, the Natural Areas, is defined merely as 'remaining undeveloped lands' without further explanation. The 1990 LRDP proposes several land management initiatives:

- Expansion of the Ecological Study Area.
- Expansion of the Botanical Garden.
- Reservation of Claremont Canyon as an undeveloped area pending future study.
- Designation of several reserve sites for future development.

The reserve sites include a faculty housing site at the intersection of Centennial and Grizzly Peak, as well as five potential sites for future research facilities: the former Poultry Husbandry site, the current Field Station for Behavioral Research site, sites north of Space Sciences Laboratory and east of the Mathematical Sciences Research Institute, and Chaparral Hill. The latter is suggested in the 1990 LRDP as the future site of a relocated FSBR: the current FSBR site would then be redeveloped with a new research facility.

The 1990 LRDP also proposed several specific capital projects in the Hill Campus, described further in CURRENT LAND USE, below:

- Various improvements to Strawberry Canyon Recreation Area to accommodate men's and women's athletics as well as recreational sports.
- Additions to the Lawrence Hall of Science, Space Sciences Laboratory and the Mathematical Sciences Research Institute.
- Replacement of several existing structures at the Botanical Garden.
- New parking lots at the Upper Hill Terraces and two other sites along Centennial Drive.

2002 STRATEGIC ACADEMIC PLAN

All campus plans at UC Berkeley share the underlying principle that our land use and capital investment strategy should align with and promote the goals of the academic enterprise, as articulated in the Strategic Academic Plan.³ While all of its principles bear on the future of the Hill Campus, two are particularly relevant to its future physical development:

MAINTAIN CONTIGUITY. The breadth and quality of our academic programs are the equal of any university in the world, but UC Berkeley is more than the sum of its parts. A great research university also requires a dynamic intellectual community, one that provides exposure to a wide range of cultures and perspectives, and generates the interactions that lead to new insight and discovery. For such a community to thrive requires a campus organized and designed to foster those interactions.

Although the academic structure of the campus reflects the traditional disciplines defined over a century ago, they are no longer insular and self-contained. Because the potential for interaction is everywhere, and because we cannot predict where productive synergies may emerge in the future, our first principle of physical organization must be to retain and reinforce the contiguity of the academic enterprise on and around the core campus. The Academic Plan recommends the campus:

- Accommodate future academic growth on the core campus and adjacent blocks.
- Reserve core campus space for functions that serve and/or involve students.
- Reserve adjacent blocks for research and service units requiring core campus proximity.

As examined later in this document, the critical interactions for all Hill Campus programs are primarily with the core campus, rather than with each other. However, all of those programs report significant problems in sustaining those critical interactions, due to their physical distance from the core campus, and to the difficulty of providing adequate transit, services and infrastructure to the Hill campus given the constraints of distance, poor access and rugged terrain.

INVEST IN HOUSING. Our best student and faculty candidates increasingly cite the scarcity of good, reasonably priced housing as a primary factor in their decisions whether or not to come to Berkeley. Of those who do, many find themselves living miles from campus, where the length of the commute itself becomes a disincentive to spending time on campus. This trend is destructive to intellectual community and the cultural life of the campus, and we must strive to reverse it. The Academic Plan recommends the campus:

- Provide two years of university housing to entering freshmen who desire it, and one year to entering transfers who desire it.
- Provide one year of university housing to entering graduate students who desire it.
- Provide up to 3 years of university housing to new untenured ladder faculty who desire it.
- Partner with private and not for profit developers to continue to expand and improve the rental housing stock available to the campus community.

As examined later in this document, housing - particularly for faculty and visiting scholars - is one land use that may be suitable for limited expansion in the Hill Campus, due both to its physical flexibility and to its more easily met transit and service demands compared to large scale research facilities.

■ CONTEXT

The vast majority of the campus-managed Hill Campus acreage, roughly 85%, lies within the City of Oakland, while the westernmost 10% lies within the City of Berkeley, and the easternmost 5% within unincorporated Contra Costa County. The western third of the site abuts low-density private residential areas to the north and south, while the eastern two-thirds of the site abuts the largely undeveloped lands of the East Bay Regional Park District and the East Bay Municipal Utility District.

The most dramatic physical feature of the Hill Campus is Strawberry Canyon, a watershed of roughly one square mile drained by the south fork of Strawberry Creek. This water supply helped convince the trustees of the College of California to acquire the ranch lands along the creek in 1868 as the site for their new campus. At the time, the hills above the campus were a mix of grassland, oak savannah and open chaparral. It was not until speculators in the next decade planted eucalyptus, in a failed scheme to grow and harvest them for commercial use, that the hills began to acquire their present, largely forested look.

By the turn of the century, a shortage of water had begun to constrain campus growth, so the regents acquired another 260 acres of hill watershed to the east to increase the system capacity. Around the same time, there was also a growing desire to beautify the campus: a campus nursery was established, and nearly 19,000 eucalyptus, pine, cypress and redwood trees were planted in 1913, with thousands more planted in the years to follow.⁴ The campus' hill lands were further augmented in 1951 and 1961 with the acquisitions of 290 and 240 more acres from the East Bay Municipal Utility District.⁵

NATURAL FEATURES

PHYSIOGRAPHY. From a base elevation of roughly 400 feet at its western edge, the Hill Campus rises to nearly 1800 feet at Chaparral Hill at its eastern edge. Slopes range from moderate to steep, but in general the terrain is rugged: few sites within the Hill Campus are suitable for development without extensive site alterations.

The active Hayward fault lies at the western boundary of the Hill Campus: it trends northwest-southeast and runs directly under Memorial Stadium. A second northwest-southeast fault, the Wildcat Fault, traverses the Hill Campus just east of the Botanical Garden: it is not known whether this fault is active or inactive. A third, inactive fault, the Strawberry Fault, runs under the channel of the south fork of Strawberry Creek.

While much of the Hill Campus is undeveloped, some areas within it are prone to landsliding: for example, land slippage occurs in a zone extending from a point upslope of the LBNL Center for Electron Microscopy toward and through the former Poultry Husbandry site.⁶ Existing hydraugers operate to relieve groundwater pressure and reduce land slippage in the vicinity of Space Sciences Laboratory and Mathematical Sciences Research Institute.

The 1997 SAFER evaluation rated 13 Hill Campus buildings 'poor' or 'very poor', of which ten are small one-story structures. Retrofit of the largest 'poor' building, the original facility at SSL, was completed in 2000. The next largest building requiring seismic upgrades is the 8,000 asf Haas Clubhouse.

HYDROLOGY. The Hill Campus lands lie within three watersheds: Strawberry, Blackberry, and Claremont Canyons. A fourth watershed, Derby Canyon, abuts the Hill Campus at its southwest corner. Strawberry Canyon, the upper watershed of the south fork of Strawberry Creek, contains roughly 635 acres of university land. All existing Hill Campus development is located within Strawberry Canyon and Blackberry Canyon, adjacent to the north. The roughly 200 university owned acres in Claremont Canyon, on the other hand, are undeveloped except for dirt roads and trails.

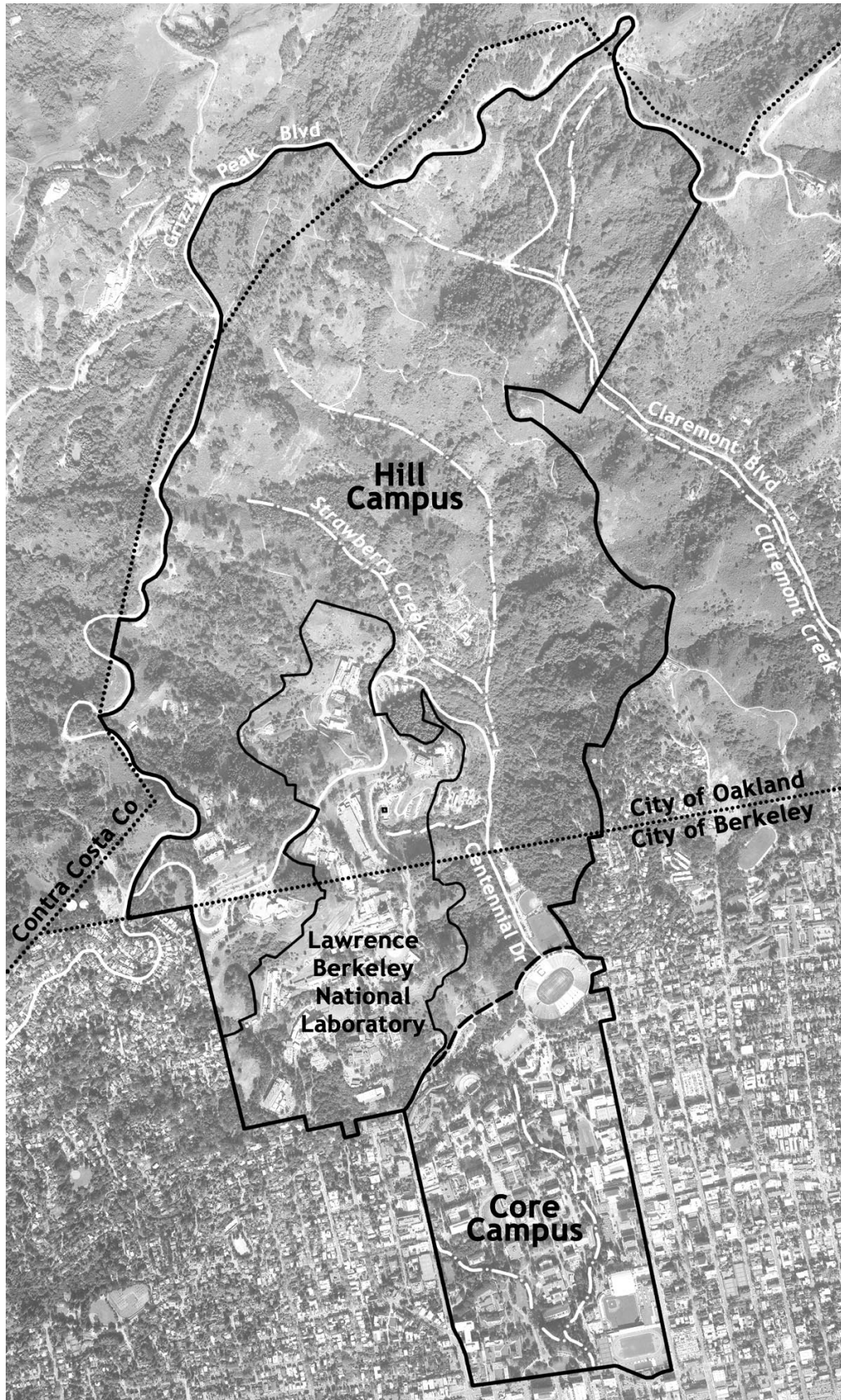


Figure 1. Hill Campus Boundaries

The lower portions of the north and south forks of Strawberry Creek are culverted, as are portions of several of its tributaries. Claremont Creek is open until it enters a culvert several blocks east of the Claremont Hotel. As a result of both culverting and the increase in impervious surfaces in the Hill Campus over the past century, rapid changes in channel flow can occur in response to rains and runoff, exacerbating the natural erosion already resulting from the steep terrain in the upper watersheds.

While there is no comprehensive management plan for campus stream channels, the 1990 Strawberry Creek Management Plan describes a program of improvements to Strawberry Creek, some of which have been implemented. The plan is now being updated, but its scope remains confined to Strawberry Creek and its tributaries.

VEGETATION. The Hill Campus is a mosaic of wet and dry north coastal scrub intermixed with stands of trees: natural oak-bay woodland as well as pine, redwood and eucalyptus plantations. The pattern of vegetation has changed significantly from the original mix of grassland and oak savannah, due not only to the decline of grazing, but also to the human introduction of eucalyptus and conifers as well as invasive perennials such as brooms and euphorbia, and to the fact these introduced species often out-compete natives.

Only scattered patches of the original native grassland remain today. These areas are of scientific interest not only in themselves, but also as the initial stage of the natural succession from grassland to shrubland to woodland. The climax oak-bay woodland supports the most diverse vertebrate fauna of any habitat in California.⁷ While clusters of oak-bay woodland occur throughout the Hill Campus, by far the largest contiguous area covers the north-facing slopes at the west end of Strawberry Canyon.

The mix of scrub and conifer and eucalyptus stands makes the East Bay Hills a regular seasonal fire risk. This risk becomes particularly pronounced during the periodic one- or two-day shifts from the normal northwesterly winds to 'Diablo' winds blowing in from the warm, dry regions to the east. 20th century Diablo wind fires have burned over ten times the acreage of normal wind condition fires, and include the firestorms of 1923 and 1991. The generally steep terrain and poor roads in the Oakland and Berkeley hills present enormous obstacles to fire response, and some areas such as Claremont Canyon, served by only a single road, may be indefensible in Diablo wind conditions.⁸

HABITAT. The entire Hill Campus represents a small portion of the critical habitat for the threatened Alameda Whipsnake. Few whipsnakes have been documented in the Hill Campus, but since 25-30% of its slopes have a south or southwest aspect, they represent potential whipsnake colonization habitats.

Other listed species that may possibly inhabit the Hill Campus lands include Presidio Clarkia, Alameda Manzanita, Harvestman Spider, and the California Red Legged Frog. The Hill Campus is not presently a designated critical habitat for any of these species. However, the California Native Plant Society is presently lobbying state and federal agencies to include Western Leatherwood, a plant found in Claremont Canyon, as a listed species.⁹

CURRENT LAND USE

ECOLOGICAL STUDY AREA. The use of Strawberry and Claremont Canyons for instruction and research related to the natural environment, and their preservation in a primarily natural state, has been a longstanding policy of the campus. The mix of native and introduced trees established a wide variety of flora and fauna, making the Hill Campus a useful resource for field study, and led to the initial designation of a 'primitive area' in the mid 1930s.

The Hill Campus was further recognized as an 'invaluable asset' to instruction and research by a faculty advisory committee, in their 1958 proposal that 'the guiding principle in the development of Strawberry canyon and the Hill Campus should be ... maximum use consistent with conservation of native values.'

This proposal led ultimately to the designation of a 300 acre Ecological Study Area in 1968, and the 1979 preparation of guidelines for maintenance and preservation in the Management Plan for Strawberry and Claremont Canyons.¹⁰ The 1990 LRDP proposed three expansions of the ESA boundary, as well as the designation of a faunal refuge area at the center of the ESA (figure 2).

STRAWBERRY CANYON RECREATION AREA. Formerly the site of the campus' corporation yard, those facilities were removed in 1959 to make way for a recreational complex composed of the Haas Clubhouse, Stern Pool, tennis courts and a turf athletic field. The East Pool was built in 1967 to relieve overcrowding. As proposed in the 1990 LRDP, the tennis courts were removed, and the athletic field and parking lots reconfigured in 1993 to create the present Witter and Levin-Fricke Fields. The administrative offices for the Recreation Area are housed primarily in the Strawberry Canyon Center northeast of the Clubhouse.

BOTANICAL GARDEN. The oldest campus-operated Botanical Garden in the country was established on the core campus in 1891, and moved to its present location in 1926. Ranging in elevation from 600 to 900 feet, the site provides a unique variety of microclimates that accommodate over 13,000 plant species and varieties, organized by geographic origin.

The Garden is located on a 34 acre site, split into north and south sections by Centennial Drive. Strawberry Creek flows through the southern section and is incorporated into the Garden design. The 1990 LRDP proposed expanding the Garden by 40 acres, along with a program of new investments including parking and entry improvements and replacement of several old office and greenhouse structures.

A few of the LRDP proposals have been implemented. A new parking lot was constructed in 1991, some upgrades to buildings and visitor amenities have been completed, the old Acid House was converted in 2001 to a new Plant Conservation Research Center, and a greenhouse dating from 1927 was replaced in 2001 with the new Desert and Rainforest facility.

LAWRENCE HALL OF SCIENCE. Completed in 1968, LHS is managed as an organized research unit, although its primary mission is education and public service. LHS functions as a resource center for bay area schools and residents, through exhibits, displays, and instructional programs, and draws over 300,000 visitors a year.

The building, a four-story structure of 75,000 asf, represents only about 40% of the original master plan for the site. The 1990 LRDP proposed expansions to both the north and south, of 7,000 and 16,000 asf respectively, to enhance program functions and the visitor experience. However, major improvements since the LRDP have been limited to renovations within the existing building and the construction of 360 parking spaces at the upper terrace lot in 1997. The outdoor Bay Exhibit is presently under construction on the south expansion site.

SILVER SPACE SCIENCES LABORATORY. An organized research unit of the campus, SSL is a multi-disciplinary facility, engaged in basic research motivated by the exploration of space and the use of technology developed in space research. The original 29,000 asf facility was completed in 1966. The 1990 LRDP proposed an expansion of 15,000 asf: in fact, SSL nearly doubled in size with the 25,000 asf annex completed in 1998. Seismic and program improvements to the original facility were subsequently completed in 2000: the buttress structures erected to improve seismic performance also offer the potential for modest future expansions of the facility.

MATHEMATICAL SCIENCES RESEARCH INSTITUTE. MSRI is an independent institute that exists to further mathematical research through programs, workshops, postdoctoral training and public outreach and education. Over 1,000 scholars visit MSRI each year, many for substantial periods of time. Although independent, MSRI is housed in facilities leased from the campus. Its current 14,000 asf facility was completed in 1985: a planned expansion of 14,000 asf is now in design.

FIELD STATION FOR BEHAVIORAL RESEARCH. The FSB, an organized research unit of the campus, was established on its current site in 1961, to conduct research on animal behavior that can not be performed in conventional enclosed labs. The FSB was designed as nine distinct units, each providing a particular type of experimental setting ranging from open meadows to partly enclosed cages, kennels and runways. Numerous small research and support buildings are distributed over the 18 acre site.

FSB research requires isolation from other human activity. However, this once-remote site is no longer as isolated since the construction of nearby SSL and MSRI. For this reason, the 1990 LRDP proposed the future relocation of FSB to Chaparral Hill: the current site could then be redeveloped. No action to date has been taken on this proposal, due the cost of extending adequate infrastructure and transit to Chaparral Hill and, more recently, to its identification as a potential colonization site for the Alameda Whipsnake.¹¹

LAWRENCE BERKELEY NATIONAL LABORATORY. The 200 acre LBNL is by far the largest research enterprise in the hills east of campus. This multidisciplinary research facility is an independent unit of the university, operated under contract to the US Department of Energy. Most of its 80+ buildings are owned by DOE, constructed on university owned land leased to the federal government. LBNL research is also conducted in 20+ buildings on the UC Berkeley campus, particularly Donner and Calvin Labs.

Established in 1931 on the UC Berkeley campus, LBNL was relocated to its current site in 1940 with the construction of the 184 inch cyclotron. LBNL facilities are used by 3500 staff as well as over 2000 guest researchers a year: some 250 scientists also serve as UC Berkeley faculty. LBNL also employs 800 UC Berkeley students, and draws over 3000 visitors a year.

LBNL is presently updating its own Long Range Development Plan, on a schedule roughly congruent with the campus' own LRDP update. While the two institutions are under separate jurisdictions and environmental laws (CEQA for UC Berkeley, NEPA for LBNL), their LRDPs must recognize their potential cumulative environmental impacts. The October 2000 Notice of Preparation indicates LBNL intends to grow by up to 670,000 gsf by 2022.

PHYSICAL PLANT STAGING AREA. The upslope areas of the former Poultry Husbandry site are now used by PPCS as a materials storage and vehicle parking site, served by a narrow switchback road. This site was designated in the 1990 LRDP as a reserve site for a future research facility. Because the site remained unused for a long period, PPCS recently began to use it as a staging area, in response to the lack of more suitable sites on the core campus or in its urban environs.¹²

The unauthorized reconstruction of this site by PPCS to accommodate the staging area, including new paved surfaces and concrete retaining walls, is problematic for several reasons. First, the site is in a known zone of land slippage. Second, fenced paved surfaces encroach within 20 feet of Chicken Creek, a perennial tributary to Strawberry Creek. The paved surfaces degrade the riparian habitat by displacing plant cover and by increasing runoff into the creek. Third, the use of the site for storage, as well as the on-site portable toilet, may pose a threat of pollutant spills into the creek, which is regulated by the Regional Water Quality Control Board.¹³

As described in PRINCIPLES, below, the PPCS staging area is not a suitable long-term use of this site, and should be relocated as soon as an alternate location can be obtained.

PARKING. 550 parking spaces controlled by the campus' Parking and Transportation auxiliary are located in the Hill Campus: 364 of these are located in the terrace lots near LHS, 78 at the SSL lot, 74 at the Botanical Garden lot, and 34 on Stadium Rimway. Another 115 spaces are located at Witter Field, and 151 more uncontrolled spaces are scattered throughout the Hill Campus. Many staff in the upper Hill Campus, however, prefer to park for free along Grizzly Peak Boulevard or in the dirt parking lot east of the Boulevard.¹⁴

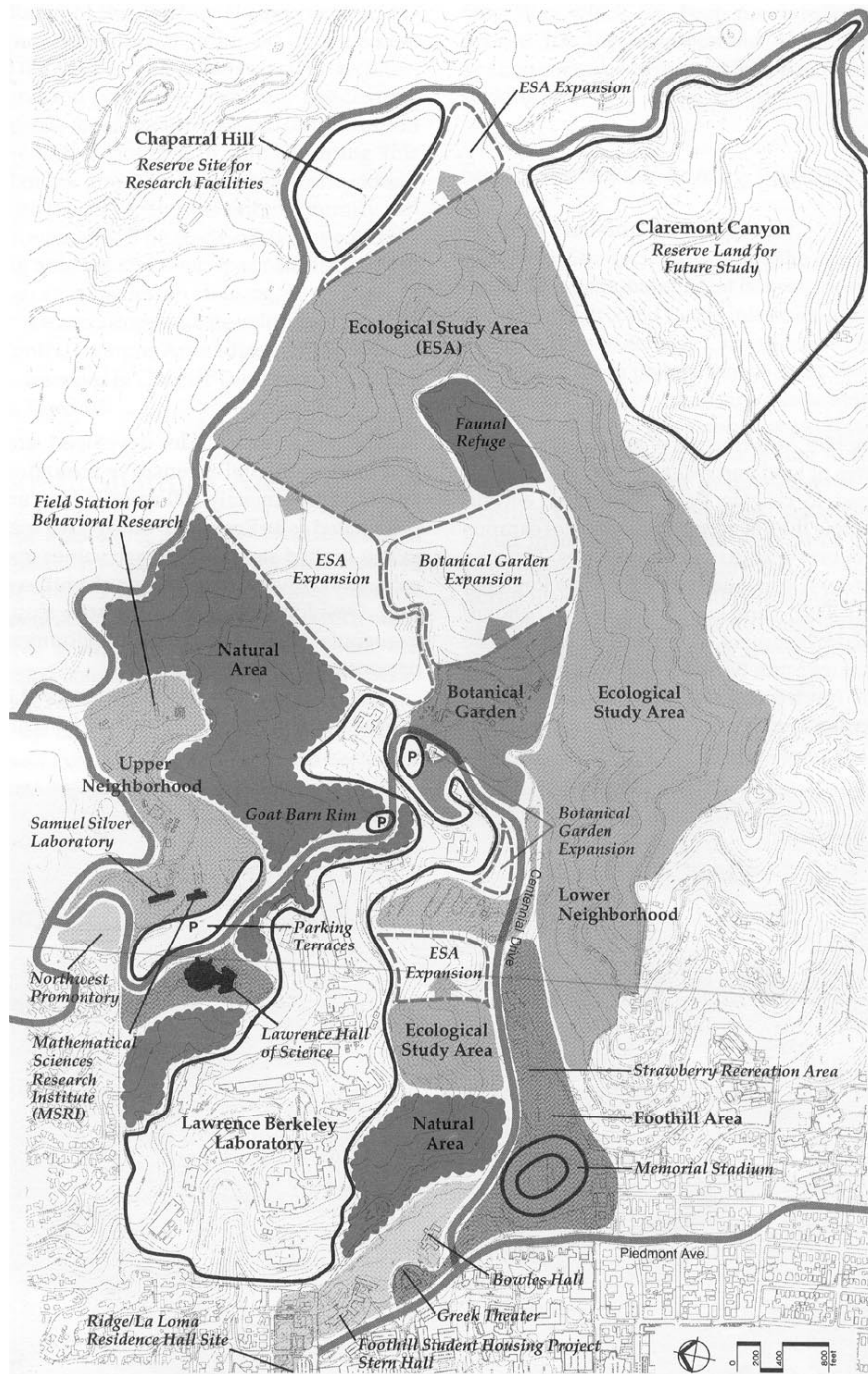


Figure 2. Hill Campus Land Use - 1990 LRDP

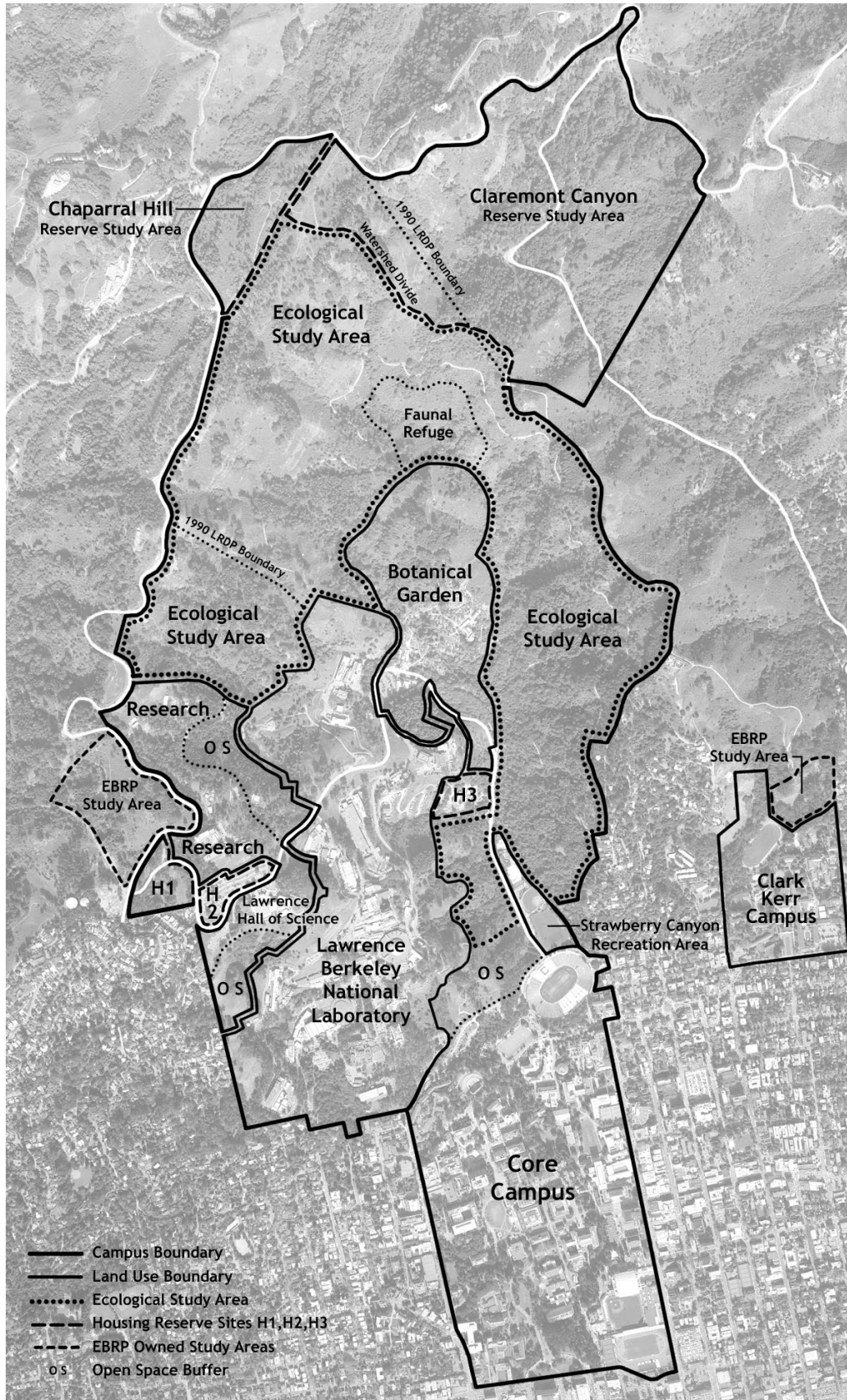


Figure 3. Proposed Hill Campus Land Use - 2020 LRDP

■ PRINCIPLES

ECOLOGICAL STUDY AREA

The purpose of the Ecological Study Area is to preserve the area for instruction and research.¹⁵ Yet while the ESA and other undeveloped areas north of Claremont Canyon do have significant potential value to the university for both instruction and research, this value is largely unrealized due to inadequate management. Because the campus has no formal mechanism for recording and tracking individual research projects in the hills, those projects are often neither informed of one another nor protected from public intrusion and damage.

PROPOSAL 1. The campus should establish a formal management entity for the Ecological Study Area. Such an entity would not only maintain a registry of all instructional and research projects in the ESA, it could also:

- Identify and promote synergy among those projects,
- Track external funding prospects for new research initiatives,
- Implement strategies for protection from invasive plants, animals and humans,
- Implement strategies for improved coexistence of recreation, education, and research, and
- Collaborate with other campus service units to implement management practices that both reduce fire risk and help restore a mosaic of native vegetation.

ACTION 1.1. Incorporate such a management entity into the emerging strategy for the Field Stations. The Vice Chancellor for Research should charge the new committee responsible for Field Station oversight to establish a management entity for the ESA.

However, the campus does not yet have the tools it requires to manage this resource. One critical need is a Geobased Information System (GIS) that provides a comprehensive and regularly updated inventory of its natural and manmade features, and the capability to register and monitor activities ranging from research projects to fire mitigation measures. The GIS could also resolve the longstanding problem of imprecise and incomplete maps and records of the Hill Campus, by providing a central source for integrated geobased information.

ACTION 1.2. Create and maintain a comprehensive campuswide GIS, including the Hill Campus. The GIS would be maintained by the UC Berkeley GIS Center, in collaboration with other campus research units such as the Earth Resources Center and the Center for Assessment of Forest and Environmental Resources. The cost to create a campuswide GIS, including a comprehensive aerial survey, is estimated to be \$180,000-\$200,000: system maintenance and upgrades could be supported through a combination of campus and recharge funds to be determined.

NATURAL AREAS. The 1990 LRDP proposed several expansions to the ESA. It also, however, designated several other areas of the Hill Campus as Natural Areas, but with no further explanation of the distinction. Past studies of the Hill Campus, however, have emphasized the importance of preserving these areas in their natural condition: for example, the 1984 Task Force Report on the Hill Campus states ‘... the intent is to maintain undeveloped areas outside the ESA in their natural state.’¹⁶

The boundary of the largest, easternmost Natural Area was changed by the expansion of the LBNL managed zone. As shown in figure 3, it now consists of a large, roughly square area adjacent to the ESA, plus a narrower tail extending down to Centennial Drive. Inclusion of the larger portion of this Natural Area in the ESA would place it under the protection of ESA management, and enhance the integrity and habitat value of the ESA.

The other Natural Areas, however, are not as suitable for inclusion in the ESA, either because they are largely or entirely separated from the ESA by other zones or, in the case of Charter Hill, because it is intensively used by people at certain times. These areas should continue to be managed by the campus as undeveloped open space, but not subject to the oversight of ESA management.

PROPOSAL 2. The 2020 LRDP should expand the boundary of the ESA to include not only the ESA expansion areas designated in the 1990 LRDP, but also adjacent Natural Areas that would enhance the value of the ESA as an academic resource.

RESERVE SITES The 1990 LRDP designated several ‘reserves’ for future study and possible development. These reserves fall into three categories:

- Claremont Canyon and Chaparral Hill
- Poultry Husbandry and Northwest Promontory
- Field Station for Behavioral Research and Vicinity

The two largest reserve sites are Claremont Canyon and Chaparral Hill, and they are similar in several respects: they are remote from the core campus, they would require substantial infrastructure investment to support research facilities, and no clear demand for more intensive campus use of either site has emerged since the 1990 LRDP. The Poultry Husbandry and Northwest Promontory sites are most suitable for faculty and visitor housing, and are examined further in HOUSING, while the future of the FSBR and vicinity is examined further in RESEARCH, below.

CLAREMONT CANYON. Claremont Canyon, the 200 university-owned acres south of the ridge dividing the Strawberry and Claremont watersheds, does not in general offer the campus any significant academic value beyond what is already available on university-owned land north of the ridge. While it is currently used by students and researchers in the earth sciences, these activities merely require access, not university ownership or management.

Although Claremont Canyon does not have unique value to the campus as an academic resource, it does have significant scenic and recreational value to the entire region as an integral element of the eastbay hills park system, and should remain as open space. The canyon does, on the other hand, represent a liability in terms of both ongoing campus expenditures for maintenance, security and fire hazard mitigation, and potential damage claims due to fires, landslides or other incidents originating on university land.

While previous reports have speculated on the long-term potential of Claremont Canyon as a site for faculty housing,¹⁷ since the firestorm of 1991 this must be viewed as an extremely unlikely scenario, given its steep terrain and poor access. If, therefore, its future is to remain as natural open space, and since it does not offer any unique academic resources to the campus, the campus should reconsider whether continued university management is in fact the best long-term solution.

The western portion of Claremont Canyon is owned and managed by the East Bay Regional Parks District. A transfer of control of the university lands to EBRP could lead to more efficient and effective management of the entire canyon as a scenic and recreational resource, and should be explored.

PROPOSAL 3. The LRDP 2020 should retain the designation of Claremont Canyon as reserve lands for future study.

ACTION 3.1. Initiate staff conversations with EBRP representatives on alternate management futures for Claremont Canyon. EBRP staff have confirmed their interest in pursuing such conversations at the confidential staff level.

However, in exploring such a transfer of control, whether through management or fee ownership, the university should also expect to be compensated by EBRP for the value it receives. The extensive EBRP land holdings may include particular sites which have more use value to the campus than to the district: one such site, located at the intersection of Centennial and Grizzly Peak, may have the potential for conversion to campus recreational or athletic fields: this site is examined further in RECREATION, below. Another site east of Clark Kerr campus, identified by EBRP, may have some potential for recreation and/or housing, although grades are steep.

CHAPARRAL HILL. The roughly 40 acre site at Chaparral Hill is defined by the ridgeline of Strawberry Canyon on the west and Grizzly Peak Boulevard on the east. Due to its relatively gentle slopes, it has been designated as a potential research site in numerous campus studies, including the 1962 and 1990 LRDPs. However, more intensive use of the site is severely constrained by its isolation. Protected natural open space surrounds the site: regional parklands on the north, east and south and the ESA on the west. The site lacks utility infrastructure, and campus shuttle service is unlikely to be feasible due to the distance from campus and the limited population the site could support.

As noted in the 1984 Task Force Report, the only feasible uses of Chaparral Hill are those for which isolation is an advantage. The report suggested 3 options: a conference retreat, faculty housing, and relocation of the FSB. ¹⁸ As examined further under HOUSING, other more promising campus options exist for both faculty housing and conference space, and these should be fully explored before Chaparral Hill is given serious consideration. The relocation of FSB is examined further in RESEARCH, below.

Another factor in the future use of Chaparral Hill the recent finding by the campus' consulting herpetologist that the south-facing slopes of the site represent a potential colonization habitat for the Alameda Whipsnake. ¹⁹ While some very limited development of the north-facing slopes might be possible, any human activity, particularly construction activity, would be constrained by the need to preserve the integrity of the adjacent habitat.

Because more intensive use of this site is limited by several factors, and because no clear demand presently exists for more intensive use, Chaparral Hill should continue to be designated as reserve lands. Further analysis is required to determine whether the site should be incorporated into the ESA.

PROPOSAL 4. The LRDP 2020 should retain the designation of Chaparral Hill as reserve lands for future study.

RESEARCH & PUBLIC SERVICE

In general, the critical linkages for all Hill Campus programs are with the core campus, rather than with each other. While a larger Hill Campus population might enable some improvement in services and amenities by enlarging the 'market' for them, it could also degrade conditions for those programs that *require* non-urbanized environs: the Ecological Study Area, the Botanical Garden, the Field Station for Behavioral Research, and the Strawberry Canyon Recreation Area.

Moreover, existing Hill Campus programs report significant problems in sustaining those critical linkages with the core campus, due in part to their physical isolation, and in part to the problems this isolation creates for transportation and infrastructure services. Since the trend in research is inexorably toward more interactive and collaborative endeavors, *future investment in new research space at UC Berkeley should, as prescribed in the Strategic Academic Plan, be concentrated at locations on and adjacent to the core campus.*

PROPOSAL 5. The 2020 LRDP should focus new capital investment in Hill Campus research facilities on renovation and new construction to serve existing Hill Campus programs.

BOTANICAL GARDEN. One such candidate for future renovation and expansion is the Botanical Garden, which hopes to triple its student, faculty and public visitors by 2020. ²⁰ Expansion of the Garden grounds to the east has been proposed in several previous campus plans, including the 1984 Task Force Report ²¹ and the 1990 LRDP, which recommends an expansion of roughly 40 acres.

PROPOSAL 6. The 2020 LRDP should confirm the future expansion of the Botanical Garden as described in the 1990 LRDP, and should accommodate the investments required to meet its objectives for program growth.

ACTION 6.1. Update the 1981 master plan for the Botanical Garden. The new master plan should describe the proposed site expansion, including how its interface with the Faunal Refuge Area is designed and managed, as well as the capital investments in grounds and structures required through 2020. A goal of the new master plan should be to improve the synergy of Botanical Garden and Ecological Study Area programs. The plan should be prepared in collaboration with the ESA management entity described in proposal 1, and the Garden should have an active role in ESA management.

LAWRENCE HALL OF SCIENCE. Although the current facility represents only a portion of the original plan, LHS has no near-term plans for physical expansion. While it projects the number of visitors to double by 2020, it expects to accommodate this growth through internal renovation to increase the amount of usable space.²² Capital investment at LHS, however, is required not only to reduce the nearly \$10 million in deferred maintenance,²³ but also to upgrade the presently inadequate communications infrastructure: the latter is examined further in INFRASTRUCTURE, below.

SILVER SPACE SCIENCES LABORATORY. While some further program growth within the 2020 timeframe is possible,²⁴ the recent completion of the new SSL building and the retrofit of the original building will meet SSL program needs for at least the near term, and there is some capacity for further expansion within the seismic support structures and on land adjacent to the existing facilities.

MATHEMATICAL SCIENCE RESEARCH INSTITUTE. MSRI does not anticipate significant program growth within the 2020 timeframe, and the existing facility plus the expansion now in design should meet future program needs.²⁵

FIELD STATION FOR BEHAVIORAL RESEARCH. Both the 1984 Task Force Report and the 1990 LRDP speculated on the relocation of the FSBR to a more remote site, i.e. Chaparral Hill. This idea seems to be inspired by the FSBR's need for isolation, and the concern this isolation might be compromised by the growth of neighboring research facilities, such as MSRI in 1985 and the SSL annex in 1998.

While the MSRI expansion is now in schematic design, no further expansions to SSL or MSRI are planned at this time. Moreover, as stated in proposal 5, new investment in Hill Campus research facilities through 2020 should focus on existing programs. Therefore, unless new program requirements lead to future expansion proposals by SSL or MSRI, the current level of isolation enjoyed by FSBR should not change significantly in the future, and the substantial investment required to relocate FSBR from its current site is not warranted.

While no new facilities are required at FSBR, several buildings and animal enclosures would benefit from renovation, and the existing communications infrastructure is inadequate: the latter is examined further in INFRASTRUCTURE, below.

PROPOSAL 7. The 2020 LRDP should assume the FSBR remains on its present site, at roughly current levels of activity.

RECREATION Haas Clubhouse has a poor seismic rating and significant deferred maintenance and, along with the pools, requires renovation or replacement during the 2020 LRDP timeframe. The Strawberry Canyon Recreation Area also shares with several other Hill Campus programs the problem of inadequate communications infrastructure, examined further in INFRASTRUCTURE.

However, the most critical *program* need for Recreation and Athletics is level field space. While the rugged terrain in the Hill Campus generally precludes this use, the EBRP site at Grizzly Peak and Centennial may be able to accommodate one or more regulation size playfields. The potential construction of playfields for campus or shared campus-public use on this site should be pursued if further engineering studies indicate it is feasible.

While campus use of this EBRP owned site might be pursued as part of a larger conversation over the transfer of Claremont Canyon, EBRP may also be receptive to the idea on its own merits: if the campus is able to provide the capital investment to build the playfields, a shared campus-public use arrangement may be acceptable to EBRP, and should be explored.

PROPOSAL 8. The 2020 LRDP should assume Strawberry Canyon Recreation Area remains in its present form, albeit with potential renovation and expansion, or replacement, of the buildings and pools in conjunction with seismic improvements.

ACTION 8.1. Prepare a master plan of the entire Strawberry Canyon complex as a first step in identifying the scope of seismic and other improvements to buildings and pools.

ACTION 8.2. Conduct a technical analysis of the EBRP-owned potential playfields site at Centennial and Grizzly Peak. Capital Projects has completed a topographic survey and initial concept study of this site, which suggest the site may have potential for redevelopment as practice and/or recreational fields, and merits further engineering analysis in terms of both grading and infrastructure requirements.

HOUSING One form of new capital investment that *should* be encouraged in the Hill Campus is faculty housing. The northwest promontory site is one potential location for housing, as proposed in the 1990 LRDP, but other sites should also be explored. Housing is not only a relatively adaptable and nondisruptive land use compared to large research facilities, it would also provide an after-hours presence in the Hill Campus that could improve safety and security. Moreover, a supply of good, reasonably priced faculty housing would provide a significant strategic benefit to the entire campus, including Hill Campus programs.

The study committee has also pointed out a substantial demand for housing for visiting scholars. MSRI alone is visited by over 1000 scholars each year, many for significant periods of time. This demand is not unique to the Hill Campus: many core campus departments also have substantial numbers of visiting scholars.

The campus conducted a survey of visitor housing needs in late 1997, but this survey focused on conference and other short-term visitors, in the context of a proposed downtown hotel and conference center. While the campus does need such a facility, downtown Berkeley is the best place for it, due to its scale and the access and services it would require.

The longer stays typical of visiting scholars, however, suggest an alternate housing type, more residential in character. This housing type would not involve extensive on-site conference facilities, would have modest service demands, and thus, if properly designed, could be suitable for one or more Hill Campus locations. LBNL has identified a similar need for visitor housing, and has already begun to investigate potential sites: future analyses of visitor housing by UC Berkeley should be conducted in conjunction with LBNL, as suggested in action 9.2.

PROPOSAL 9. Pending further technical analysis, the 2020 LRDP should designate up to 3 sites as reserve sites for faculty and/or visitor housing, as shown in figure 3.

Reserve site H1 is the northwest promontory site designated for housing in the 1990 LRDP, but enlarged to include the area north of Centennial Drive. Reserve site H2 is the current upper terraces parking lots: while further study is required, a mixed-use project that include both the replacement of existing parking and new terraced housing could make far better use of this already extensively altered site. Reserve site H3 is currently utilized by PPCS as a staging area, but due to the steep terrain and the proximity of the creek, this is a poor use of the site, as described above in CURRENT LAND USE.

ACTION 9.1. Conduct a survey of the entire UC Berkeley campus and LBNL to assess the demand for both short-term and long-term visitor housing. The campus survey is being administered by OSR: results are expected by spring 2003.

ACTION 9.2. Based on the survey results, request the campus' Real Estate Advisor to begin the initial steps toward third-party development of faculty and/or visitor housing on reserve sites H1 and H2, with Capital Projects technical support. These efforts should be pursued in collaboration with LBNL.

ACTION 9.3. Identify a long-term solution for those PPCS functions presently located on the Poultry Husbandry site. While PPCS may continue to use this site as an interim facility in the near term, an environmental study of the site should be performed to assess its impact on the water quality and riparian habitat of Chicken Creek, and prescribe mitigations commensurate with this interim use.

TRANSPORTATION

While Hill Campus programs have only limited interactions with one another, they all have strong and critical linkages to the core campus. There is a strong perception among the study committee that transit service to and from the core campus is inadequate, due both to the hours and frequency of service and, for some programs, the configuration of the route.

Except for the first and last runs, the hill shuttle presently originates at the Mining Circle, which is problematic for several Hill Campus constituencies: not only is the BART station located at the west end of campus, but so are the life-science students and faculty who use the Botanical Garden and the Ecological Study Area. Moreover, many study committee members report a need for more frequent service and for extended shuttle hours.

Some initiatives are already underway. First, under the fall schedule for the hill shuttle, headways will be decreased from 30 to 20 minutes during the peak a.m. and p.m. periods (roughly before 9:50 and after 4:50). P&T will assess the effectiveness of this change at the end of the semester. Second, the replacement of the hill bus has been planned for over two years: P&T has arranged to acquire several small (15-20 passenger) buses from AC Transit, but while these were expected this year, now they may not be available until 2003 or later: P&T is investigating a vendor lease as an alternate.

P&T has not received any formal requests for other service enhancements, and therefore have not assessed their potential cost or feasibility. In general, however, it is the policy of P&T to first try to accommodate such requests by adjusting existing shuttle routes and schedules, in ways that do not significantly increase costs. If these adjustments are not adequate to meet the need, the policy is to have the requesting departments cover the cost of further enhancements. P&T has offered to assess the cost of such enhancements, but the first step is to define those enhancements through a survey of Hill Campus programs.

ACTION 10.1. Conduct an opinion survey of Hill Campus programs to identify the transit improvements desired. Capital Projects has completed this survey: a summary of results is presented in the Appendix.

ACTION 10.2. Request Parking & Transportation to prepare a feasibility analysis of enhancements to hill shuttle service, based on the survey results. As part of this analysis, Parking & Transportation should determine if any of the desired service enhancements can be achieved through collaborative efforts with LBNL, which runs its own shuttle service.

INFRASTRUCTURE

Many Hill Campus programs report problems with utility services in general and communications service in particular, in terms of both capacity and reliability. With respect to utility systems (power, natural gas, water, steam, sewer and stormwater), it is more useful to assess these systems campus wide, since their adequacy is a function of system capacity as well as delivery. Such an assessment will be conducted as part of the 2020 LRDP update.

However, the infrastructure concern most often mentioned by far among study committee members is the adequacy of communications systems. While service has very recently been improved in some areas of the Hill Campus, a number of problems remain.

New fiber optic cable was recently run to SSL and to the Botanical Garden. The SSL line provides high bandwidth *system capacity* to the entire north end of the Hill Campus. However, the *conduit capacity* to extend this service to other local users may not presently be available, either because the existing conduit is full or no conduit exists.

This is a particular problem for Lawrence Hall of Science, where network capacity is already inadequate to serve its many educational programs, and for FSBR, which presently has only T1 service through Pac Bell. An engineering study is required to determine the cost and feasibility of extending high bandwidth service from the SSL terminus to LHS, MSRI and FSBR.

While the Botanical Garden has also recently obtained high bandwidth service at its administration building, the Strawberry Canyon Center and Recreation Area have only T1 service over copper cable. The cost of new fiber cable to these buildings from the core campus has been estimated at \$1 million for data service alone: this cost would increase significantly if voice services were improved as well. However, improved service could instead be obtained through ATT by extending fiber cable from the adjacent residential areas to Haas Clubhouse and Strawberry Canyon Center: the cost for service to the Clubhouse has been estimated at roughly \$100,000.²⁶

PROPOSAL 11. The 2020 LRDP update should include a comprehensive analysis of campus infrastructure capacity with respect to future campus growth and program evolution. This analysis should, moreover, reflect the basic principle that the entire campus, including the Hill Campus, should receive the same level of services and infrastructure.

■ NEXT STEPS

The proposals in the previous section will guide the preparation of the 2020 LRDP, which is now underway. However, the previous section also identifies a number of studies and other actions staff need to undertake in order to provide more specific guidance for individual sites or programs. The results of these studies will be forwarded to the study committee for review and comment as they are completed.

The administrative draft of the 2020 LRDP is scheduled to be completed and distributed for internal campus review in late spring 2003: the Hill Campus study committee will be requested to serve as reviewers of the administrative draft.

■ APPENDIX: SUMMARY OF HILL SHUTTLE SURVEY RESULTS

We received 170 responses to our hill shuttle survey. Of the total, 88 came from Space Sciences Laboratory, 51 from Lawrence Hall of Science, 21 from Mathematical Sciences Research Institute, 8 from the Botanical Garden and 2 from Recreational Sports.

To keep things simple, in the summary table below each result is presented as the 'percentage of total respondents who checked this box'. Some of the respondents left questions unanswered, so some of the percentages total less than 100% (or in the case of questions 3 and 4, less than 300%, since for those questions respondents were asked to make 3 selections). More detailed cross-tabular analysis is possible if desired: this summary just presents a brief overview of the survey results.

A number of respondents used the 'other' boxes in questions 3 and 4. While many of these comments are variations on the preset options already in the survey, the 'other' comments do reveal at least one significant concern the present options do not cover, as described below. Also, five respondents noted that, while shuttle headways are 20 minutes at peak am and pm hours, they are 30 minutes during the rest of the day. This was a flaw in the survey design, which refers only to the 20 minute headway, and staff regret any confusion this may have caused the respondents.

Overview. Perhaps the most significant finding is revealed in the answers to questions 1 and 5. Question 1 asks how often the respondent uses the shuttle now, while question 5 asks how often the respondent would use the shuttle if the service improvements s/he selected in question 4 were implemented. The results suggest shuttle demand may have limited upside potential: whereas 39% of respondents now use the shuttle for at least 3 round trips a week, this number would rise to only 55% if the suggested improvements were implemented. The percentage of respondents who would use the shuttle for at least 5 round trips per week would rise only from 23% to 28%.

Moreover, a clear majority of respondents, 63%, would not be willing to pay any more for shuttle service to fund the improvements they recommend. 24% would be willing to pay \$10 per month, and only 4% would pay \$20 per month. The survey results indicate that service improvements might result in only a modest increase in frequent ridership, while at the same time the campus might encounter resistance to any increase in fares to fund those improvements. On the other hand, only 4% of respondents indicated shuttle fares are too expensive now.

53% of respondents indicated they use the shuttle for trips to campus during the day, while another 16% indicated they use it for campus trips and home-to-work trips in roughly equal amounts. Given the greater use of the shuttle for trips to campus, it is perhaps not surprising that the most popular service improvements were those which are relevant to campus trips as well as to home-to-work trips: namely, extending every shuttle run to downtown Berkeley at 49%, and reducing shuttle headways at 46%. In contrast, extending the shuttle schedule to early morning, late evening and/or weekend hours may have greater importance to home-to-work trips, since the core campus is significantly less active during these times. It is worth noting, however, that weekend service could also be beneficial to visitors, who are not captured in this survey.

With respect to the comments entered in the 'other' boxes in questions 3 and 4, the complaint mentioned most often by far was the long duration of the journey from home to work via public transit, including the shuttle. 12% of all respondents made specific comments about *either* the duration of the multi-mode trip as a whole, *or* more specific comments about the poor linkages of the shuttle to AC, to BART, or to other campus shuttle routes.

Implications. The survey results suggest the most popular service improvements would be to extend all shuttle runs to west campus and to downtown Berkeley, and to reduce headways, particularly the 30 minute headways during mid-day. As the study committee has pointed out, trips by hill workers to the central campus often have west campus destinations, and many of those trips occur during mid-day.

However, the decision on which, if any, service improvements may be feasible for the hill shuttle are a function of cost as well as demand. The extension of shuttle hours, for example, while requested by less respondents than route extension or reduced headways, may also be less costly if they can be implemented merely by increasing driver hours rather than by also purchasing another vehicle.

As a next step, staff recommend the Director of Parking and Transportation review these findings and comment on the most promising areas for further investigation, from the perspective of campus transportation operations as a whole.

Hill Shuttle Survey Results (n=170)

1	How often do you use the campus hill shuttle?		
	Occasionally or less than once a week	60	35%
	1-2 round trips per week	43	25%
	At least 5 round trips per week	39	23%
	3-4 round trips per week	27	16%
2	What do you use the campus hill shuttle for?		
	Travel to and from central campus during the day	90	53%
	Travel to and from home	51	30%
	Both in relatively equal amounts	27	16%
3	If the hill shuttle is not your primary mode of transportation to and from the hills, why not? (select 3)		
	20 minute headways not frequent enough	38	22%
	Must drive due to personal trips before/after work	34	20%
	Shuttle doesn't run early/late enough	27	16%
	No direct service to west campus, have to transfer	23	14%
	Trip to/from campus takes too long	22	13%
	Shuttle doesn't run on Saturday/Sunday	22	13%
	Must drive due to work trips during the day	11	6%
	Prefer to carpool, vanpool or use other alternative	11	6%
	Shuttle fare too expensive	7	4%
	Prefer to drive because it's more pleasant	5	3%
	Prefer to take AC Transit (lines 8 or 65)	3	2%
	Don't feel safe taking/waiting for shuttle	2	1%
	Doesn't go to LBNL	1	1%
	Other	50	29%
4	Would you use the hill shuttle more often if it were changed so (select 3):		
	Every shuttle went to downtown Berkeley	83	49%
	The shuttle ran more frequently than every 20 min	78	46%
	The shuttle ran earlier in the morning (before 7:40 am) and/or later in the evening (after 7:40)	56	33%
	The shuttle ran on Saturday and Sunday	49	29%
	The shuttle was equipped to better accommodate bikes	28	16%
	The shuttle also served LBNL	3	2%
	Other	40	24%
5	If the changes you selected in question 4 were made, how often do you think you would use the shuttle?		
	At least one round trip per day	48	28%
	3-4 round trips per week	46	27%
	1-2 round trips per week	38	22%
	Occasionally or less than once a week	9	5%
	Never	1	1%
6	In order to fund the changes you selected in question 4, how much more would you be willing to pay for shuttle service?		
	No more per month	107	63%
	\$10 more per month	41	24%
	\$20 more per month	7	4%
	\$30 more per month	0	0%
	\$40 more per month	0	0%

Hill Shuttle Survey Results (cont)

7 Please give us your opinion on the rear exterior 5-bike racks found on some buses:

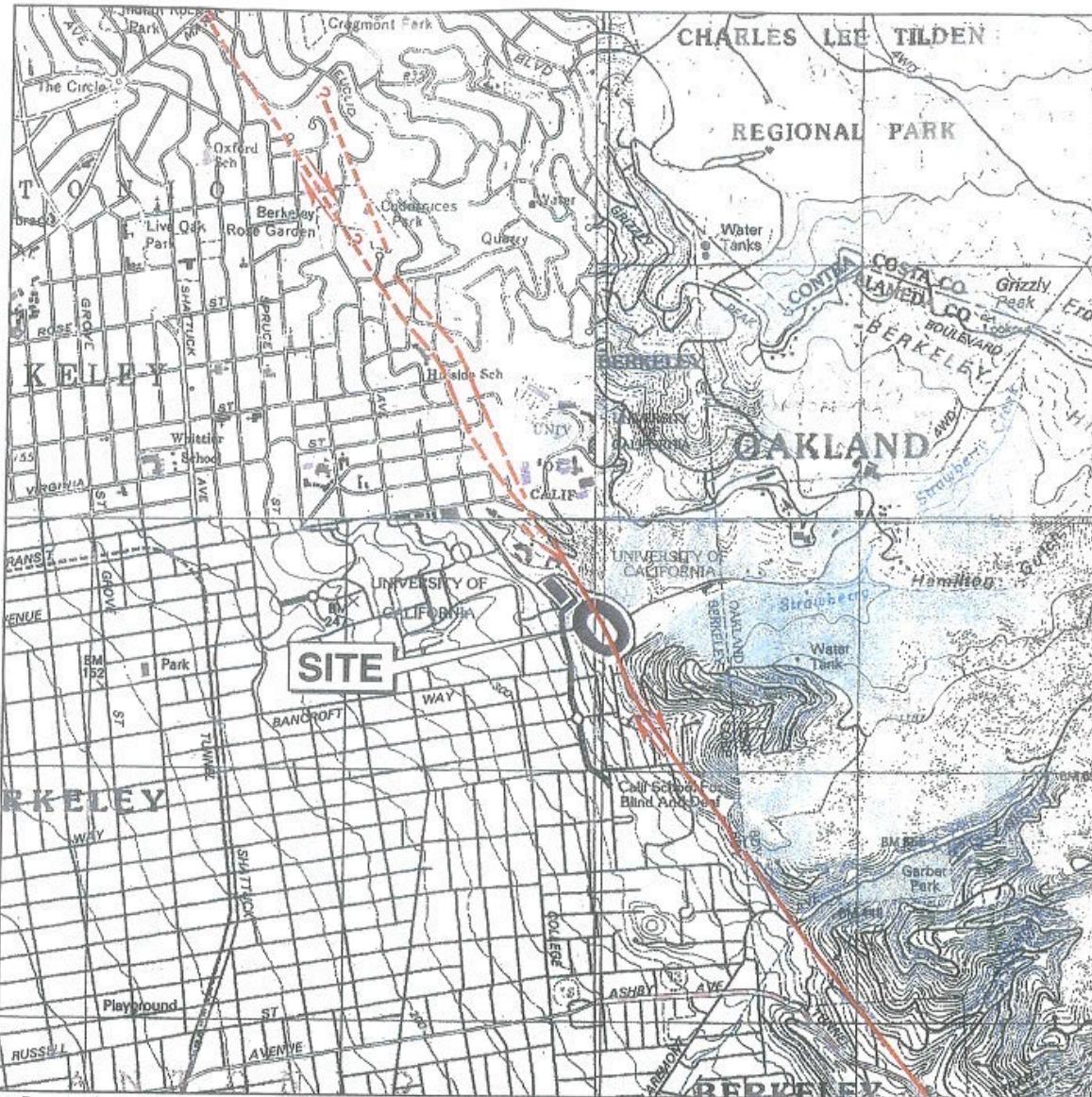
Convenient to use OR	18	14%
Difficult to use	19	15%
Adequate bike capacity OR	29	22%
Inadequate bike capacity	5	4%
I feel safe loading/unloading my bike OR	19	15%
I feel unsafe loading/unloading my bike	13	10%
The racks are damaging to my bike OR	16	12%
The racks are not damaging to my bike	12	9%

8 Please give us your opinion on the front exterior 2-bike racks found on some buses:

Convenient to use OR	32	19%
Difficult to use	2	1%
Adequate bike capacity OR	3	2%
Inadequate bike capacity	28	16%
I feel safe loading/unloading my bike OR	27	16%
I feel unsafe loading/unloading my bike	5	3%
The racks are damaging to my bike OR	2	1%
The racks are not damaging to my bike	26	15%

■ ENDNOTES

- ¹ UC Berkeley Chancellor Tien and LBNL Director Shank, *Letter of Cooperation Regarding Hill Area Management*, 29 March 1996.
- ² *UC Berkeley Long Range Development Plan 1990-2005*, page 31
- ³ *UC Berkeley Strategic Academic Plan*, <http://spc.vcbf.berkeley.edu/document/AcademicStrategicPlan.pdf>
- ⁴ History drawn from Helfand, *Campus Guide: University of California, Berkeley*, Princeton Architectural Press 2002 and Mandel, *Working Paper: Hill Area Update*, UC Berkeley Capital Projects July 2002
- ⁵ EBMUD conveyances of 20 March 1951 and 31 October 1961
- ⁶ Mandel, page 8
- ⁷ Bartoleme, *Hill Campus Study Committee Survey*, 13 May 2002
- ⁸ Mandel, page 28
- ⁹ Mandel, page 24
- ¹⁰ McBride and Beatty, *Management Plan for Strawberry and Claremont Canyons*, UC Berkeley Conservation and Environmental Quality Committee, 1979
- ¹¹ Mandel, page 42
- ¹² Mandel, page 38
- ¹³ Mandel, site inspection
- ¹⁴ Mandel, page 87
- ¹⁵ Mandel, page 87
- ¹⁶ LaPorte et al, *Hill Area Task Force Report: UC Berkeley Campus Space Plan*, April 1984
- ¹⁷ LaPorte et al, page 70
- ¹⁸ LaPorte et al, page 69
- ¹⁹ Mandel, page 49
- ²⁰ Botanical Garden, *Hill Campus Study Committee Survey*, 13 May 2002
- ²¹ LaPorte et al, page 28
- ²² Carmichael, *Hill Campus Study Committee Survey*, 13 May 2002
- ²³ Pacific Partners Consulting Group, *Model Results for UC Berkeley: UC Capital Renewal/Deferred Maintenance Study*, September 2000
- ²⁴ Lin, *Hill Campus Study Committee Survey*, 13 May 2002
- ²⁵ Eisenbud, *Hill Campus Study Committee Survey*, 13 May 2002
- ²⁶ Kim/Kreutzen, UC Communications & Network Services, conversation/e-mail 21 August 2002

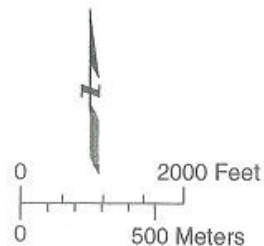


Base map from U.S.G.S Briones Valley, Oakland East, Oakland West, and Richmond, California 7.5' topographic quadrangles.

EXPLANATION

? - - - - - Fault trace, solid where accurately located, long dash where approximately located, short dash where inferred, query where uncertain; arrows show sense of lateral slip.

Note:
Hayward fault trace from California Division of Mines and Geology (1982).



SITE LOCATION MAP AND
LOCATION OF HAYWARD FAULT IN BERKELEY
California Memorial Stadium
University of California, Berkeley, California

Project No.
5442

Figure
1

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1/29/24, 6:20 PM

UC Berkeley Mail - Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project.



Planning Departmental <planning@berkeley.edu>

Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project.

1 message

Judi S. <judisierra@yahoo.com>
To: Planning@berkeley.edu

Mon, Jan 29, 2024 at 12:39 PM

RE: UC BERKELEY
CAL
SOFTBALL FIELD
RENOVATION
PROJECT

I oppose to the Cal softball field renovation project as it currently is proposed. After reading the DEIR I believe there was inadequate assessment of nocturnal wildlife. The area was surveyed at 9AM for an hour and a half. I have driven east on Centennial between 4-5AM for 30 years and have noted a variety of wildlife adjacent to the two current fields both in the parking lot, crossing Centennial and moving along the road on the north side. This includes a resident fox pair, deer from one to five with young in the spring, skunk and raccoons. Great horned owls perch and call in the nearby trees. Increased human activity and especially the lighting will have a profound impact. Increasing the light pole height from 5-53 ft. to 60-70 ft. and 20-30 foot candle to 70 foot candle is going to effect ambient light no matter how much it is shielded.

If the current situation with the football stadium lights on before dawn, blinding drivers, creating a huge safety issue as they come downhill, is any indication of how lights will be managed, I am doubly opposed.

I can only support alternative 1, 3, or 4. However lofty they are, sometimes all objectives can't be met.

I played Cal women's intramural sports pre- Title IX and it was fine.

Judi Sierra, class of '72

C6-1

C6-2

C6-3

C6-4

C6-5



Planning Departmental <planning@berkeley.edu>

plans to substantially upgrade the softball and rugby facilities at the bottom of Strawberry Canyon

Katie Calvert <katiemarycalvert@gmail.com>
To: planning@berkeley.edu

Mon, Jan 29, 2024 at 12:31 PM

I don't think that enough study has been done to determine if the planned new nighttime lighting for the rugby and softball fields will affect the area's wildlife, especially the bird life, which includes various raptors that hunt after dusk.

I urge a delay until a full, detailed study can be performed by biologists and experts in artificial lighting and nature.

Katherine Calvert
[1204 Talbot Ave, Berkeley, CA 94706](#)

C7-1

1/29/24, 6:26 PM

UC Berkeley Mail - "Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project."



Planning Departmental <planning@berkeley.edu>

"Draft EIR Comments: UC Berkeley Cal Softball Field Renovation Project."

Sara Baldwin <saranewravenna@gmail.com>

Mon, Jan 29, 2024 at 4:59 PM

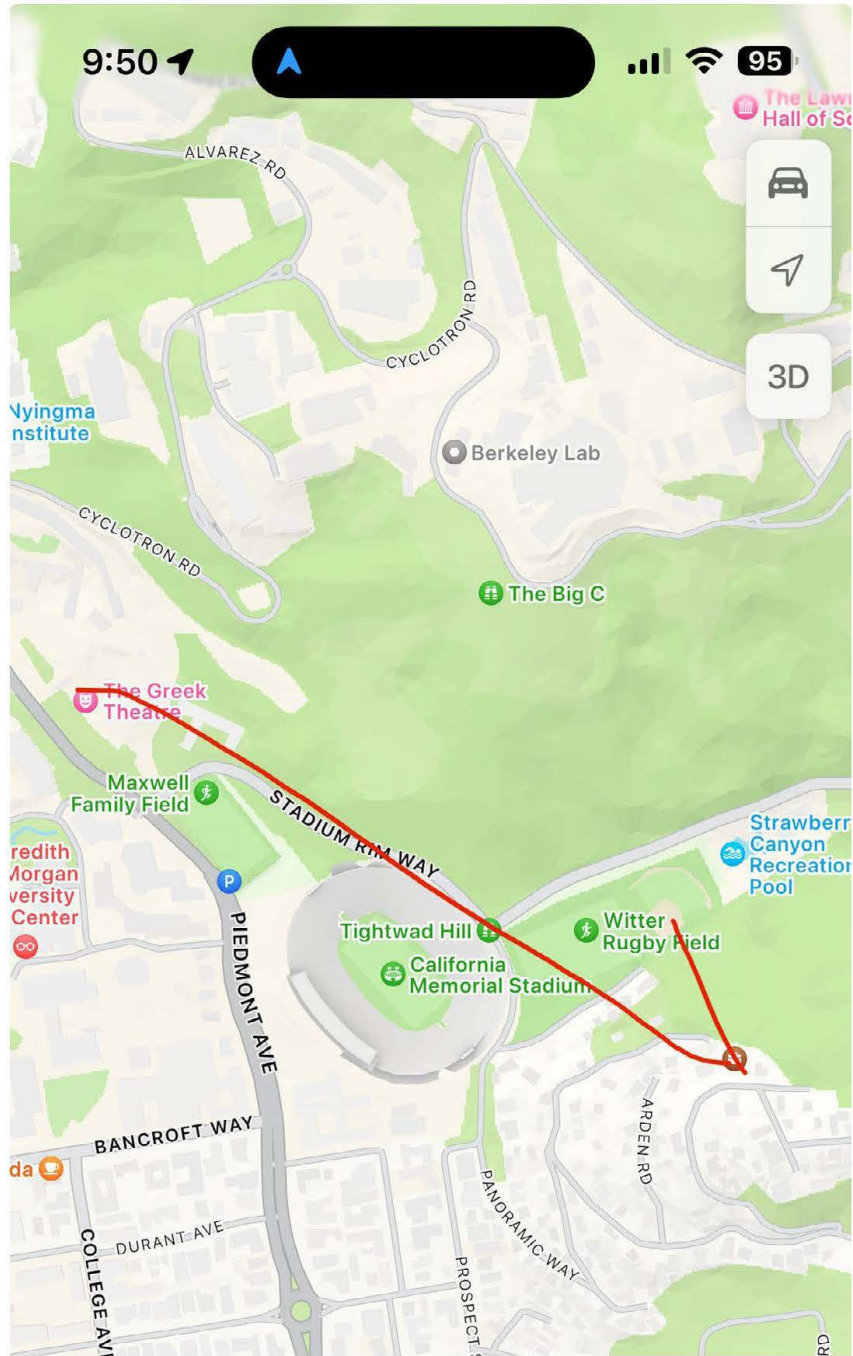
Reply-To: sara@sarabaldwin.com

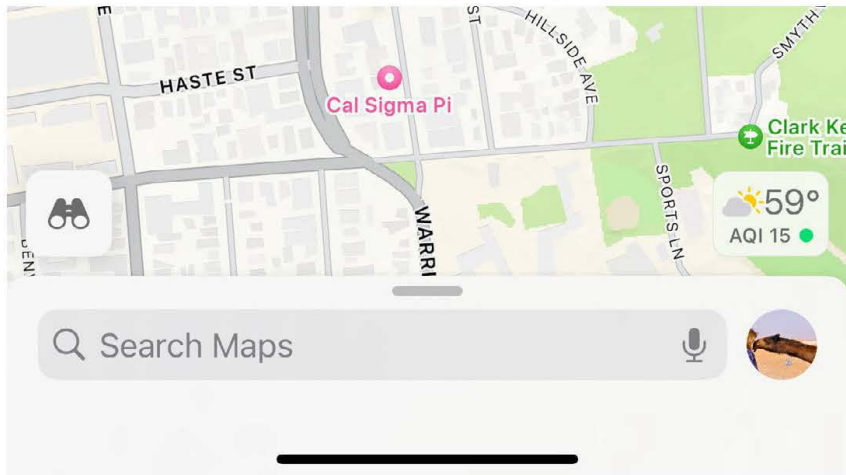
To: planning@berkeley.edu

To whom it may concern,

I write as a neighbor who overlooks the proposed softball field renovation. You can see my location here, along with the distance to the Greek theater as well as the softball field.

I C8-1





My concerns are as follows:

Noise: I don't see in the DEIR that you addressed the acoustical effects of the canyon on noise travel. I don't see that anyone measured realistic sounds/music/bats cracking/broadcasting amplification on upper Mosswood road or Panoramic. The grade is very steep from the softball field to our residences, and i hear softball practices like they are next door. I can hum along to songs I know during Greek theater concerts and sometimes find the noise objectionable, even INSIDE my house. You can see that the softball field is 4x closer. It seems impossible for the future noise pollution to not be extremely onerous. Especially for days and nights in a row during the hosting of tournaments. If you add in the removal of a bunch of vegetation for the 100' buffer (destroying wildlife habitat), the noise will be worse.

C8-2

100' buffer and VHFHSZ: I appreciate the attention to the VHFHSZ concern. However, I think much more analysis needs to be undertaken. Introducing up to 1500 partying people to a VHFHSZ approximately one day/night every two weeks (25 games per year) does not seem responsible at all. I have spoken to an employee Berkeley City club and they say that traffic gets congested and the partying in the dorms is very disruptive. Good luck getting Emergency Services to access anyone on Panoramic Hill if there's a fire, especially if it happens to be when there's a concert at the Greek AND a softball game. Or if God forbid residents need to escape off of Panoramic hill.

C8-3

Flora and Fauna: I can't believe that the wood rat is the only animal that will be Adversely impacted. Between my house and the softball field, I've seen skunks, possums, raccoons, hundreds of deer, turkeys, nests of hawks, Nests of owls, hundreds of songbirds, foxes with babies, etc. your 100 foot buffer will certainly disrupt the quiet enjoyment of dozens of mammal species, not including humans.

C8-4

Additionally, i see that nobody knows where the Strawberry creek culverts are? I also do not see where anybody is Addressing the fact that this field is on top of strawberry Creek.

C8-5

Lighting: I don't see where anyone measured the lighting impacts on my neighborhood. The only mockup I see is someone on lower Mosswood envisioned what the facility will look like. My house overlooks the field, my neighbors house overlooks the field. It might be possible that I will actually see 85 foot towers of lights. Plus, I cannot imagine the sky glow being reduced. This very much concerns me and my neighbors.

C8-6

Respectfully

Sara Baldwin
48 Mosswood rd.

To:

UC Berkeley 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

Dear Ms. Patil, the local residents of Panoramic Hill have many areas of concern regarding the proposed construction of a new Softball Field adjacent to our neighborhood, below are comments on just two of those issues of concern.

C9-1

**1) Failure to Include Past Projects - and increases in programatic use
- in the DEIR Cumulative Impacts Analysis**

As a starting point in discussing cumulative impacts of this and other UC projects in the area it is relevant to first understand that many residents of Panoramic Hill in the area that borders the proposed project have lived in the neighborhood for decades. For example on Canyon Road, Mosswood Road and the near end of Arden Road there are at least 16 homes where the residents first moved into the neighborhood between 1963 and 1993.

The year 1993 was chosen in this discussion because that year represents the beginning of the modern expansion and intensification of use of the Strawberry Canyon area which continues to this day and of which the proposed project is a continuation.

For the 16 households which lived in the area in 1993 here is a simple factual description of the baseline activities which were experienced by nearby

C9-2

neighbors. At that time there were no intercollegiate sports activities in the immediate project area or the adjoining Rugby complex area. Historically, the project area was used mostly during daytime hours for intramural student activities such as frisbee, soccer, or other games. In the northwest corner of the area were several tennis courts. Low level incandescent lighting was used on the field and tennis courts. There were no public address systems nor amplified music in this area; the most noticeable noise generation was often the sound of tennis balls being hit at the tennis courts.

C9-2
Cont.

California Memorial Stadium (CMS) during this time period typically held seven or fewer daytime football games per year. Night games were rare and when they did occur temporary lights were brought in on trucks. According to the Campus' records, only seven night games total had ever been played up until the mid 1990s. Use of the public address system in the stadium was rare outside of football games. Noise generation from programatic daily use of CMS before 1993 was significantly less at that time, music or PA use was significantly lower, no music was played during practices for example. Nighttime use of CMS was very modest.

C9-3

The combined sports facilities in the Strawberry Canyon area have experienced a repeated intensification of use since approximately 1993. The facilities in this area include, California Memorial Stadium (CMS), the Student Athlete High Performance Center, Maxwell Family Field, Witter Rugby Field, Strawberry Softball Field and the Hass Clubhouse / Strawberry Canyon Pool Facility.

Each of these facilities has generated substantial programatic increases in use over the past 30 years, with the exception of the Strawberry Pool. Of particular significance for local neighbors are the increases in noise, light/glare, and traffic due to increased use of the facilities. It would be possible for the Campus to track the increased impacts on local residents by reading the comment letters which neighbors have submitted to all of the CEQA project studies in the area since 1993.

C9-4

Over that time period; Maxwell Family Field has been redeveloped twice, Witter Rugby Field has had three separate construction, expansion or upgrade projects, the Student Athlete High Performance Center was constructed and upgraded, CMS experienced a massive reconstruction and expansion, later including the

C9-5

addition of the Korea Visitor center, and finally the Strawberry Softball Field was constructed, has had subsequent additions and now has the proposed expansion project which we discuss here. Accompanying all this expansion has been ever increasing noise, glare and traffic.

In many of the comments submitted to the campus for previous projects you will encounter statements that residents felt overwhelmed by the increases that had already occurred. Essentially stating - “ There is too much noise and glare already! How can you possible be proposing to add more?”

Having described this existing state of affairs we now turn to the cumulative impacts analysis section of the DEIR.

Section 4.1.2.2 of the DEIR begins by stating;

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.

The DEIR goes on to state that:

This EIR uses a list-based approach for the development of the cumulative projects.

What follows in the DEIR is a table of 31 “Projects”, but that table *ONLY INCLUDES* current and future projects; no past projects in the Strawberry Canyon Sports complex are included, furthermore, none of the programmatic increases in use of the nearby facilities is considered as part of an assessment of cumulative impact. Even though the Campus clearly understands that incremental increases in the noise, glare and traffic increase are a major issue in the area; as acknowledged on page 1-6 of the Executive Summary:

1.6 KNOWN AREAS OF CONTROVERSY

C9-5
Cont.

C9-6

C9-7

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.
- ▪ •CulturalResources.PotentialimpactsrelatedtothePanoramicHillHistoricDistrictandStrawberryCanyon.
- ▪ •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.

C9-7
Cont.

It is our belief that this DEIR fails in its requirement to assess Cumulative Impacts because it does not include any previous projects in the area as part of its

C9-8

cumulative impact analysis, nor does it include the sometimes substantial un-acknowledge or un-assessed programatic increases in use in the area. We believe the campus needs to update this DEIR cumulative analysis by including the information and assumptions made in previous projects.

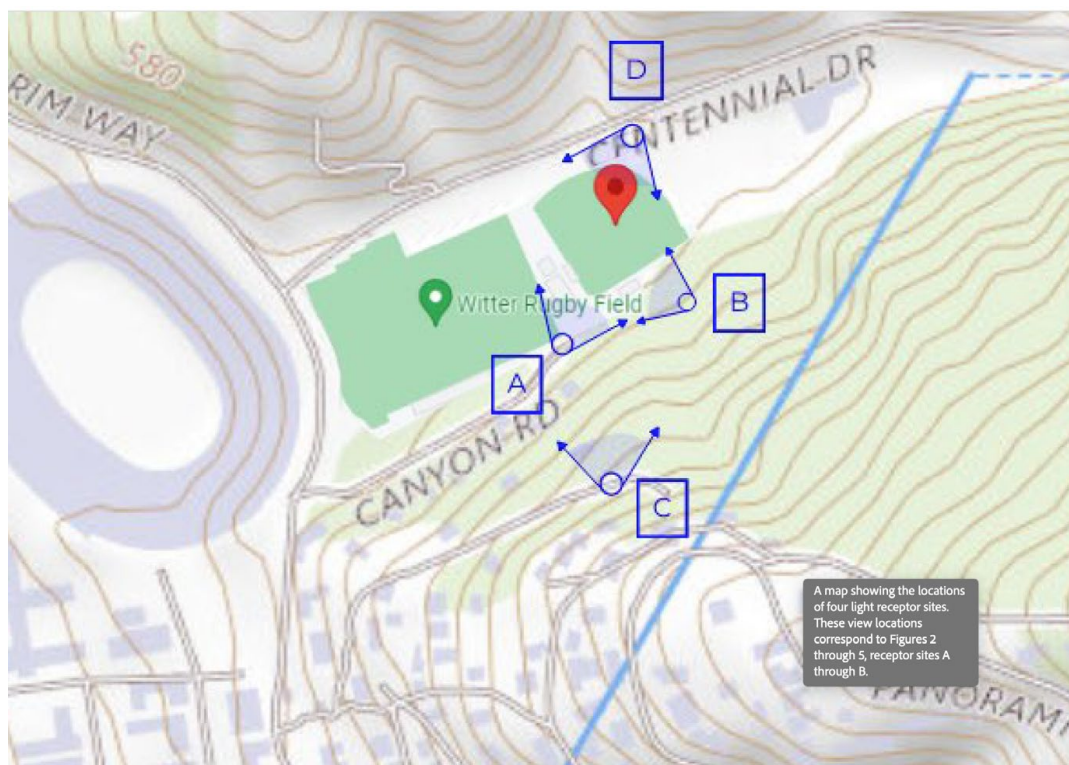
C9-8
Cont.

2) Failure to include nearby homes in the assessment of lighting / glare impacts

There is a substantial grouping of homes near the project site, none of which are included as receptor sites in the lighting and glare analysis. The analysis chose four “receptor sites”, three of which are random spots in the woods and the fourth location is in a parking lot. None of the receptor sites are representative of actual receptors ie, neighbors whose bedrooms face the proposed project.

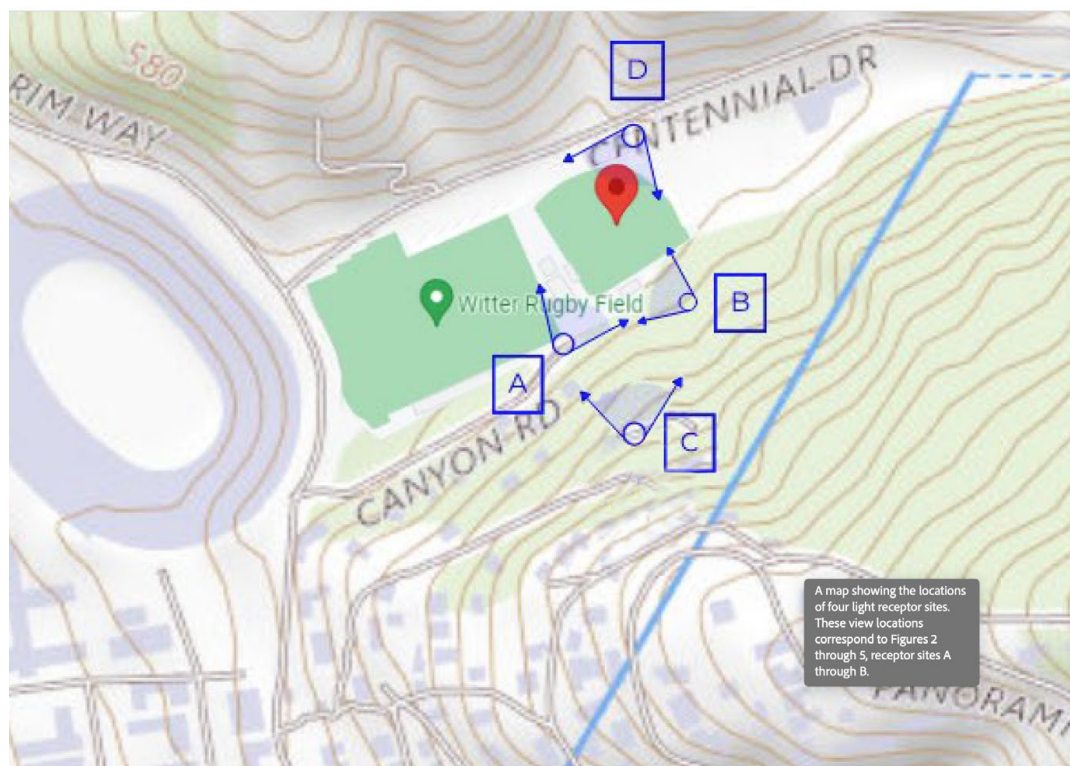
The analysis focuses on wooded areas and uses maps which obscure the presence of homes in the area.

For example, here is a section of the map include in the DEIR appendices showing positions of the “receptor sites” for glare analysis.



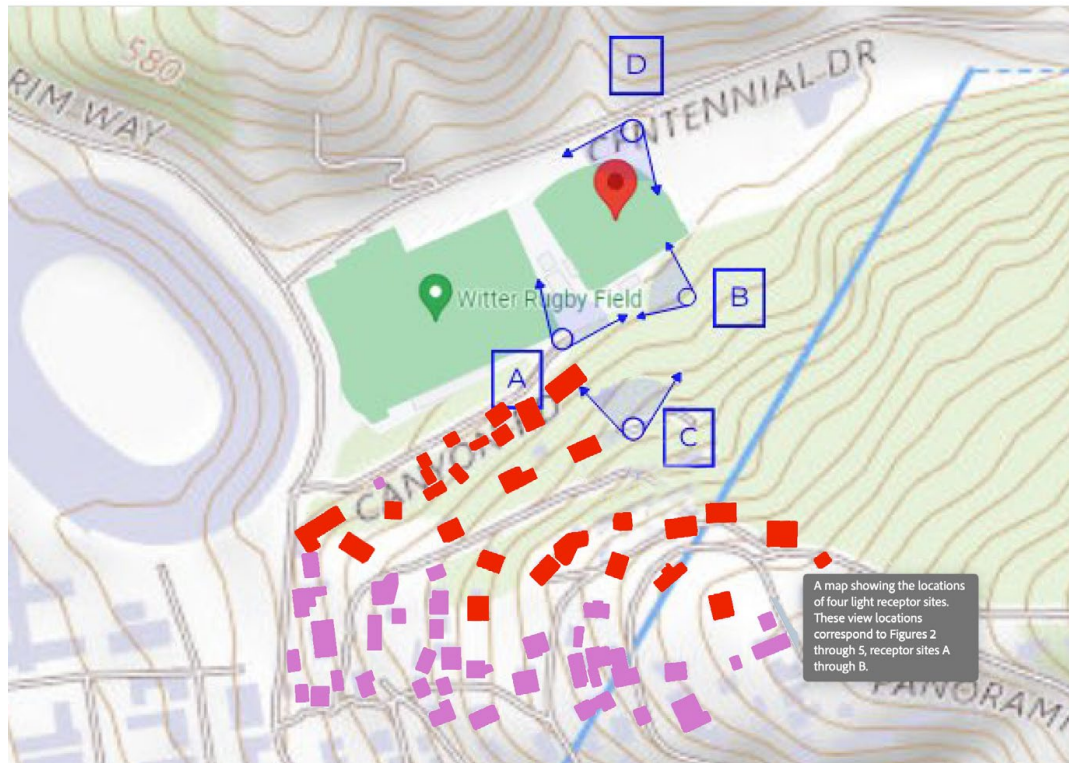
C9-9

Checking the photo provided in the DEIR for site “C” reveals that this map incorrectly identifies the actual physical location of site “C”, which according to the photo is actually many yards further north. An accurate map would show site “C” approximately as shown in the version we have updated below.



C9-10

The map used by the Campus here is also very hazy in its depiction of homes in the area. Below is a version of this map with homes included. The homes which may have a view of the project are shown in red.



C9-11

The analysis also fails to anticipate or address the direct views of the new lighting poles and units which would be part of the project.

For example, the current lighting poles at the site are approximately 50 feet in height, while the new poles will be of 70 to 90 feet in height. Below is a rough simulation of the difference in height, with two new poles roughly placed at approximately 80 feet in height for quick reference.

C9-12



C9-12
Cont.

This change in elevation of light sources will put these lighting units in direct view of many neighbors.

Just as an initial example, let's take a real world look at how the elevation of the new lights facing the hillside will line up in relation to the elevation of homes and bedrooms on the hill.

The general elevation of the softball project is 495 feet above sea level.
Therefore, the new lights will be an elevation of 565 to 585 feet.

Bedrooms facing the canyon at 37 Mosswood are at approximately 595 feet.

Bedrooms at 29 Mosswood facing the canyon are at approximately 580 feet

Bedrooms at 21 Mosswood are at approximately 570 feet.

The direct view of new lighting is never acknowledged or studied in the DEIR.

We look forward to an updated document that addresses these issues.

C9-13

C9-14

Thanks for your consideration.

Michael Kelly
President, Panoramic Hill Association

APPENDIX B

Response to Letter B5, Exhibit A (Noise)

MEMORANDUM

To: Shraddha Navalli Patil, UC Berkeley
From: Jonathan Leech, INCE, Dudek
Subject: Review of Wilson Ihrig January 2024 Comment Letter on Noise Section
Cal Softball Field Renovation Project, Draft Environmental Impact Report
Date: June 25, 2024
Attachment(s): A. Inputs for SoundPlan Modeling of Cal Softball Field Renovation Project Maximum Event
B. Resume for Jonathan V. Leech, INCE

This memorandum presents responses to the Wilson Ihrig correspondence of 29 January 2024 entitled *Cal Softball Field Renovation Project, Draft Environmental Report, December 2023, Review of Noise Impact Analysis*, prepared by Darek L. Watry. Comments by Mr. Watry were included as Exhibit A to Letter B5, which is included in its entirety in Appendix A of the Cal Softball Renovation Project Final EIR). Each comment letter in Final EIR Appendix A has been bracketed to number individual comments within each letter. This memorandum includes verbatim comments from Exhibit A of Letter B5, followed by responses to each comment. If a comment includes tables and/or figures, those are referenced in the comment and can be viewed in the bracketed letter B5 included in Final EIR Appendix A.

Dudek has been preparing environmental review documents to satisfy the California Environmental Quality Act (CEQA) continuously since the founding of our Environmental Division in 1983, having completed over 3,000 CEQA documents (including Environmental Impact Reports and Mitigated Negative Declarations) to date. Each of these CEQA documents has included evaluation of environmental noise, and Dudek has employed full time acoustic professionals continuously since approximately 1990. The acousticians that prepared Draft EIR Section 4.5, Noise include Jonathan Leech (a member of the Institute of Noise Control Engineers [INCE] that has 40 years of experience with CEQA document preparation) and Michael Carr (a member of INCE with 17 years of CEQA document preparation experience). The Dudek noise team also uses industry-standard acoustical programs such as the FHWA Roadway Construction Noise Model (RCNM) and Traffic Noise Model (TNM), the Federal Rail Administration CREATE rail noise model, and commercially supported three-dimensional noise prediction software including SoundPLAN and CADNA. The Dudek noise team is therefore fully qualified and well experienced to complete environmental noise studies for proposed land uses ranging from university level athletic stadiums to the noise element of a general plan that encompasses an entire community. Attachment A contains the requested inputs to the SoundPlan modeling conducted for the proposed project. Attachment B contains Mr. Leech's curriculum vitae.

B5-37 Comment. In July 2020, I reviewed the noise section of the Addendum to The University of California, Berkeley 2020 Long Range Development Plan Environmental Impact Report for Levine-Fricke Softball Field Improvements Project, July 2020 (“July 2020 Addendum”) for the subject project proposed in Berkeley, California. Since that time, the project sponsor, The University of California at Berkeley, undertook the preparation of a Draft Environmental Impact Report:

Cal Softball Field Renovation Project - Draft Environmental Impact Report (“DEIR”) State Clearinghouse Number: 2022110035 U. C. Berkeley, December 2023

This letter presents our comments on this DEIR document.

Wilson Ihrig, Acoustical Consultants, has practiced exclusively in the field of acoustics since 1966. During our 58 years of operation, we have prepared hundreds of noise studies for Environmental Impact Reports and Statements. We have one of the largest technical laboratories in the acoustical consulting industry. We also regularly utilize industry-standard acoustical programs such as Environmental Noise Model (ENM), Traffic Noise Model (TNM), SoundPLAN, and CADNA. In short, we are well qualified to prepare environmental noise studies and review studies prepared by others.

Response. The comment identifies that Wilson Ihrig reviewed the Draft EIR for the proposed project and presents a summary of Wilson Ihrig’s qualifications to provide this review.

Dudek has been preparing environmental review documents to satisfy the California Environmental Quality Act (CEQA) continuously since the founding of our Environmental Division in 1983, having completed over 3,000 CEQA documents (including Environmental Impact Reports and Mitigated Negative Declarations) to date. Each of these CEQA documents has included evaluation of environmental noise, and Dudek has employed full time acoustic professionals continuously since approximately 1990. The acousticians that prepared Draft EIR Section 4.5, Noise include Jonathan Leech (a member of INCE that has 40 years of experience with CEQA document preparation) and Michael Carr (a member of INCE with 17 years of CEQA document preparation experience). The Dudek noise team also uses industry-standard acoustical programs such as the FHWA Roadway Construction Noise Model (RCNM) and Traffic Noise Model (TNM), the Federal Rail Administration CREATE rail noise model, and commercially supported three-dimensional noise prediction software including SoundPLAN and CADNA. The Dudek noise team is therefore fully qualified noise experts and well experienced to complete environmental noise studies for proposed land uses ranging from university level athletic stadiums to the noise element of a general plan that encompasses an entire community. See responses to individual comments below.

B5-38 Comment. General Comments About Athletic Noise

Residents in the area near the Cal Softball Field and the adjacent Witter Rugby Field are not unique in their concern about sports facility noise. I have previously been involved in numerous matters in which such noise was contentious, including high school sports field developments in Albany and the Brentwood neighborhood of Los Angeles, a Little League field development in Atherton, and a batting cage in Castro Valley. Sports noises are unnatural, unusual, in the ears of many, unnecessary, and may also potentially be loud. These are all factors that many cities take into consideration when determining if a noise is unreasonable and, therefore, prohibited. Many cities include in their noise control regulations a list of factors to be considered in assessing a noise impact similar to the following taken from the California Model Noise Ordinance:

1. The sound level of the objectionable noise.
2. The sound level of the ambient noise.
3. The proximity of the noise to residential sleeping facilities.
4. The nature and zoning of the area within which the noise emanates.
5. The number of persons affected by the noise source.
6. The time of day or night the noise occurs.
7. The duration of the noise and its tonal, informational, or musical content.
8. Whether the noise is continuous, recurrent, or intermittent.
9. Whether the noise is produced by a commercial or noncommercial activity.¹

One key point of these factors is recognizing that the quantitative level of noise in decibels, while important, is not the sole factor in determining whether a noise is acceptable to the community.

Footnote:

¹ *Model Community Noise Control Ordinance*, Office of Noise Control, California Department of Health, April 1977.

Response. Noise generated from athletic facilities can often be distinguished from other community noise sources such as roadway traffic, stationary mechanical equipment, and landscaping maintenance activities, although each of these sources could be categorized as “unnatural” (i.e., not originating from nature). And while certain members of any community may find athletic facility noise “unnecessary” there are also members of every community that are avid fans of athletic competitions and who take no exception to the sounds associated with athletic facilities.

In this regard, it should be noted that the Cal women’s softball field was opened in the current location in 1995, nearly 30 years ago. The University analyzed impacts of building a specific women’s softball field in 1992. At the time, the existing noise from the existing field was characterized as follows:

“Noise is generated by players and spectators of a variety of recreational and sports activities conducted on the field. The greatest sources of noise related to softball, soccer and rugby play on the fields is human vocalization (e.g., spectator cheering and shouting during competitive play and coaches’ instructions) and referees’ whistles. Noise from tennis playing typically consists of players’ voices and the sounds of tennis balls bouncing off pavement or hitting racket strings. The softball facility is equipped with an amplified sound system which is used for playing music during pre-game practice and for announcements during softball competitions. The speakers are aimed upward and broadcast sound widely outward, exposing nearby residents to these amplified sounds.” (UC Berkeley 1992)

Noise associated with renovation of the field at that time was explained as follows:

“As the project involves reconfiguration and upgrading of the existing recreational facilities, long-term noise levels from normal operation of the recreation facilities are not expected to increase beyond current levels. Implementation of the project is expected to reduce traffic volumes associated with the project site, resulting in a slight (but most likely unnoticeable) reduction in traffic noise in the project area. The field area would continue to be used for intercollegiate and intramural sports activities and the level and types of various sports-related noises generated at

the site would, therefore, generally remain constant. The project would include installation of a new amplified sound system for the softball field designed to project sound directly onto the softball field rather than upwards. This would thereby reduce the level of amplified noise in the residential area to the south of the project area. The use of powered leaf blowers and a powered lawnmower is part of routine maintenance of the facility. Use of this equipment would continue after implementation of the project.” (UC Berkeley 1992)

Thus softball-related sound has been a component of the community noise environment for the residential neighborhoods in the project vicinity across a period in which many, if not most, of the current homeowners acquired their properties. Given the 30-year history of the facility, it must be considered a reasonable assumption that collegiate level softball competition will continue to exist in the same location for the foreseeable future. Consequently, because softball-related noise is currently generated from the project site and would continue to have the same composition of noise sources under the project, it is both appropriate and meaningful to compare the existing and predicted noise exposure levels at residential receivers using a quantitative metric, the average sound level dBA L_{eq} (also called the equivalent sound level, which represents the logarithmic average of varying instantaneous sound levels over a given period, usually one hour in duration). In addition, softball games would not extend later than 10 p.m. and would therefore not be a source of potential sleep disturbance in the nighttime period for vicinity residences.

B5-39 Comment. Dearth of Details about DEIR Noise Analysis

Noise analysis calculations start with a source noise level, typically provided as a sound pressure level at a given distance but sometimes as a sound power level (which is independent of distance). The July 2020 Addendum provided some information about the source noise levels based on measurements that had been made at a Cal softball game in March 2019. Information about the crowd noise levels and the PA system noise levels were provided. The DEIR analysis lacks any such information stating only that “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).” [DEIR at p. 4.5-23]

I have reviewed the Hayne paper, and of particular note is this line, “Using these factors as a basis, a series of controlled and uncontrolled experiments have been conducted in order to derive a set of equations that are suitable for use by consultants to predict the noise emissions from small to medium sized crowds (up to 100 people) located in outdoor spaces.” [Hayne, et al., 2011; emphasis added] As the subject project analyzes noise from much larger crowds – 1,000 to 1,500 people – it is completely unclear how the noise from spectators has been modeled in the DEIR analysis. As for the PA, the DEIR states, “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.” Clearly, without knowledge of the crowd noise, this relative reference is relatively useless.

Purportedly, the DEIR preparers somehow used the Hayne data in a commercially-available software package called SoundPlan, a package we ourselves use. At a minimum, the DEIR should provide the input levels used for the analysis.

Response. The July 2020 Addendum did provide a summary of near-distance sound pressure level measurements from a Cal softball game in March 2019, and identified these as source levels for noise prediction at selected nearby residences associated with anticipated spectator attendance with the proposed project. Noise prediction in the 2020 Addendum was completed using standardized equations for outdoor noise attenuation with distance, and the applicable equations were also identified in the Noise Section discussion. With this relatively simple approach to noise prediction, the identification of source levels and included equations is appropriate in the Noise Section and is meaningful to any person reviewing the discussion.

For the 2023 Draft EIR, to provide a more robust prediction of noise levels from softball games at the renovated facility, Dudek employed a three-dimensional commercially available software package called SoundPlan. Draft EIR Section 4.5, Noise provides a high-level summary of the general inputs and detailed SoundPlan results for the prediction of future softball game events with the proposed project. In response to this comment, Attachment A to this memorandum includes the SoundPlan model inputs for the project maximum and typical events.

With regard to the Hayne paper, the researchers conclude by providing an equation for predicting the sound power (L_{WAeq}) associated with a crowd size of “N” participants. The equation is:

$$L_{WAeq} = 15 \log N + 64 \text{ dB(A)}$$

The researchers (Hayne et al) suggest the equation would be suitable to evaluate crowds up to approximately 100 in size as a point source, and we generally concur with this suggestion, primarily because crowds with substantially larger participant numbers would occupy a greater area for which treatment as a point source would likely be less accurate. To ensure accuracy of noise generation effects for the crowd sizes that could be accommodated with the proposed project, Dudek used the above equation to derive the sound power level for crowds up to 1,500 persons but entered the crowd noise as an “area source”, rather than a point source, in SoundPlan. Entering the crowd noise as an area source in SoundPlan remedies the possible inaccuracy in the crowd noise equation because it defines the entire perimeter of the spectator seating area, and treats that entire area as the source, rather than using a point near the center of the area as the source. See the SoundPlan inputs (Attachment A), which show expressions that correlate the 2011 Hayne paper reference decibels with increasing spectator quantities. The crowd noise was rendered as a single area-type source with “wings” stretching northeast and northwest facing the field/diamond and with sound power level distributed evenly across an emission area of approximately 710 square meters (7,638 square feet). See SoundPlan inputs attached to this memorandum (Attachment A).

With respect to the modeling of noise from the public address (PA) system, the public address speaker system was rendered as a set of twelve point-type sources, in four clusters of three and positioned at distances along the north side of the main building overlooking the seating area wings. These speakers are positioned 9 to 10 meters above grade, with speaker directivity angled in such a manner so that each cluster projects sound in a roughly semicircular manner over the nearest portion of the crowd seating areas. The source sound level for each speaker was input as a sound power 6 dBA (L_{WAeq}) greater than the crowd noise source level (described above). See SoundPlan inputs attached to this memorandum (Attachment A).

B5-40 Comment. Another very pertinent factor in this situation is the topography of the area around the project site. Many, not to say ‘most’, of the homes on Panoramic Hill overlook the project site and the elevated far side of the appropriately named Strawberry Canyon may also come into play by containing acoustical energy (noise) in the canyon. Yet, the DEIR only discusses the most basic analysis of outdoor sound attenuation in Section 4.5.1.2 ACOUSTIC FUNDAMENTALS and elsewhere. The DEIR states in two places (p. 4.5-3 and 4.5-24) that sound from a point source attenuates at 6 dB per doubling of distance over hard surfaces and 7.5 dB per doubling of distance over soft surfaces. Those values are only correct when the topology is flat, which the DEIR notes. However, it never explicitly states that the topography is considered nor does it comment on the effective attenuation rates given its calculation results.

Response. The topography of adjacent ridges/canyons and ground surface of the project area was added as a layer in the SoundPlan model as “DGM triangles” assembled from elevation points that then form a three-dimensional map within the model space (see Attachment A for a screen capture illustrating the three-dimensional topography imported to the SoundPlan model space). Sound sources in SoundPlan were each plotted, as were each of the receiver points (representing residences). See the SoundPlan inputs in Attachment A for the inputs related to the locations of sound sources and modeled receivers, as well as for topographic conditions for the area containing the adjacent residences. Exterior sound attenuation behavior in the SoundPlan model is calculated based upon the distribution of sound sources and receivers, existence of barriers (i.e., the facility structure) between sources and receivers, and the topography between sound sources and receivers.

B5-41 Comment. Transparency and disclosure are part and parcel of the CEQA environmental review process. The DEIR needs to provide a much better description of the SoundPlan model which is otherwise a “black box” that cannot be scrutinized. The DEIR needs to provide much more information about crowd noise source levels, how the future softball stands and press box were accounted for, how the PA system speaker output was modeled, and how the topography of the area around the project site was incorporated in the model.

Response. See Response to Comment B5-39 for a discussion of crowd and public address system source noise levels. See Response to Comment B5-40 for a discussion of how the adjacent topography of the area around the project site was incorporated in the SoundPlan model.

With regard to how the softball stands and press box were accounted for in SoundPlan, the “main” facility structure was modeled as a solid building 6.1 meters (20 feet) tall above grade, with an additional rear wall (i.e., behind seating areas) extending upward from the southern façade of the main building an additional 15 feet above the building top surface; thus the top height of this rear building wall above the elevation of the softball playing field is 35 feet. The press box was entered into the model as a solid building stacked atop the main building and also having a top surface height of 35 feet above grade level (the press box would occupy a portion of the upper deck and would not extend above the rear wall in other areas of the top level of the building). See SoundPlan inputs attached to this memorandum (Attachment A).

To calibrate noise level predictions from SoundPlan, the SoundPlan model was run based on the existing facility configuration (i.e., spectator seating areas and public address system speaker locations) and April 16, 2022, game attendance (785 spectators), and the predicted noise levels were compared to the measured noise levels at monitoring locations LT1-LT4 (see Draft EIR Figure 4.5-1 for these locations). Based on the comparison of predicted to measured noise levels, the ground absorption factor in SoundPlan was adjusted to 0.25 (where a value of 0 represents full sound reflection from the ground

surface and a value of 1 represents full sound absorption from the ground surface). This ground absorption coefficient was then incorporated into the model for all runs that address the renovated facility configuration.

B5-42 Comment. Inappropriate and Misapplied Standard for Softball Game Noise

The DEIR cites a study published in 1992 by the Federal Interagency Committee on Noise (FICON) as the basis for the adopted threshold of significance for softball game noise. The actual name of the FICON report cited is *Federal Agency Review of Selected Airport Noise Analysis Issues*. As the name indicates, the subject of this study was noise from jet aircraft, not sports facilities. Furthermore, the noise measurement metric used in this study is the Community Noise Equivalent Level (CNEL), a 24-hour, weighted average.² There is nothing in the DEIR to support the contention that the allowable noise exposure increases using this daily metric are applicable to softball games that take several hours.

Footnote:

² The CNEL is calculated by energy-averaging, also known as logarithmically averaging, the noise levels over an entire 24-hour period after weighting (increasing for the purposes of calculation) the noise levels between 7:00 p.m. and 10:00 p.m. by 5 dB and those between 10:00 p.m. and 7:00 a.m. by 10 dB.

Response. The FICON study was performed with a focus on airport-related noise, because the U.S. Environmental Protection Agency and Federal Aviation Administration both recognized that airport noise affected a substantial number of residents in the United States. The technical sub-group contributing to the study was responsible for review of the body of science associated with methodologies and metrics for assessing community noise impacts, which evolved between the 1980 meetings of the Federal Interagency Committee on Urban Noise (FICUN) and the 1992 FICON study. Based on this large body of scientific evidence, the FICON study was able to establish a graduated significance threshold that depends upon the existing (ambient) community noise level at the time a new source is introduced. The principal identified in association with the significance threshold is that humans are more sensitive to changes in noise level where they currently experience elevated noise levels, and less sensitive to changes when ambient noise levels are lower. This sensitivity to changes in the community noise levels is valid regardless of the sources contributing to the community noise level (i.e., airports, roadways, commercial buildings, athletic facilities). The FICON based graduated significance threshold is commonly employed in CEQA noise analyses for a range of noise sources because it accounts for this correlation between sensitivity and existing noise exposure levels, rather than applying a static increase as the threshold regardless of existing noise exposure levels.

FICON specifically uses Community Noise Equivalent Level (a 24-hour average sound level) because airports may have aircraft activities in any hour of the day, and CNEL captures all aircraft operations occurring within a 24-hour day; changes in the level of aircraft activity with addition of airport capacity (i.e., runways or gates), can then be compared on a basis that includes all these operations throughout the day/night. Softball games on the other hand have a duration in the 3- to 4-hour range, where relatively continuous noise results in comparable average noise level (L_{eq}) across each hour of the game. Because a softball game represents a discrete event, with standard duration, L_{eq} is an appropriate metric upon which to base the comparison of a receiver's noise perception of a softball game (existing game versus proposed game). The pertinent aspect of the FICON standards for softball game noise (on the basis of comparing hourly L_{eq} values), is that receivers already experiencing softball game noise would similarly be more sensitive to changes in the average sound level over the discrete game duration if the starting noise level was already high.

B5-43 Comment. Even if one were to allow that extrapolating the conclusions of a study on jet aircraft noise using a 24-hour metric to a study on softball noise using an hourly metric were permissible, the DEIR's operational (i.e., game noise) analysis would still be inadequate because it relies solely upon a relative threshold of significance, the notion that a project can always add just a little more noise to an environment without causing any sort of impact. The long-run fallacy of this argument is clear: no one project may ever cause an impact, but over time the environment could become significantly degraded by a series of projects that each increases the noise incrementally. Therefore, it is imperative that relative thresholds of significance be paired with absolute thresholds. In this matter, one look no further than the Berkeley Municipal Code for such an absolute threshold.

Response. The FICON standard does take into account the absolute noise level. When the existing noise level is less than 60 dBA, the allowable noise exposure increase is 5 dBA; when existing noise is between 60-65 dBA, the allowable noise exposure increase is 3 dBA; and when the existing noise level is greater than 65 dBA, the allowable noise exposure increase is 1.5 dBA. This same FICON standard was used to evaluate traffic noise increases from the project, which will occur over short periods before and after games, and for the spectator noise, which will occur throughout the game.

As explained in the Draft EIR Section 4.5, Noise (Subsection 4.5.2.4, Local), the application of the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code would not align well with the infrequent, short-duration, episodic nature of competitive events at the facility (approximately 25 times per year). In short, the municipal code standards establish sound generation limits to govern permanent stationary sources (i.e., non-transportation) in a manner that would prevent exterior noise levels at noise-sensitive (primarily residential) land uses from reaching unacceptable levels on a regular or constant basis. As an example, for a continuous, permanent, sound source (such as an air conditioner running 24-hours per day in the heat of summer), application of the daytime limit of 60 dBA L_{eq} and a nighttime limit of 55 dBA L_{eq} (City of Berkeley, Municipal Code Section 13.40.050, multi-family residences) would result in an ambient noise level of no greater than 60 dBA L_{dn} (a 24-hour average with 10 dB penalty added to the hourly averages between 10 p.m. and 7 a.m.). 60 dBA L_{dn} is the exterior noise limit, below which no noise studies are required for the protection of proposed residential land uses (CCR Title 24, Part 2). In comparison, softball games do not occur every day, and have a duration of 3-4 hours (not the entire daytime period). With infrequent occurrence, during a limited portion of the day, softball games do not align well with the function of the municipal code limits as explained above. In other words, softball games do not have the potential to change the long-term average ambient community noise levels in the scale represented by the municipal code (daily L_{dn} values averaged over a month, or even a week, would not be affected by the presence or absence of a softball game event). This is because a competitive softball game would only be played on 25 days of the year, and the incremental increase in noise levels on those 25 days per year would not change an annual ambient average (expressed as average daily L_{dn}), which includes these 25 game days and 340 non-game days.

As explained throughout the Draft EIR, 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. While UC Berkeley expressly considered the City of Berkeley's noise ordinance for mechanical equipment and construction, it expressly did not use the City of Berkeley's noise

ordinance as thresholds for the increase in spectator noise that would occur from the Project. This is because the proposed project is the renovation of an existing softball field that is currently used year round. For 340 days a year there would be no change in the type or intensity of use and there would be no noise impact from spectator attendance. For the 25 games a year, a more meaningful comparison is the average noise level from events at the existing facility (broken out as typical events and maximum events) versus noise levels from these events under proposed project conditions. As seen in Table 4.5-17, the highest noise from existing games (at maximum capacity) is 69.7 dBA. With project implementation, the highest noise level (at this same receptor) is reduced to 67.2 dBA as a result of the change in configuration of the stands and speakers (existing spectator stands have an open back, the proposed stands would have a solid wall between spectators and adjacent residential areas). In fact, spectator noise decreases as a result of the project at 8 of the 15 receptors analyzed, and where there is an increase, it falls below the appropriate FICON standard. It should be noted that temporary spectator stands (on the north side of the field, oriented southward toward the adjacent residential area) are included in the modeling of existing typical and maximum capacity events (with existing permanent seating for 350 spectators, any spectators in excess of this number are accommodated in the temporary stands), whereas the proposed facility would have permanent seating for all spectators, oriented away from the adjacent residential area. Because temporary stands holding spectators oriented toward residential areas south of the proposed facility would be eliminated for the project, crowd noise contributions at some receivers would actually be less under the project compared to the existing conditions. However, because the assumed spectators attendance for a typical event would increase by 500 (currently 500 and increasing to 1,000), whereas the increase for spectators at maximum events would be 171 (currently 1,340 and increasing to 1,511), for some of the modeled receivers, modeling concludes there would be a greater increase in noise levels from typical events (existing versus proposed) than for maximum events (existing versus proposed).

The FICON significance threshold ensures that where community noise levels are already high, the allowable increase is less (reducing the potential for community noise level increase on a cumulative basis). The FICON significance threshold therefore incorporates absolute limits by considering the starting baseline noise conditions, and setting numeric limits for relative increase above ambient that are dependent on the existing ambient noise level.

As explained in the Draft EIR Section 4.5, Noise (Subsection 4.5.2.4, Local), the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code have been applied to assess operational noise from project stationary equipment at the closest residences within Berkeley and Oakland, respectively. New mechanical equipment could be in use for a portion of most days of the year while coaching, practices, intramural games, and other low intensity activities are occurring. These stationary equipment noise levels are also compared to ambient noise levels at the same residences, and in each case no increase in ambient noise levels would result from mechanical equipment operations. Consequently, the analysis does apply both an absolute and relative threshold to stationary equipment noise.

B5-44 Comment. Appropriate and Reasonable Absolute Standard for Softball Game Noise

A reasonable absolute standard, already cited in the DEIR, is the City of Berkeley Exterior Noise Limits. As correctly shown in Table 4.5-6 of the DEIR, the applicable noise limit for homes zoned ES-R (as all of those on Canyon Road, Mosswood Road, and Panoramic Way are) during the hours that the softball stadium will be used is 55 dBA L50. The L50 level is that which is exceeded 50% of the time during a given time period or event. This can be difficult to calculate due to a lack of statistical distribution data

about source levels, so the DEIR reasonably calculated the L_{eq} which is the “decibel” (logarithmic) average noise level. While the L_{50} and the L_{eq} are not necessarily equal, given any better information, it is reasonable to presume that they are.

Response. As explained in the Draft EIR Section 4.5, Noise (Subsection 4.5.2.4, Local), the residential noise exposure limits from the Berkeley Municipal Code and Oakland Municipal Code have been applied to assess operational noise from project stationary equipment that would operate every day of the year at the closest residences within Berkeley and Oakland, respectively. The L_{eq} (equivalent average noise level) provides a more conservative analysis than what would have been applied in the evaluation of the L_{50} , as the L_{eq} places deference on the louder sound levels produced during a given period. Dudek therefore concurs that it is reasonable (and conservative) to compare the calculated L_{eq} values for operational stationary noise against the municipal code standards, which are expressed as an L_{50} metric.

However, Dudek disagrees with the commenter that the absolute limit for residential noise exposure is reasonable or appropriate to apply to competitive game noise levels that will occur with the proposed project no more than approximately 25 times per year. The inter-collegiate competition events would be held relatively infrequently and would have a duration of several hours apiece (as opposed to most of a day); as the activity will not occur “day in and day out” the standards in the municipal code for residential land use exposure are not appropriate to be applied to infrequent events at the project softball field facility. See also Response to Comment B5-43.

B5-45 Comment. The DEIR presents the results of its softball game noise for “typical events” in Table 4.5-16 on DEIR page 4.5-33. This table is reproduced below, and all of the noise levels at analyzed receiver that are predicted to exceed the Berkeley Noise Ordinance Limit are highlighted. This is the case for 10 of the 15 receivers. The results for “maximum events” (maximum attendance) indicate that the Noise Ordinance Limit will be exceeded at 12 of the 15 receivers (DEIR results in Table 4.5-17 on p. 4.5-34, not reproduced). [See Final EIR Appendix A, Public Comment on Draft EIR, Letter B5 for referenced table.]

Response. See Responses to Comments B5-43 and B5-44 that explain why the Berkeley and Oakland noise ordinance limits for residential land uses should not be applied to noise levels from 25 games a year for a project that involves renovation of an existing softball field. Project contributions to noise levels at these residences during competitive events would in each case result in ambient noise level increases that fall below the FICON significance thresholds.

B5-46 Comment. DEIR Table 4.5-16 includes a column showing an Existing Ambient Daytime Noise Level, however, I assert that the value shown is inappropriate to this situation because it is the value averaged over 15 hours, from 7:00 a.m. until 10:00 p.m. One major facet of this project that portends a significant noise impact on nearby residents is that games will be played after dark, enabled by the permanent lighting. The DEIR states, “While the project conservatively assumes up to 25 games after dark per year . . . it is much more likely there would be approximately 11 games starting at 5:00 p.m. or later . . .” [DEIR at p. 3-26] So, there will be at least 11 games in the quiet evening hours.

Response. The commenter has not pointed to any evidence that supports the use of a different threshold of significance between 7 p.m. and 10 p.m. or anything that defines it as “quiet evening hours.” UC Berkeley does not have such a threshold, and neither does the City of Berkeley nor City of Oakland define an “evening” period; daytime is from 7 a.m. to 10 p.m. and nighttime is from 10 p.m. to

7 a.m., which indicates that no greater emphasis is placed on sound occurring from 7 p.m. to 10 p.m. as compared to sound during the period of 7 a.m. to 7 p.m. Noise levels after 10 p.m. are typically required to be lower in order to prevent sleep disturbance. The softball field will not be used past 10 p.m., and the proposed project would therefore have no impact on sleep disturbance.

The period of the day in which competitive softball games would be hosted varies, and therefore comparison of average noise levels from a multi-hour competitive softball game against an ambient average of hourly noise levels across the daytime period (7 a.m. to 10 p.m.) is reasonable in order to account for the variability of game times throughout the daytime (7 a.m. to 10 p.m.). A useful comparison for understanding predicted game noise levels at nearby residences is the standard reference for normal conversation levels, which is 65 dBA L_{eq} for two people standing a distance of three feet apart. Now consider that at no evaluated residence under a project typical event game (Draft EIR Table 4.5-16) would the average game noise reach 65 dBA L_{eq} outside the residence while only one home (LT1) would experience exterior sound levels slightly above 65 dBA L_{eq} (67.5 dBA L_{eq}) during a project maximum event game (Draft EIR Table 4.5-17). Moreover, at this location, the noise levels decrease from 69.7 dBA as a result of the proposed project. As such, competitive game events would not be anticipated to interfere with conversations or other outdoor activities conducted at nearby residences, whether such future project typical events or maximum events occurred in the early afternoon, late afternoon, or evening. Therefore, the increased spectators at games with the proposed project would have a less than significant noise impact.

B5-47 Comment. Any game that begins at 5:00 p.m. or later will end after 7:00 p.m., and the long-term noise measurements made by the DEIR at four locations in the residential neighborhoods around the project site reveal that the existing ambient levels between 7:00 p.m. and 10:00 p.m. range from 47.1 to 54.1 dBA L_{eq} . Using the arithmetic average value of the hourly L_{eq} measured at each of the four long-term locations from 7:00 p.m. to 10:00 p.m. in the same manner as the DEIR does using the average over the 15 hours from 7:00 a.m. to 10:00 p.m. yields to following results which clearly indicate a significant impact at many receivers even using the ill-advised FICON standards: [See Final EIR Appendix A, Public Comments on Draft EIR, for referenced table.]

Heretofore, only a very few games have been played after dark, enabled by temporary lighting. Therefore, the permanent introduction of 11 to 25 night games at the Cal Softball Field will cause a significant noise impact on the neighboring residences by virtue of the fact that the noise from those games will exceed both the applicable Berkeley Noise Ordinance Exterior Limit and the existing ambient noise level. Furthermore, the increases in the noise levels during the relevant evening hours will exceed the FICON standard as applied in the DEIR noise analysis, so even by the DEIR's own standard, the noise from softball games played after dark will constitute a significant noise impact. These quantitative considerations are irrespective of the other facets of noise noted above that people tend to find annoying, namely, the "plink" of the bat, the roar of the crowd, and players yelling.

Response. The maximum number of total annual games anticipated would be 25, including post-season playoff games. While it is more likely that 11 of these games would be anticipated to extend beyond sundown (i.e., into darkness), a worst-case scenario with all 25 home games involving some play extending into the evening is assumed (see Draft EIR Chapter 3, Project Description, Subsection 3.6.4.1). The commenter again asserts that a separate and unique noise significance threshold must be constructed and applied for the evening period between 7 p.m. and 10 p.m. due to increased sensitivity to noise in this period, with an increased potential for annoyance from noise occurring during this period.

As explained in Response to Comment B5-46, there is no basis for using a different threshold for the evening period.

The commentor is wrong that softball game noise should be compared to an average noise level derived from recorded ambient noise levels only in the period between 7 p.m. and 10 p.m. There is no basis to select the time period between 7-10 p.m. solely to construct an average ambient noise level for comparison to game noise. The period from 7 p.m. to 10 p.m. is considered "evening" under the CNEL metric (with separate weighting) but the noise from this period is then averaged with noise levels across the other 21 hours of the day to arrive at the CNEL value. In not one of the cities in Alameda County, nor under Alameda County regulations, is a separate evening period established for the purpose of noise management. In all of these communities, noise limits are defined on the basis of daytime and nighttime, with no separate regulation for the period between 7 p.m. and 10 p.m. (evening). Consequently, constructing an ambient average noise level for the project area that considers the evening time period only is inappropriate. The selection of this erroneous three-hour-period in the evening against which to compare softball game noise is invalid and leads to the spurious conclusion that softball game noise would result in increases of 7 – 15 dBA L_{eq} over "ambient" noise levels. Games may occur during any portion of daytime, with each concluded before 10 p.m., and therefore the daytime average noise level (from 7 a.m. to 10 p.m.) is appropriate to compare game noise against. Parsing the sound level monitoring data so that an evening-only ambient level is identified is not consistent with the noise standards for Berkeley or Oakland, as their standards are applicable for the entire daytime period (7 a.m. to 10 p.m.). The time-of-day criteria as the basis for an annoyance-based threshold is therefore already dismissed by the existing ordinances. Finally, the existing field is routinely used until 10 p.m. for intramural events and practices, so "the 'plink' of the bat, the roar of the crowd, and players yelling" is part of the existing conditions at the project site. See also Response to Comment B5-46.

B5-48 Comment. Noise is fundamentally defined as "unwanted" or "undesirable" sound. As such, noise, in and of itself, cannot be quantified. While it is well established that sound levels (decibels) correlate somewhat with people perceiving a sound as "noise", the situation is much more complex than captured by typical noise ordinances and noise policies. This is not to say that the latter are not useful as public policy, rather, it is to say that limiting noise assessment to only those aspects that can be quantified is to short-change the impact assessment on those impacted.

Response. See Response to Comment B5-38. The requirement for the assessment of noise impacts under CEQA is the comparison of the existing noise environment without the project to the resulting noise environment once the project is implemented. The women's softball field, which operates in a substantially similar manner to the proposed project, and which includes each of the same sound sources, is an existing contributor to the current noise environment. It is therefore completely adequate and appropriate to compare the noise levels from the existing softball field against the proposed softball facility noise levels, as the composition of the sound is the same in both cases. Also, the dBA L_{eq} metric has been demonstrated to accurately represent the way in which a human experiences typical sound in the environment.

B5-49 Comment. In this matter, the proposal includes evening and nighttime games which have not occurred in the past with all of their attendant sounds such as fans cheering and stomping their feet; players yelling; umpires barking; and commentators announcing over the PA system the play-by-play, score, information about the players and other upcoming events, and concession stand prices. Even evening and nighttime practice will bring coaches and players yelling which is typically unwanted by residents within earshot of athletic facilities.

Response. The project does not propose nighttime games (i.e., those that would occur later than 10 p.m.). Evening games have occurred in the past using temporary lighting, and evening intramural softball games have been hosted at the existing softball field. In addition, the field is used for evening practices. Consequently, evening softball games at the softball field as a result of the Project would not be a new phenomenon but may occur with greater frequency under the Project. Softball practices at the renovated facility are not proposed to occur later than 7 p.m. (the beginning of the evening period, as defined in some jurisdictions), as is the case under existing conditions. See Response to Comment B5-2 in the Final EIR for an explanation of the existing use of the field until 10 p.m. that was analyzed in the 1992 IS/ND.

B5-50 Comment. From the perspective of neighboring residents who predate the development of Cal Softball Field and other sports facilities in 1995, the area has already been transformed from one of wooded quiet to living virtually inside a sports stadium. Google Earth Pro historical aerial photographs clearly show that in 1988 there were buildings along Centennial Drive that appear to have been separated from homes on Canyon Road by a buffer zone of trees and that by 1993 these buildings and woods had been removed, clearing the land for the later development of Cal Softball Field and Witter Rugby Field.

Response. CEQA mandates the comparison of environmental conditions under existing circumstances (baseline) against those that would result from the project. While the vicinity surrounding and including the project site may have been different before 1988, the baseline condition for this project includes the existence of the women's softball field, and use of the field to host at home competitive softball events, including post-season playoff games. The existing softball field has now existed since 1995, firmly establishing an ambient noise environment in the vicinity that includes contributions from collegiate level softball competition events. See Response to Comments B5-2 and B5-6 in the Final EIR for an explanation of the existing use of the field until 10 p.m. that was analyzed in the 1992 IS/ND.

B5-51 Comment. As is often the case, following the initial transformation of the area, there has been a continual degradation of the residential neighborhood's soundscape environment by incremental "improvements" to the facilities. Where there were once no night games, there have now been a few night games. Now that there have been a few, there will now be many more enabled by the proposed new lighting and new larger facility. The current plan calls for up to 25 competitive night games. If 25 night games are permitted and the California Golden Bears continue to win Pac-12 and National Championships and otherwise have great success (something we can all support), it isn't difficult to foresee that the number of night games will increase – incrementally – in the future.

Response. As described in Response to Comment B5-47, a worst-case scenario with all 25 home games involving some play extending into the evening is assumed (see Draft EIR Chapter 3, Project Description, Subsection 3.6.4.1). The only way that additional competitive games could be played at the proposed facility would be if the NCAA added games to the competitive season, which is not anticipated and would be entirely speculative to hypothesize they would do. The proposed facility would continue to be used at times after dark for softball practices and intramurals, as under existing conditions. See Chapter 2, Revisions to Draft EIR, of the Final EIR for minor revisions to Draft EIR Table 3-2, acknowledging the use of the field for softball practices until 7 p.m.

B5-52 Comment. Cautionary tales comes from the San Diego Unified School District. After installing permanent lights at Clairemont High School stadium, neighbors report that the usage increased from "five or six times a year to well over a hundred".³

Footnote:

³ Video: "Residents Near Clairemont High School Discuss the Impact of Commercialization and Lighting of the Athletic Field" [<https://www.youtube.com/watch?v=tVutv5VKas&app=desktop>]

Response. The circumstances involved with the Clairemont High School stadium are very unlikely to be representative for the proposed project. Any number of factors could have been the cause of greater interest and usage of the Clairmont High stadium, many of which might be related to soccer or track and field events for which the stadium could also be used to host, whereas here there are no other facilities. See Response to Comment B5-51 for information about what was assumed in the analysis with respect to games extending into the evening. The Softball Field will not be used for soccer or track and field. It is already used throughout the year for intramural and recreational sports, and as explained above, there is no evidence that the Softball Field will be used for more than 25 competitive games per year.

B5-53 Comment. In conclusion on this point, noise is defined as "unwanted" or "undesirable" sound. To the residents of Canyon Road and Panoramic Hill, if the nighttime use is expanded beyond the three nights over the last four years they have already tolerated, all future, audible nighttime sounds from the Cal Softball Field would be a reminder that what remains in the evening of the peaceful, quiet residential enclave that existed from the time the homes were built beginning in 1904.

Response. The existing softball field has been routinely operated until 10 p.m. for intramural games and practices. The existing field is also currently used for approximately 15-20 competitive games a year, with 22 regular season games scheduled for 2024. The schedule changes as a result of the proposed project (up to 25 games, including those in the post season) are therefore minimal. Under the proposed project, it is conservatively estimated that a total of 25 competition level games per year could involve play extending into the evening (later than 7 p.m., but no later than 10 p.m.), including the potential for post-season play-off games (see Draft EIR Chapter 3, Project Description, Section 3.6.4.1). Over a 5-month competitive season, this would equate to no more than 5 games per month that could extend into the evening period, or roughly one evening per week for the 5-month season. Thus, noise at vicinity residences during future evening softball games would affect no more than approximately 17% of evenings throughout the January-May softball season. In addition, noise from softball games at the renovated softball field would remain below the operational/event threshold of a 5 dBA L_{eq} increase over average daytime ambient levels (the time period in which the games would occur). As explained in Response to Comments B5-46 and B5-47, there is no separate noise threshold that applies from 7 p.m. to 10 p.m. Therefore, operational noise impacts were determined to be less than significant. Also see Responses to Comments B5-2 and B5-6 in the Final EIR for an explanation of the existing use of the field until 10 p.m. that was analyzed in the 1992 IS/ND.

B5-54 Comment. A major part of the fun of a sporting event is cheering and the amped-up feeling amongst the fans when their team does well. That should be allowed and encouraged as long as it's done in a location that does not impact others not in attendance. That is not the situation here. Rather, the development of Cal Softball Field and Witter Rugby Field has already transformed the daytime environment from quiet woods to a sporting venue. Fortunately for the residents, the neighborhood currently returns to its more pristine state in the evenings, but the proposed project would eradicate even that vestige of the venerable neighborhood on many evenings, and once that barrier is broken, the evening quiet will never be totally recovered. This is precisely why the California Environmental Quality Act requires a thorough analysis and full disclosure of the environmental impacts of projects. In this case, both qualitatively and quantitatively, it is clear that the proper conclusion of such an analysis must

be that the project would cause a significant and unavoidable noise impact to the residents of Canyon Road.

Response. See Response to Comment B5-53 for a summary of the operational noise impacts of the proposed project. See also Responses to Comments B5-37 through B5-52 for information about all other comments made by Wilson Ihrig. As explained above, noise from the use of the existing softball field already occurs until 10 p.m. Additionally, the adjacent Witter Field is also used regularly until 10 p.m. The existing baseline is not “evening quiet.”

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Attachment A

SoundPlan Model Inputs

Project Maximum Event

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Reference for spectators: Hayne, M.J., J.C. Taylor, R.H. Rumble, and D.J. Mee. 2011. "Prediction of Noise from Small to Medium Sized Crowds." Paper Number 133, Proceedings of Acoustics 2011. November 2–4, 2011, Gold Coast, Australia.

Existing Average Game (Typical Event)	500
# of Spectators ¹	110.7 LwAmax
	106.7 LwA01
	107.5 LwA10
	104.5 LWeq

Existing Sell-out Game (Maximum Event)	1340
# of Spectators ¹	115.4 LwAmax
	111.4 LwA01
	113.9 LwA10
	110.9 LWeq

Project Average Game (Typical Event)	1000
# of Spectators ¹	114.0 LwAmax
	110.0 LwA01
	112.0 LwA10
	109.0 LWeq

Project Sell-out Game (Maximum Event)	1511
# of Spectators ¹	116.0 LwAmax
	112.0 LwA01
	114.7 LwA10
	111.7 LWeq

¹ Participants (coaches, players, trainers, etc.) not included in spectator (crowd) quantity

ID	Building type	Name	Area usage	Building height m	House No.	Land parcel No.	Road name	Weighting factor	Floor height m	Number of basement floors	Number of floors	Receiver height abv. ground floor m	Building type	Town	Zip code	3D-dim [m/m²]
0	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
14	Main building	Press Box	Schools	10.7				1	2.8	0	2	2.4				228.6785
29	Main building	Seating Structure	Schools	6.1				1	2.8	0	2	2.4				1509.973

ID	G	Name	DΩ	DΩ	Emission spectrum ID	Group ID	Leq	Level	Mean	Take over	Time	dB-	k	k	Tonality	3D-dim
			Ground	Wall			emission	reference	frequency	height above						
			dB	dB			level		Hz	terrain from						
0	1	3	4	5	6	7	8	9	10	11	12	13	14	15		16
406	A	Prj_Max_Event_Crowd	1511	0	0 Crowd Noise_1511_Leq	undefined	111.7	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		710.1871
381	P	Installed Speaker_SB.SP.11		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	115	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
382	P	Installed Speaker_SB.SP.10		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	104.9	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
383	P	Installed Speaker_SB.SP.12		0	0 Fulcrum Acoustics GX1565_Crowd of ?	undefined	116	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
384	P	Installed Speaker_SB.SP.5		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	104.9	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
385	P	Installed Speaker_SB.SP.4		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	114	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
386	P	Installed Speaker_SB.SP.6		0	0 Fulcrum Acoustics GX1565_Crowd of ?	undefined	113	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
387	P	Installed Speaker_SB.SP.15		0	0 Fulcrum Acoustics GX1565_Crowd of ?	undefined	117	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
388	P	Installed Speaker_SB.SP.13		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	116	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
389	P	Installed Speaker_SB.SP.14		0	0 Fulcrum Acoustics GX1565_Crowd of ?	undefined	111	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
390	P	Installed Speaker_SB.SP.3		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	114	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
391	P	Installed Speaker_SB.SP.1		0	0 Fulcrum Acoustics GX1526_Crowd of ?	undefined	114	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
392	P	Installed Speaker_SB.SP.2		0	0 Fulcrum Acoustics GX1565_Crowd of ?	undefined	111	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
393	P	Concourse Low Speakers_SB.SP.22		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
394	P	Concourse Low Speakers_SB.SP.21		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
395	P	Concourse Low Speakers_SB.SP.19		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
396	P	Concourse Low Speakers_SB.SP.18		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
397	P	Concourse Low Speakers_SB.SP.20		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
398	P	Concourse Low Speakers_SB.SP.17		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
399	P	Concourse Low Speakers_SB.SP.16		0	0 Concourse Speakers_Flush Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
400	P	Concourse High Speakers_SB.SP.07		0	0 Concourse Speakers_High_Soffit Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
401	P	Concourse High Speakers_SB.SP.08		0	0 Concourse Speakers_High_Soffit Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		
402	P	Concourse High Speakers_SB.SP.09		0	0 Concourse Speakers_High_Soffit Mount_Crowd of ?	undefined	102	Lw/unit	500	0	100% / 24 h	dB(A)	0	0		

ID	Name	Area usage	Object #	Distance to facade m	End angle deg	Floor height m	Number of floors	Number of the first floor	Elevation of Ground at Receiver (MSL) m	Relative height receiver above ground m	Start angle deg
317	67 CANYON RD LT1	Residential scattered	1	0.01	360	2.8	2	1	156.5	2.4	0
318	61 CANYON RD	Residential scattered	101	0.01	360	2.8	2	1	153.8	2.4	0
319	53 CANYON RD	Residential scattered	102	0.01	360	2.8	2	1	152.6	2.4	0
320	37 MOSSWOOD RD	Residential scattered	103	0.01	360	2.8	2	1	172.5	2.4	0
321	29 MOSSWOOD RD	Residential scattered	104	0.01	360	2.8	2	1	167.3	2.4	0
322	21 MOSSWOOD RD	Residential scattered	105	0.01	360	2.8	2	1	166.2	2.4	0
323	44 ARDEN RD	Residential scattered	106	0.01	360	2.8	2	1	191.0	2.4	0
324	38 MOSSWOOD RD LT2	Residential scattered	2	0.01	360	2.8	2	1	186.9	2.4	0
325	99 ARDEN RD	Residential scattered	107	0.01	360	2.8	2	1	183.4	2.4	0
326	48 MOSSWOOD RD	Residential scattered	108	0.01	360	2.8	2	1	192.8	2.4	0
327	280 PANORAMIC WAY LT4	Residential scattered	4	0.01	360	2.8	2	1	219.2	2.4	0
328	299 PANORAMIC WAY	Residential scattered	109	0.01	360	2.8	2	1	201.7	2.4	0
329	8 PANORAMIC PL	Residential scattered	110	0.01	360	2.8	2	1	225.6	2.4	0
330	335-365 PANORAMIC WY	Residential scattered	111	0.01	360	2.8	2	1	239.7	2.4	0
331	STRAWBERRY CANYON CENTER	Schools	112	0.01	360	2.8	1	1	167.8	2.4	0
332	ALAMEDA COUNTY FIRE STATION NO 19	Schools	113	0.01	360	2.8	1	1	220.1	2.4	0
333	THE ADVANCED LIGHT SOURCE	Commercial	114	0.01	360	2.8	1	1	200.9	2.4	0
334	ST1	Mixed area	1000	0.01	360	2.8	1	1	151.2	2.4	0
8025	15 CANYON WAY LT3	Residential scattered	3	0.01	360	2.8	2	1	146.5	2.4	0

ID	Graphic object ID	Name	Wall height m	3D-dim [m/m²]
0	2	3	4	5
526;1	Wall	Seating Structure Barrier	10.67	207.7388

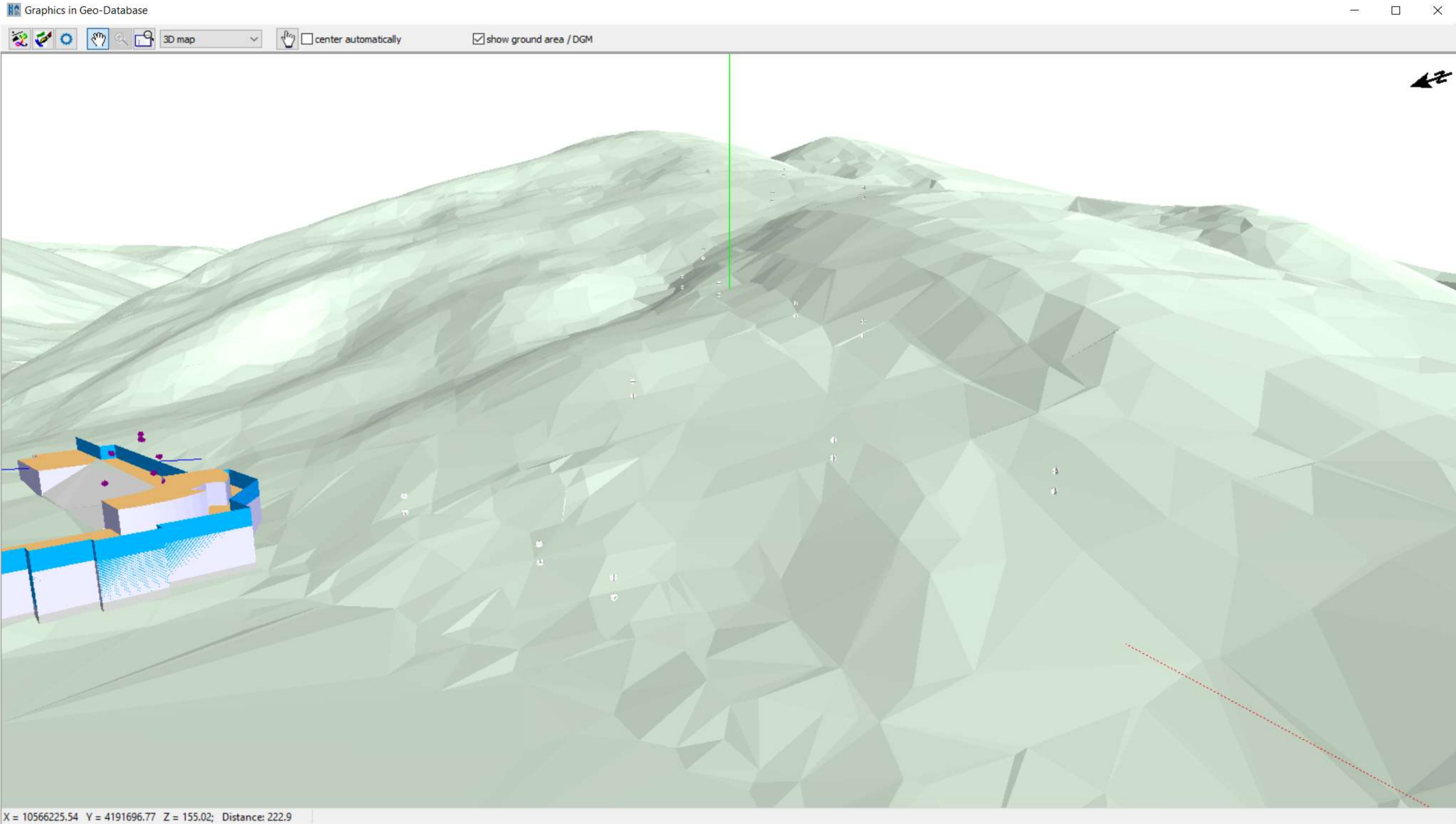
ID	Name	Ground factor	3D-dim [m/m²]
0	2	3	4
61	GA_01	0.25	1012832

ID	Name	Wall base elev. m	3D-dim [m/m²]
0	2	3	4
43;1	Seating Structure	0	1150.803

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum
Concourse High Speakers_SB.SP.07	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers High_Soffit Mount_Cro
Concourse High Speakers_SB.SP.08	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers High_Soffit Mount_Cro
Concourse High Speakers_SB.SP.09	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers High_Soffit Mount_Cro
Concourse Low Speakers_SB.SP.16	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Concourse Low Speakers_SB.SP.17	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Concourse Low Speakers_SB.SP.18	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Concourse Low Speakers_SB.SP.19	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Concourse Low Speakers_SB.SP.20	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Concourse Low Speakers_SB.SP.21	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Concourse Low Speakers_SB.SP.22	Point				102	102	0	0	108	0	100%/24h	Concourse Speakers_Flush Mount_Crowd of
Installed Speaker_SB.SP.1	Point				114	114	0	0	120	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.2	Point				111	111	0	0	117	0	100%/24h	Fulcrum Acoustics GX1565_Crowd of ?
Installed Speaker_SB.SP.3	Point				114	114	0	0	120	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.4	Point				114	114	0	0	120	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.5	Point				104.9	104.9	0	0	110.9	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.6	Point				113	113	0	0	119	0	100%/24h	Fulcrum Acoustics GX1565_Crowd of ?
Installed Speaker_SB.SP.10	Point				104.9	104.9	0	0	110.9	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.11	Point				115	115	0	0	121	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.12	Point				116	116	0	0	122	0	100%/24h	Fulcrum Acoustics GX1565_Crowd of ?
Installed Speaker_SB.SP.13	Point				116	116	0	0	122	0	100%/24h	Fulcrum Acoustics GX1526_Crowd of ?
Installed Speaker_SB.SP.14	Point				111	111	0	0	117	0	100%/24h	Fulcrum Acoustics GX1565_Crowd of ?
Installed Speaker_SB.SP.15	Point				117	117	0	0	123	0	100%/24h	Fulcrum Acoustics GX1565_Crowd of ?
Prj_Max_Event_Crowd 1511	Area	777.56			111.7	111.7	0	0	116	0	100%/24h	Crowd Noise_1511_Leq

Name	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)
Concourse High Speakers_SB.SP.07		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse High Speakers_SB.SP.08		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse High Speakers_SB.SP.09		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.16		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.17		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.18		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.19		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.20		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.21		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Concourse Low Speakers_SB.SP.22		76.3	86.5	91.2	94.4	95.6	96.9	94.8
Installed Speaker_SB.SP.1		88.3	98.5	103.2	106.4	107.6	108.9	106.8
Installed Speaker_SB.SP.2		85.3	95.5	100.2	103.4	104.6	105.9	103.8
Installed Speaker_SB.SP.3		88.3	98.5	103.2	106.4	107.6	108.9	106.8
Installed Speaker_SB.SP.4		88.3	98.5	103.2	106.4	107.6	108.9	106.8
Installed Speaker_SB.SP.5		79.2	89.4	94.1	97.3	98.5	99.8	97.7
Installed Speaker_SB.SP.6		87.3	97.5	102.2	105.4	106.6	107.9	105.8
Installed Speaker_SB.SP.10		79.2	89.4	94.1	97.3	98.5	99.8	97.7
Installed Speaker_SB.SP.11		89.3	99.5	104.2	107.4	108.6	109.9	107.8
Installed Speaker_SB.SP.12		90.3	100.5	105.2	108.4	109.6	110.9	108.8
Installed Speaker_SB.SP.13		90.3	100.5	105.2	108.4	109.6	110.9	108.8
Installed Speaker_SB.SP.14		85.3	95.5	100.2	103.4	104.6	105.9	103.8
Installed Speaker_SB.SP.15		91.3	101.5	106.2	109.4	110.6	111.9	109.8
Prj_Max_Event_Crowd 1511	77.6	90.4	92.8	103.6	105.4	107.3	103.6	85.8

Screenshot of SoundPlan model illustrating 3D terrain (topography) entered in the model space for softball game noise level assessment in surrounding area.



Attachment B

Jonathan V. Leech

Resume

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Jonathan Leech, AICP, INCE, PG

SENIOR PROJECT MANAGER, ENVIRONMENTAL SPECIALIST

Jonathan Leech is a senior project manager and environmental specialist with 39 years' environmental planning experience, including environmental research, hazardous materials and environmental impact assessment, condition compliance and mitigation monitoring, and land use analysis. Mr. Leech has contributed to more than 200 CEQA and NEPA environmental documents including: environmental assessments (EAs); environmental impact reports (EIRs); mitigated negative declarations (MNDs); specific plans; and policy documents for numerous local agencies within the State of California.

Mr. Leech also has 20 years of focused experience in noise assessments, including exterior and interior noise exposure studies for single-family homes, as well as large-scale evaluations of proposed subdivisions and specific plan projects, for inclusion in environmental impact reports (EIRs) or negative declarations (NDs). He has also completed noise studies for transportation facilities, performed noise evaluation of commercial and industrial sources, prepared construction-related noise evaluations as well as provided noise monitoring during construction for compliance with project conditions and noise ordinance restrictions.

Project Experience

Education

Women's Beach Volleyball Facility, University of California, Berkeley, Completed a noise and vibration assessment and prepared the noise and vibration section of the EIR for a proposed new beach volleyball complex, including sand courts and structure housing locker rooms and coaches offices. Assessment included ambient noise survey, construction noise analysis, and prediction of sound levels at nearby residences from future building equipment operation, crowd noise, and use of loudspeaker system during facility events at full stadium capacity.

University of California, Davis, On-Call CEQA Services. Managed the noise assessment and preparation of the MND noise section for Webster Hall Replacement, Tercero Dining Commons 2, Orchard Park Demolition, CORE 2 Greenhouse, and Emerson Hall Replacement.

San Diego State University Master Plan Update EIRs. Managed the noise assessments for the West Campus Student Housing and Plaza Linda mixed use development and contributed to the noise assessment for the 2007 Master plan Update EIR.

Fresno State University. Managed the noise assessment and preparation of the noise section of the MND for both the Bulldog Stadium Modernization and for the New Student Union.



Education

*University of California,
Santa Barbara
BA, Environmental
Studies/
Geology, 1984*

*Pennsylvania State
University
Coursework in Graduate
Acoustics
Program, 2012*

Certifications

*American Institute of
Certified Planners (AICP)
Professional Geologist
(PG), CA*

Professional Affiliations

*American Planning
Association*

*Association of
Environmental
Professionals*

*Institute of Noise Control
Engineers (INCE)*

Cal Poly University, San Luis Obispo, Fermentation Sciences Center Mitigated Negative Declaration/Initial Study (MND/IS). Managed the preparation of an Initial Study and Mitigated Negative Declaration in accordance with CEQA (California Public Resources Code, Section 21000 et seq.) to address the proposed Fermentation Sciences Institute Center. The Center would provide dedicated space in a central location of campus for education and research activities in the fermentation sciences. The Center includes 42,000 gross square feet of programming space divided into three separate structures, one building of approximately 12,000 gross square feet and the other two approximately 15,000 gross square feet apiece. Primary issue areas evaluated in the MND/IS included aesthetics, biological resources, cultural resources, transportation, water supply, and wastewater.

Solano Community College District, Vacaville Center Biotechnology and Science Building, Mitigated Negative Declaration/Initial Study (MND/IS). Dudek prepared an Initial Study and Mitigated Negative Declaration for the proposed Biotechnology and Science Building to be located on the Vacaville Campus of Solano County Community College District. Improvements included the structure, extension of utility systems, and new parking area. Issues included visual and aesthetics, transportation and circulation, air quality, noise, public services, and surface hydrology. Dudek administered the noticing, document circulation, hearing process, and response to comments for the project environmental review process in compliance with CEQA. Managed the acoustic assessment and preparation of the noise section of the MND for the project.

Castilleja Private School Master Plan Focused EIR, City of Palo Alto, California. Completed peer-review of applicant provided acoustic study and prepared the noise and vibration section of the EIR addressing a series of campus improvements including new underground parking garage and relocation of the aquatics facility.

University of California, Santa Barbara, Biological Resource Surveys in Support of LRDP Adoption. Managed the contract with the University of California, Santa Barbara (UCSB), to prepare biological resource surveys for its Long Range Development Plan Environmental Impact Report (LRDP EIR) in accordance with requirements specified by the California Coastal Commission (CCC). Dudek biologists completed general field surveys, special-status plant surveys, wetland surveys, and drainage surveys, compiling all findings in a biological survey report meeting the requirements of UCSB and the CCC. In addition, for the site proposed to accommodate the expanded Planning and Facilities Management complex, Dudek performed aesthetic, glare, and noise analyses to address a proposed increase in building height allowance, in order to evaluate potential impacts upon the adjacent Goleta Slough.

University of California, Santa Barbara, Physical Sciences Buildings Mitigated Negative Declaration/Initial Study (MND/IS). Worked closely with UCSB planning staff to prepare the Initial Study on the original Physical Sciences Building, a single structure to be located in the center of Campus Green, between the Chemistry and Physics buildings. As a result of preliminary environmental work, the building design was revised instead to be implemented as separate additions to the Chemistry and Physics buildings. Dudek then prepared the Mitigated Negative Declaration for each of the building additions. Primary issues evaluated included aesthetic and visual resources, cultural resources, and transportation/circulation.

San Luis Obispo County Community College District, Cuesta College and North County Campus, Mitigation Monitoring and Reporting Program (MMRP) Implementation. Managed the contract with the SLOCCD to provide cultural resource and biological resource monitoring specified in the MMRPs from associated Mitigated Negative Declarations prepared to address proposed improvements at Cuesta College (San Luis Obispo) and the North County Campus (Paso Robles). The Cuesta College proposal involved removal of several portable classrooms and replacement with a permanent structure for instructional space. The North County Campus project involved removal of several portable classrooms and replacement with a new administration building and separate instructional space building. Dudek provided pre-construction biological surveys and cultural resource monitoring during the ground-disturbance phase of construction for both projects.

Santa Barbara High School, Peabody Stadium Replacement, Mitigated Negative Declaration/Initial Study (MND/IS), Santa Barbara Unified School District, Santa Barbara, California. Managed the preparation of an Initial Study and Mitigated Negative Declaration in accordance with CEQA to address the proposed replacement of the Peabody Stadium at Santa Barbara High School. The stadium seating no longer met ADA requirements, with access retrofits already encroaching into the track area (making the track unusable for competitive events); and the football field regularly flooded due to inadequate campus drainage infrastructure. Replacement of the stadium included upgrading of the primary storm drain extending from the west to east campus boundary, levelling of the playing surface, reconstruction of the slopes surrounding the stadium area, and construction of new grandstands with interior event space below. Primary issue areas evaluated in the IS/MND included aesthetics, air quality/greenhouse gasses, biological resources, cultural and historic resources, geology and hydrology, noise, and transportation.

Dos Pueblos High School Master Improvement Plan MND/IS, Santa Barbara School and High School District, Santa Barbara, California. Served as CEQA coordinator for the environmental review of the comprehensive master improvement plan for Dos Pueblos High School that included stadium completion, a new performing arts center, and the replacement of the swimming pool. Also included in the improvement project is a creek restoration effort in response to a U.S. Army Corps of Engineering (ACOE) violation notice for non-permitted fill activities. As project manager, was responsible for preparing the IS and MND documents, noticing of the project, and management of technical subconsultants. **Acquisition of Santa Barbara Armory (IS/MND), Santa Barbara Unified School District, Santa Barbara, California.** Managed the preparation of an Initial Study and Mitigated Negative Declaration in accordance with CEQA to address the acquisition and short-term use of the former US Army National Guard Armory property by SBUSD. Primary issues included hazardous materials, historic resources, traffic, and land use.

Westmont College Off-Campus Faculty Housing, Santa Barbara, California. Managed acoustical and cultural resources consulting services in support of site planning and design efforts for a proposed condominium housing development to be located in the City of Santa Barbara, California. Dudek assisted Peikert Group Architects, in working with Westmont College, to create a residential development proposal intended to provide homeownership opportunities for College faculty.

Stormwater Management Plan (SWMP) Santa Barbara School and High School District, Santa Barbara, California. Collaborative preparation, with Flowers & Associates, to perform services for assisting in preparing Santa Barbara Schools' NPDES Phase II Notice of Intent Applications and Stormwater Management Plan.

Santa Barbara Community Academy Elementary School, Santa Barbara School and High School District, Santa Barbara, California. Served as CEQA coordinator for the phased expansion/completion of the Academy Elementary School. The project involved relocation of the district administration function from the site and conversion of that structure for additional classroom space. The District maintenance facility would have been relocated in Phase 4 of the project to accommodate development of an auditorium. As a result of the preliminary environmental evaluation, the District modified the proposal to relocate the Community Academy to unused space at the La Cumbre Junior High School Campus. Dudek prepared the IS/MND and administered the CEQA process to address the modified proposal. The School Board authorized the academy's relocation in 2009.

Roosevelt Elementary School Mitigated Negative Declaration/Initial Study (MND/IS), Santa Barbara School and High School District, Santa Barbara, California. Served as CEQA coordinator for the redevelopment of Roosevelt Elementary School. Responsible for preparing the IS and MND documents, noticing of the project, and acting as environmental hearing officer. The key issues addressed in the ND include geology and soils, traffic, air quality, hazardous materials, aesthetics, noise, and public services.

Santa Barbara Middle School, Santa Barbara, California. Prepared an environmental noise study addressing siting recommendations and noise-control techniques for a proposed new outdoor sports court. The project site has exclusive residential properties on three sides, all of which were concerned about increased noise levels from the sports activity. Sound level measurements were taken and a sound wall was prescribed to attenuate noise levels at neighboring residential properties.

Isla Vista Elementary School Mitigated Negative Declaration/Initial Study (MND/IS), Goleta Union School District, Goleta, California. Served as CEQA coordinator for the redevelopment of the Isla Vista Elementary School. Responsible for preparing the IS and MND documents, noticing of the project, and acting as environmental hearing officer.

Carpinteria Unified School District Measure U Bond Implementation CEQA Support. Dudek was retained to assist Carpinteria Unified School District in satisfying CEQA requirements relative to planned improvements at eight school campuses, as funded by the passage of Measure U. Improvements are centered upon the replacement of temporary portable structures with pre-fabricated permanent structures, as well as technology and infrastructure improvements at the campuses. Dudek prepared applications for necessary coastal development permits (CDP) and conditional use permits (CUPs) for each of the campuses, seven of which are located in the City of Carpinteria and one of which is located in Summerland (County of Santa Barbara). To accompany the applications, Dudek prepared a preliminary environmental evaluation demonstrating the proposed activity would qualify for a categorical exemption under CEQA.

Truckee High School Track and Field Improvements Project, Focused Environmental Noise Assessment, Truckee, California. The project included replacement of an existing track with all-weather surface, renovation of the related facilities for “field” competitions, a new restroom structure, replacement grandstand, and new public address system. A focused noise assessment was prepared for the Tahoe-Truckee Unified School District which addressed noise levels from construction activity and use of the proposed new public address system at vicinity residences.

Tahoe Lake Elementary School, Environmental Noise Assessment, Tahoe City, California. The project included modernization of the school, including the retention of all existing school structures, with some expansion for several structures, and reconfiguration/modernization of other structures. An outdoor instruction area was also proposed. A noise assessment was prepared for the Tahoe-Truckee Unified School District which addressed noise levels from construction activity, new mechanical equipment operation, and use of the proposed new outdoor instruction area at vicinity residences.

Cabrillo High School Baseball Field Lighting IS/MND, Lompoc Unified School District, Vandenberg Village, California. Served as CEQA coordinator for the environmental review of the proposal to add lighting for the varsity baseball field. Key issue areas of focus in the MND included aesthetics/visual resources, biological resources, cultural resources, and noise. As project manager, was responsible for managing preparation of the IS and MND documents, noticing of the project, preparation of CEQA findings, and presentation of report conclusions to the LUSD Board of Education.

Development

Yosemite Avenue-Gardner Avenue to Hatch Road Annexation, City of Merced, California. Performed noise and vibration assessment of this mixed-use development proposal and prepared the noise and vibration section of the EIR for the project. The approximately 70-acre annexation site was proposed to be developed with 20 multi-family structures containing a total of 540 units, a 13,700 square foot clubhouse, and a mixed use building with 66,000 square feet of ground floor retail and 30 residential units on the second floor.

Belden Barns Farmstead and Winery EIR, Sonoma County, California. As the noise specialist, assessed noise levels at nearby residences associated with construction and operation of the project, which includes development of a winemaking, hospitality, and farmstead food production facility. Noise sources assessed included additional traffic from the new operations, stationary equipment for the new uses, outdoor crowd activities and amplified sound, as well as construction equipment and activities.

Port of Hueneme Temporary Vehicle Storage Facility, City of Oxnard, California. Principal-in-Charge for the preparation of the Final EIR. Dudek was retained by the City of Oxnard to prepare the Final EIR after the City terminated the contract with the consultant that prepared the Draft EIR. The project entailed the construction and operation of a gravel-based surface parking lot covering a vacant 34-acre project site that would accommodate approximately 4,994 vehicles. The vehicles would arrive via ship and leave via rail or transport truck. At the end of 5 years, the gravel bed and perimeter fence would be removed, returning the site to pre-project condition. Dudek prepared responses to public comments received on the Draft EIR, conducted supplemental biological resources and cultural resources studies, and completed revisions to the Draft EIR.

Jefferson on Avalon Specific Plan, City of Carson, California. Performed for the City of Carson a peer-review of an Applicant provided acoustic study of the Avalon Specific Plan and prepared the noise and vibration section of a Mitigated Negative Declaration for the project. The approximately 20-acre Specific Plan site was planned to accommodate 1,200 dwelling units, 15,000 sf of commercial/food service uses, and 200 hotel rooms.

Creative Offices and Gateway Park Specific Plan Project, Beverly Hills Land Company, LLC, Beverly Hills, California. Prepared the noise and vibration section of the EIR. The Creative Offices Site consists primarily of a 2.11-acre linear strip of private property bound by North Santa Monica Boulevard to the northwest, Beverly Boulevard to the northeast, and Civic Center Drive to the southeast and southwest. The Gateway Park Site consists primarily of two private properties known as “Parcel 13” and “the Island” as well as a narrow buffer of public ROW. The Creative Office and Gateway Park Specific Plan would allow 11 office buildings within the southwestern portion of the Project Site, and a passive park consisting of landscaping, walkways, and water features in the northeastern portion of the Project Site. The 11 office buildings would contain a total of 128,282 gross square feet.

Northwest Passage Mixed Use, City of Pasadena, California. Prepared noise technical report to support the MND. The project proposes to construct a mixed-use development at 233 North Hudson Avenue, in the City of Pasadena. The project would consist of residential and commercial land uses and parking. The project would be built as one structure with three levels of subterranean parking and five above-ground levels. The first floor (ground floor) of the proposed structure would be a mixture of commercial space and a lobby area to service the residential component of the project. The next four floors would consist of 42 residential units.

Olivewood Village, City of Pasadena, California. Prepared noise technical report to support the MND. The project consists of two mixed-use developments, on separate parcels along Union Street. The Olivewood Village North project site consists of two buildings, the Easton (5 stories) and the Catalonia (two subterranean parking levels and six above-ground stories). The entire Olivewood Village North project site would include 11,373 square feet of commercial space and 86 residential units. The Olivewood Village Brantwood project site is proposed for one mixed use structure with two basement levels of parking. The building would contain 6,159 sq. ft. of commercial space accommodating both retail and office uses and a total of 55 residential units.

The Creek at Dominguez Hills, Carson, California. Prepared noise technical report and completed the noise and vibration section of the EIR. The proposed project includes a new sports, recreation, fitness, and wellness destination on a portion of the approximately 171-acre Victoria Golf Course, located at 340 Martin Luther King Jr. Street (formerly E. 192nd Street) in the City of Carson. The project site would be developed with approximately

532,500 square feet of buildings, including a multi-use indoor sports complex, youth learning experience facility, indoor skydiving facility, marketplace, clubhouse, recreation and dining center, restaurants (alternatively, a specialty grocery store may be developed in place of some of the restaurant uses), and a sports wellness center. The proposed project would also provide ziplining facilities, a community park, open space areas, a putting green, and a jogging path.

6001 Arcturus Avenue Outdoor Vehicle Storage Facility, City of Oxnard, California. Project Manager for the preparation of an Initial Study and MND. Dudek was retained by the City of Oxnard to complete CEQA environmental review; the completion of an Initial Study determined that an MND would be appropriate. The project involves the conversion of a former manufacturing facility to a paved surface parking lot with security fencing and lighting to accommodate storage of vehicles and shipping containers. The vehicles or shipping containers would arrive via ship and leave via rail or transport truck. Key issues addressed in the MND included biological resources (potential light impacts to adjacent wetland areas), cultural resources, hazardous materials (site contamination from the former manufacturing use), and transportation.

272 West Bellevue Drive, City of Pasadena, California. Prepared noise technical report to support the MND. The project would consist of seven residential condominiums housed in two separate structures, each with three levels. Concerns included project construction noise, increases in traffic noise from project-related trips, and traffic noise exposure for residents from Long Beach Freeway.

Restaurant Row, City of San Marcos, California. Under contract to the City of San Marcos, prepared the noise and vibration section of the Initial Study/Mitigated Negative Declaration to address the proposed replacement of several restaurants with residential and retail commercial development. The project consists of demolition of 63,484 square feet (sf) of existing (primarily vacant) restaurant uses on-site, and re-development of 202 multi-family residential units and 10,400 sf of commercial retail uses on the 10.5-acre project site. The noise and vibration analysis included completion of sound level measurements to characterize the ambient community noise levels at residences in the project vicinity, quantification of construction noise and vibration levels at vicinity residences, assessment of construction traffic noise levels, and modeling of sound levels from on-site stationary sources at the nearby existing residences.

Commerce Modelo Mixed Use Project. Prepared the noise analysis to support the EIR. The project involves a 17.37-acre project site in the City of Commerce. The Project would demolish the existing Veterans Memorial Park (which is currently in an advanced state of disrepair) and an adjacent vacant parcel and reconstruct the Project site to accommodate a mixed-use development of 850 residential units, 165,000 square feet of commercial uses, a 77,050-square-foot community center, a 5,000-square-foot museum, and approximately 4.75 acres of parks and open space.

Chandler Grove Master Plan Project, City of Tulare, California. Prepared a noise technical report to support the EIR. The proposed project consists of a mixed-use development on approximately 210 acres on active agricultural land. The project site is currently located within unincorporated Tulare County (County) but is planned to be annexed to the City of Tulare (City) as part of the project. The proposed project includes approximately 1,197 total units of low, medium, and high-density housing, a neighborhood commercial center, a community center, and a Kindergarten through 8th grade public school, and a central park.

Carol Kimmelman Sports and Academic Campus Project, Carson, California. Prepared noise technical report to support the EIR. The proposed project involves the redevelopment of an existing golf facility with new recreation programs that would offer sports and academic enrichment services to the public. A Learning Center would be provided with an approximately 25,000 square-foot building, and adjacent two basketball courts. A Tennis Center

would be located in the northern approximately 289 acres of the overall project site. Access to the Tennis Center would be through the approximately 23,000 square-foot Welcome Center. Within the tennis Competition Venue would be 12 hard courts and approximately 1,200 spectator viewing seats. The Soccer Center would be located on the southern approximately 58 acres of the project site, consisting of two multi-use fields which could be utilized for rugby, soccer, and other field sports, and eight full sized soccer fields.

West Campus Upper Plateau Project, March Joint Powers Authority, Riverside, California. Provided third-party technical peer review of the project noise and vibration study and prepared the noise and vibration section of the project EIR. The approximately 815-acre project site is proposed to include business park (65 acres), industrial (143 acres), mixed use (42 acres), public facilities (3 acres), parks and recreation (78 acres), streets (38 acres), with the balance of approximately 446 acres included in a permanent open space conservation easement. The noise and vibration analysis addressed construction noise and vibration, traffic noise increases from development of the new land uses, and operational noise (including parking lots, outdoor activities, and mechanical equipment) levels at existing noise-sensitive land uses in the project vicinity.

Ocean Meadows Residences, Ocean Meadows Residential LLC, Goleta, California. Prepared a noise and vibration technical study for this residential subdivision proposed on a portion of the former Ocean Meadows golf course. Assessment included construction-related noise, on-site mechanical equipment noise, and off-site traffic noise. The study concluded the need for noise mitigation including minimum setback distances for HVAC units from the adjacent property line for some lots, and inclusion of a noise barrier for some lots.

1431 El Camino Real MND, City of Burlingame, California. Under contract to the City of Burlingame, Dudek prepared an MND for the demolition of a two-story residential building and reconstruction of a three-story residential complex. Conducted the noise analysis for the MND which included a construction noise assessment with identified construction noise mitigations, and the evaluation of noise from a proposed “car stacker” parking machine. The project was approved by Burlingame in February 2018.

VMT/Orcem Bulk Materials Marine Terminal, Vallejo, California. Under contract to the City of Vallejo, Dudek performed a Peer Review of the noise study addressing a proposed redevelopment of the General Mills deep-water terminal and flour milling plant in Vallejo; the General Mills plant closed in 2004, and the project site has since remained vacant. The proposed redevelopment involves two separate operators, VMT and Orcem. The proposed VMT component of the project would reestablish industrial uses on 28 acres of the total 33-acre site and would include the removal of a deteriorated timber wharf and construction of a modern deep-water terminal with laydown area, and trucking and rail connections, primarily servicing the import and export of bulk and break-bulk commodities. The Orcem component of the project would involve construction and operation of an industrial facility to produce a high performance, less polluting alternative for the traditional Portland cement material used in most California construction projects. The Orcem component would involve construction of approximately 73,000 square feet of buildings, equipment, and enclosures, together with outdoor storage areas, on a 5-acre portion of the former General Mills plant site leased from VMT. Dudek Peer Review recommendations for the Project noise study included preparation of a detailed vibration analysis for rail freight activities of the facility, additional documentation addressing modeling of stationary noise sources on-site, and additional mitigation for stationary noise sources (bulk materials handling equipment).

San Luis Ranch Neighborhood N3, Coastal Community Properties, San Luis Obispo, California, Prepared detailed traffic noise exposure modeling of final roadway design plans and civil engineering improvement plans/lot layouts for Neighborhood N3 of the San Luis Ranch Specific Plan. Using TNM 2.5, demonstrated that proposed retaining wall features would yield adequate sound attenuation for homes closest to Froom Ranch Road such that special construction techniques or materials would not be necessary.

101 South La Cumbre Road Carwash, Dansk Investment Group, Santa Barbara, California. Prepared noise study for a proposed carwash in a commercial zone bordered by residential land use zones in Santa Barbara. Analysis included measurement of ambient community noise levels at nearby residential property lines, modeling of carwash operational noise levels at nearby residential properties, and comparison of predicted carwash noise levels to ambient noise levels, and to noise element policy and ordinance limits.

Trails at Lyon Canyon, New Urban West Developments, Santa Clarita Valley, Los Angeles County. Prepared a noise technical report in support of the noise section of the project EIR. The Project site, which totals approximately 233.5 acres, is located in unincorporated Los Angeles County (County), in the northern foothills of the Santa Susana Mountains at the westerly perimeter of the Santa Clarita Valley. The Project includes the development of 516 dwelling units with a mix of attached and detached dwelling units, and affordable senior housing within approximately 40 acres, as well as a recreational center within a 1.2-acre lot, a future fire station within a 1.43-acre lot, and approximately 171 acres of natural and improved open space. Project infrastructure would include internal roadways, trails and a new trailhead, a new water tank, and three Los Angeles County Flood Control District (LACFCD) lots with debris and desilting basins.

Montecito Ranch Estates Lots 2 and 3, Fremont Investment and Loan, Summerland, California. Prepared environmental noise evaluations for two separate proposed new residences in a large-lot subdivision with exposure to traffic noise from U.S. Highway 101. Evaluation addresses exterior and interior noise levels from future traffic levels, employing Traffic Noise Model (TNM) 2.5 for the analysis. Exterior noise exposure and interior noise exposure were calculated and compared to adopted CEQA significance thresholds for Santa Barbara County.

Crown Castle Cellular Equipment Installations, HP Communications Inc., Santa Barbara, California. Prepared a noise study for two separate cellular antennae installations in residential land use zones in Santa Barbara. Analysis included measurement of equipment operation noise at adjacent residential property lines, calculation of the day-night average noise level (Ldn), and comparison of noise level to noise ordinance allowances.

Splash-N-Dash Carwash, Saturn of Santa Maria, Orcutt, California. Prepared noise study for carwash operations in a commercial zone bordered by residential land use zones in Orcutt (Santa Barbara County). Analysis included measurement of equipment operation noise at adjacent residential property lines, calculation of the community average noise level (CNEL), and comparison of noise level to noise policy and ordinance allowances.

Daniels Center, Two Guys Food and Fuel, Manteca, California. Prepared noise study for a proposed commercial center including a quick-serve restaurant, convenience store, fueling pumps, and car wash to be located at on a currently vacant parcel at the northwest corner of the Airport Way and Daniels Street Intersection in Manteca, California. Existing residences are located to the north of the project site and across Airport Way (east of the project site). Analysis included measurement of ambient community noise levels at nearby residential property lines, modeling of project operational noise levels at nearby residential properties from carwash, fuel dispenser, heating, ventilation, and air conditioning (HVAC) systems for the buildings, and comparison of predicted project operational noise levels to ambient noise levels, and to noise element policy and ordinance limits.

Airport Plaza Retail Center, Two Guys Food and Fuel, Manteca, California. Prepared noise study for a proposed commercial center including a 3,410-square-foot convenience store, a 2,500-square-foot quick-service restaurant, two sit-down restaurants (2,092 square feet and 1,908 square feet), a gas station with 16 fueling positions, a 5,734-square-foot retail building, and a drive-through car wash to be located at on a currently vacant parcel at the southeast corner of the Airport Way and Lathrop Road Intersection in Manteca, California. Existing residences are located immediately adjacent to the east and south sides of the subject parcel, as well as to the north and west across the street from the project site. Analysis included measurement of ambient community noise levels at

nearby residential property lines; modeling of project construction noise at nearby residential receivers; modeling of project operational noise levels at nearby residential properties from carwash, fuel dispenser, heating, ventilation, and air conditioning (HVAC) systems for the buildings; and, modeling of traffic noise increases from project trip contributions. Construction noise levels and operational noise levels were compared against measured ambient noise levels, and to noise element policy and ordinance limits.

The Residences at Depot Street Project, The Housing Authority of Santa Barbara, Santa Maria, California. This project consists of residential apartments located along the westerly side of the North Depot Street between approximately West Mill Street and West Chapel Street, in the City of Santa Maria. Prepared an environmental noise report evaluating the exterior noise exposure level from the adjacent Depot Street and commercial and industrial land uses. Exterior and interior noise exposure were calculated and compared to adopted CEQA significance thresholds for Santa Maria. Also conducted an analysis for conformity with Housing and Urban Development (HUD) noise standards.

Camp Ramah Lodging Expansion, Camp Ramah, Ojai, California. Prepared a noise study to evaluate the proposed addition of cabins for the youngest camp participants, and the addition of loudspeakers for performances at the outdoor theater. The noise study was in support of a request to the County of Ventura to amend the conditional use permit for Camp Ramah, which has operated at this location for 40 years. The assessment included an extensive ambient noise survey, and prediction of noise levels from equipment operation associated with the new cabins, as well as the loudspeakers proposed for the outdoor theater. Mitigation included careful design of the loudspeaker system (with volume limiters and fixed orientation away from the closest residences) and the use of temporary sound blankets on fencing surrounding the area used for late evening traditional dance events.

Petaluma River Place Apartments, AEI, Petaluma, California. Prepared a noise assessment addressing exterior noise level exposure from transportation sources (including US Highway 101 and North Coast Rail) at the proposed site of a new apartment complex. The assessment was conducted in accordance with HUD noise guidelines and evidenced that a housing development at the site would comply with such guidance.

5885 Carpinteria Avenue, Carpinteria Bluffs LLC, Carpinteria, California. Prepared a noise and vibration technical report to support land uses entitlements for a proposed hospitality complex in Carpinteria. The 5885 Carpinteria Avenue Project site is located along the south side of Carpinteria Avenue on two parcels totaling 27.53 acres zoned Planned Unit Development (PUD). The parcels are separated by the Union Pacific Railroad right-of-way. The Project proposes a mixed-use development consisting of a hotel, affordable housing, restaurant, regenerative farm, farm stand, event barn, accessory structures, and dedication of a conservation easement for open space, public trails, and agriculture. The noise and vibration study evaluated transportation-related noise exposure from US Highway 101, Carpinteria Avenue and the UPRR rail lines at future hotel units and on-site residences; assessed construction noise levels at vicinity residences; quantified project-related traffic noise increases; and modeled resulting noise levels at vicinity residences from on-site noise sources.

1255 Coast Village Road, KIBO Group, Montecito, California. Prepared an environmental noise study addressing transportation-related noise sources upon proposed mixed-use development (1,411 square feet of restaurant space, 3,712 square feet of retail space, 3,342 square feet of office space, and two condominium residences) and short-term construction noise effects of the project on surrounding residential neighborhood.

Yokohl Ranch Master Development Plan, Tulare County, California. Prepared the noise technical report and noise EIR section for the Yokohl Ranch Maser Development Plan, an approximately 36,219-acre site about 15 miles east and southeast of Visalia in unincorporated Tulare County. The proposed project consists of suburban development and preserve areas, with approximately 7,662 acres designated for Planned Community Area, and

the balance remaining under an existing Foothill Agriculture designation. The Planned Community Area consists of three sub-areas: The Valley (2,534 acres of development, capped at 5,500 dwelling units); The Meadows (2,067 acres capped at 5,500 dwelling units); and, The Oaks (1,971 acres capped at 1,000 dwelling units). Each sub-area would also contain commercial uses including retail and commercial office space, and The Valley would also include hotel, golf course, parks, school, and institutional uses.

Grapevine Specific Plan, Kern County, California. Prepared the noise technical report and noise and vibration EIR section for the Grapevine Specific Plan which includes approximately 8,010 acres, of which approximately 3,232 acres (or about 40%) would be designated for ongoing open space uses (with grazing and open space as the predominant land uses), while approximately 4,778 acres (60%) would be developed as a residential community and employment center. The overall development for the entire Specific Plan is restricted to a maximum of 12,000 residential units and 5.1 million square feet of commercial and industrial floor area. The land use plan is designed as a series of conveniently located village centers, each composed of a mix of housing, neighborhood-serving retail and office uses, schools, parks, and community services.

March Air Reserve Base, South Campus Specific Plan Supplemental EIR. Under contract to the March Joint Powers Authority (JPA), Dudek performed a Peer Review of the noise study addressing proposed land use modifications to the approved March Business Center Specific Plan (2003). Peer review recommendations included off-site traffic noise evaluation and more comprehensive construction noise mitigations. The 2003 EIR evaluated impacts of the South Campus's 515 acres of developable land and 112 acres of Park/Open Space. The proposed Project would reduce developable acreage by 88 acres to 427 acres and increase Park/Open Space by 29 acres to 141 acres. On the parcel located at the southeast intersection of Orange Terrace Parkway and Van Buren Boulevard, a 61,336 square foot structure is proposed; on a 35 acre parcel west of Coyote Bush Road and north of Krameria Avenue an 800,000 square foot industrial warehouse is proposed; a 6.2-acre dog park and paseo would be constructed on the eastern side of Barton Street across from the Santa Inez Way and Barton Street intersection; and, Caroline Way would be constructed from the west end of Krameria Avenue north to connect with Coyote Bush Road.

Carson Gateway Specific Plan EIR – Managed the preparation of the noise and vibration section of the EIR. The specific plan encompasses approximately 20.72 acres in the City of Carson immediately southwest of I 405, situated along South Avalon Boulevard and East 213th Street. in the City. The Project site is generally bordered by I-405 to the north and east, East 213. The Project would involve removal of the existing site uses and construction of a mixed-use neighborhood containing multifamily residences, townhomes, single family residences, neighborhood-serving commercial uses, open space, and parking. A total of approximately 1,198 residential units and 10,000 square feet of commercial space are envisioned under the Specific Plan.

Aquabella Specific Plan Update EIR - – Managed the preparation of the noise and vibration section of the EIR. The Project site is comprised of 673.2 acres located in the southeastern portion of the City of Moreno Valley, situated east of Interstate (I)-215, south of State Route (SR)-60, and north of Lake Perris. The Specific Plan Update envisions to approximately 15,000 multi-family residences; 49,000 sf of supporting commercial and retail uses, a 300-room hotel; 80 acres of parks (comprised of 40 acres of lakes, plus a 15-acre lake promenade, and 25 acres of additional parks), 40 acres of elementary school and middle school sites, open space, and other amenities.

Sandalwood Travel Center MND, City of Calimesa, Calimesa, California. Prepared the noise and vibration technical memorandum and MND noise section for this mixed-use proposal including truck parking stalls, fueling dispensers and a convenience store with a drive-through. The noise assessment addressed construction, project additions to roadway traffic, and stationary equipment operations on-site.

Smoky Bear Travel Center MND, Los Angeles County, Castaic, California. Prepared the noise and vibration technical memorandum and MND noise section for this mixed-use proposal including gas station, restaurant, and motel adjacent to Interstate 5 (I-5). The noise assessment addressed construction, project additions to roadway traffic, and stationary equipment operations on-site.

Brouillard Winery, Private Client, Lompoc Area, Santa Barbara County. Prepared a noise study in support of land use entitlements to establish a public tasting room and other amenities at an existing winery property in Santa Barbara County. The proposed facility improvements include two Grange buildings, Chardonnay building, wine caves, crush pad, and Chateau building containing ground floor tasting room, conference room, and offices and second floor residence. The Chateau building would have adjacent outdoor patios and courtyards with seating and gathering areas intended for use by visitors to the winery. The noise study was prepared in response to a request from County staff that proof be presented evidencing noise levels from amplified music in outdoor gathering areas and mechanical equipment to be employed on the crushing pad would comply with restrictions contained in the County Noise Element.

741 San Ysidro Road, Private Client, Montecito, California. Prepared a noise assessment for a proposed emergency electrical generator at a private residence. Assessment included ambient noise survey, research to obtain manufacturer sound power data for the generator, quantification of sound levels at the neighboring residential property line, and specification of a sound enclosure to meet Santa Barbara County noise element policy standards.

2066 Eucalyptus Hill Road, Private Client, Santa Barbara, California. Prepared a noise assessment for a proposed emergency electrical generator at a private residence. Assessment included ambient noise survey, quantification of sound levels at the neighboring residential property line, and specification of a sound enclosure to meet City of Santa Barbara municipal code noise standards.
850 Centinela Lane, Private Client, Santa Barbara, California. Prepared a noise assessment for a proposed emergency electrical generator at a private residence. Assessment included quantification of sound levels at the neighboring residential property line, and specification of a sound enclosure to meet City of Santa Barbara municipal code noise standards.

665 Picacho Lane, Private Client, Montecito, California. Prepared a noise assessment for air conditioning units and pool equipment proposed for a neighboring new single-family residence. Assessment included ambient noise survey, research to obtain manufacturer sound power data for the air conditioner units and pool equipment, quantification of sound levels at the client's residential property line, and comparison of modeled noise levels to the County of Santa Barbara noise element noise standards.

University Villages Specific Plan, SSBT LCRE V. LLC (c/o Meadow Lane LLC), Chula Vista, California. Prepared the noise technical report and noise EIR section for the University Villages Specific Plan, an approximately 460-acre site along the west side of State Route 125. The proposed project consists of a suburban development including residential, commercial, industrial park, public facility, and open space uses. A total of 150 acres of the site will be reserved for open space uses, including neighborhood parks, a greenbelt system, and natural reserve.

Villages of San Jacinto Specific Plan, City of San Jacinto, California. Prepared the noise technical report and noise EIR section for the Villages of San Jacinto Specific Plan, an approximately 600-acre site along the west side of Sanderson Avenue in San Jacinto. The proposed project consists of a suburban development including residential, commercial, business park, public facility, and open space uses. One elementary school and one high school are planned in the northeastern portion of the site. A total of 100.7 acres of the site will be reserved for open space uses, including four neighborhood parks, a greenbelt system, three lakes, and landscape easements.

Ocean View Estates, Rick Engineering, Encinitas, California. Prepared an environmental noise evaluation addressing a four-lot residential subdivision with direct exposure to Interstate 5 freeway. Construction-related (short-term), exterior noise exposure, and interior noise exposure were calculated and compared to adopted CEQA significance thresholds for Encinitas.

Thompson Oak Court Mixed Commercial and Residential Project Environmental Noise Study, Buenaventura Homes Inc., Ventura, California. Prepared an environmental noise study addressing transportation-related noise sources upon proposed mixed-use development (ground-floor retail with three levels of residential condominiums) and short-term construction noise effects of the proposed project on the surrounding residential neighborhood.

Mixed Commercial and Residential Project, 412-414 Anacapa Street, Anabuilt Properties LLC, Santa Barbara, California. Prepared an environmental noise study addressing transportation-related noise sources upon proposed mixed-use development (ground-floor commercial office with two levels of residential condominiums) and short-term construction noise effects of the proposed project on the surrounding residential neighborhood.

Santa Maria Smith Food Shopping Center EIR, City of Santa Maria, Santa Maria, California. Managed and co-authored the EIR for this shopping center project, which included Smith Food King, a major drugstore chain, and subordinate retail. The project site fronted a state highway, for which encroachment permits were sought and obtained. Major issues included transportation, air quality, drainage, wastewater collection and conveyance, noise, solid waste, and geology.

El Centro Kmart EIR, City of El Centro, El Centro, California. Managed and co-authored the EIR for this shopping center project, which included Kmart, a major grocery chain, a major drug store chain, subordinate retail space, and three restaurants. The project site fronted a state highway, for which encroachment permits were sought and obtained. Major issues included transportation, air quality, drainage, wastewater treatment, noise, schools, and fiscal impacts.

South Fairview Mixed-Use Center, Gerard Development Company, Goleta, California. Served as environmental and land use project manager for entitlement and permitting of an office, retail, and residential complex located on a former gasoline service station site; remediation of the site was a key issue in the land use permitting review and approval. The project was also the first development subject to a new growth management ordinance enacted immediately prior to land use approvals.

Toyota Facility Expansion, Toyota of Santa Barbara, Goleta, California. Served as the environmental project manager for the expansion and modernization of the showroom and service facilities. Prepared technical reports for noise, air quality, and flooding and completed the application package to the County of Santa Barbara. Represented the landowner through the entitlement review process, including presentation at the Planning Commission.

Arroyo Quemada Slope Repair, Merrill/Schafer/Jones, Gaviota Area of Santa Barbara, California. Managed and served as an agent representing three oceanfront property owners to repair failure of the sea cliff from a massive landslide. Prepared applications for emergency and coastal development permits, solicited bids for structural engineering design.

Emerald Hills EIR, County of San Luis Obispo, San Luis Obispo, California. Managed and co-authored the EIR for this residential proposal located outside of the urban limit line of the City of San Luis Obispo. Under the proposal, 37 homes were to be sited on the 56-acre property. The site is located in an area of high scenic value, on gently to moderately sloping land in the foothills of the Irish Hills of San Luis Obispo County. Key issues in the EIR included geology, water supply (proposed from a localized, fractured bedrock aquifer), wastewater disposal (private wastewater treatment plant), biology, aesthetics, traffic, drainage, and air quality.

Ocean Bluffs Specific Plan EIR, City of Carpinteria, Carpinteria, California. Managed and co-authored the EIR for a specific plan project located on 85 acres of oceanfront property in Carpinteria, California. The proposal included a 150-room hotel, 325 semi-attached townhomes, several restaurants, and a gas station. Site constraints included an active earthquake fault, an adjacent seal rookery, limited water supply, and problematic drainage.

Los Robles Del Mar Specific Plan EIR, County of San Luis Obispo, San Luis Obispo, California. Co-authored the EIR for this project, which included a range of residential lots and structures, as well as a private school site. Key sections authored in the EIR included geology, surface drainage, water quality, and air quality.

Summerland Community Plan, County of Santa Barbara, Summerland, California. Co-managed the preparation of the community plan for the Summerland Area, which was adopted by the County of Santa Barbara. Managed and co-authored the EIR on the community plan. Issues of primary concern included traffic and circulation, parking resources, water supply, wastewater treatment, biological habitat, and geology and soils.

Village Square Commercial Center Mitigation Monitoring and Reporting Plan (MMRP), City of Solvang, California. This project involved the construction of a new commercial “factory outlet” center in Solvang, California. Dudek prepared the MMRP and was retained by the City of Solvang to implement the MMRP. Responsible for administration of MMRP implementation, including monitoring of dust control during site preparation, as well as traffic, noise, and construction safety mitigations during the construction phase. The monitoring involved daily reporting, coordination with staff and local agencies, and coordination with the on-site construction crew.

Energy

Central Valley Gas Storage Project, Colusa County, California. Prepared the noise assessment for the Central Valley Gas Storage Project proposed by Central Valley Gas Storage LLC (Central Valley), involving the development of a depleted underground reservoir at the Princeton Gas Field located in Colusa County, 60 miles northwest of Sacramento, California. The project involves constructing a 10-acre compressor station site, a 4-acre remote well pad site with nine injection/withdrawal wells, up to five observation wells, a 1-acre metering station site, and a 14.7-mile, 24-inch diameter pipeline to connect to PG&E’s transmission system. The noise assessment was conducted pursuant to the provisions of CEQA and CPUC procedures.

Calle Real Photovoltaic Habitat Restoration Plan, Endelos Energy, Santa Barbara County, California. Project manager for the delivery of a coastal sage scrub habitat restoration plan, and completion of biological and cultural resources monitoring required under the Calle Real Photovoltaic Project MND MMRP.

Shafter Solar 20 MW Photovoltaic Energy Production Facility, Shafter California. Project environmental coordinator for acquisition of land use, grading, and construction permits for solar energy installation. Provided environmental mitigation measure and project condition compliance review for construction plan sets, and managed delivery of air quality assessment, hazardous materials site assessment, and biological pre-construction surveys.

Rugged Solar Farm, Boulevard Community, San Diego County, California. Prepared a noise technical study for incorporation into an EIR addressing a proposed 80 MW solar generation facility on 765 acres. Analysis included assessment of facility equipment noise at adjacent residential property lines, calculation of construction noise levels at nearby sensitive receptors, and cumulative construction noise analysis.

Tierra Del Sol Solar Farm, Boulevard Community, San Diego County, California. Prepared a noise technical study for incorporation into an EIR addressing a proposed 60 MW solar generation facility on 420 acres. Analysis

included assessment of facility equipment noise at adjacent residential property lines, calculation of construction noise levels at nearby sensitive receptors, and cumulative construction noise analysis.

Edwards Sanborn Solar Facility, Kern County, California. Peer-reviewed a noise technical report for the Edwards Air Force portion and prepared a noise technical study for the privately held Sanborn portion of this consolidated solar energy facility with 346-megawatt (MW) photovoltaic solar generation and a battery energy storage system (BESS) with a capacity up to 1,501-megawatt hour (MWhr) located on approximately 6,000 acres of private property in Kern County, California. Analysis included assessment of facility and gen-tie equipment noise at adjacent residential property lines and calculation of construction noise levels at nearby sensitive receptors, for inclusion in an EIR for the project.

Westside and Whitney Point Solar Farm, Westside Community, Fresno County, California. Project manager for permitting of two separate 20 MW solar generating facilities on two adjacent 160 acre project sites. As a condition of allowing a connection to electrical distribution infrastructure, Pacific Gas & Electric required 5 acres within the property to construct an electrical substation to serve the project and other solar electrical generating facilities.

Little Bear Solar Farm, Fresno County, California. Prepared a noise technical study for incorporation into an EIR addressing a proposed 180 MW solar generation facility on 1,288 acres. Analysis included assessment of facility equipment noise at adjacent residential property lines and calculation of construction noise levels at nearby sensitive receptors.

Sandrini Solar Farm, County of Kern, Mettler, California. Under contract to Kern County, completed peer review of an applicant provided acoustic report and prepared the noise and vibration section of the EIR. The proposed facility consists of a 300 megawatt (MW) solar photovoltaic facility including a 100 MW battery energy storage system. Analysis included construction noise and assessment of facility equipment noise at adjacent residential property lines and nearby sensitive receptors.

Kern Solar Farm, County of Kern, Lost Hills California. Prepared a noise technical study for incorporation into an EIR addressing a proposed 500-megawatt (MW) of photovoltaic solar generation and a battery energy storage system (BESS) with a capacity up to 4,000-megawatt hour (MWhr) on a 3,370 acre project site. Analysis included assessment of facility equipment noise at adjacent residential property lines and calculation of on-site construction activity noise and off-site construction traffic noise levels at nearby sensitive receptors.

Los Banos Solar Farm, Confidential Client, Merced County, California. Prepared a noise technical study for incorporation into an EIR addressing a proposed 155 MW solar generation facility with 75 MW energy storage components on 1,500 acres. Analysis included assessment of facility equipment noise at adjacent residential property lines and calculation of construction noise levels at nearby sensitive receptors.

Desert Center Solar Farm, Confidential Client, Riverside County, California. Prepared a noise technical study for incorporation into an EIR addressing a proposed solar power generating facility with up to 117-megawatts (MW) of photovoltaic (PV) solar generation and up to 117 MW of battery storage located on approximately 1,192 acres of land in Riverside County, California. Analysis included assessment of facility equipment noise at adjacent residential property lines and calculation of construction noise and vibration levels at nearby sensitive receptors.

Solar Farm, Confidential Client, Champagne County, Illinois. Prepared a noise technical study for satisfaction of permit requirements and to demonstrate compliance with Illinois noise regulations addressing a proposed 150 MW solar generation facility on 1,275 acres. Analysis included measurements to characterize the ambient noise level from farming and transportation sources in the area, and assessment of facility equipment operational noise at nearby sensitive receptors (i.e., adjacent rural residences).

San Joaquin Valley Solar Farm, Confidential Client, Fresno County, California. Prepared a noise technical study for incorporation into an EIR addressing a proposed 200 MW solar generation facility on 1,700 acres. Analysis included assessment of facility equipment noise at adjacent residential property lines and calculation of construction noise levels at nearby sensitive receptors.

Solar Farm, Confidential Client, Culpeper County, Virginia. Prepared a noise technical study for satisfaction of permit requirements and to demonstrate compliance with Culpeper County noise regulations addressing a proposed 80 MW solar generation facility. Analysis included assessment of facility equipment noise at adjacent residential property lines and calculation of construction noise levels at nearby sensitive receptors.

Avondale Energy Storage Facility, Confidential Client, Avondale, Arizona. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The noise study compared the operational noise levels against standards prescribed in the Avondale zoning ordinance and demonstrated the facility would be in compliance with such standards and would not generate noise levels at area residences substantially higher than ambient noise levels.

Superstition Energy Storage Facility, Confidential Client, Gilbert, Arizona. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The noise study compared the operational noise levels against standards prescribed in the Gilbert zoning ordinance and demonstrated the facility would be in compliance with such standards and would not generate noise levels at area residences substantially higher than ambient noise levels.

Front Range Energy Storage Facility, Confidential Client, Aurora, Colorado. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at vicinity residential receivers. The noise study compared the operational noise levels against standards prescribed in the Aurora zoning ordinance and demonstrated the facility would comply with such standards and would not generate noise levels at area residences substantially higher than ambient noise levels.

Crossroads Energy Storage Facility, Confidential Client, Chesapeake, Virginia. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at vicinity residential receivers. The noise study compared the operational noise levels against standards prescribed in the Chesapeake zoning ordinance and demonstrated the facility would comply with such standards and would not generate noise levels at area residences substantially higher than ambient noise levels.

Magnolia Energy Storage Facility, Confidential Client, New Orleans, Louisiana. Completed operational noise modeling and prepared a noise technical study addressing operational noise from transformer and inverter equipment at vicinity residential receivers. The noise study compared the operational noise levels against standards prescribed in the Jefferson Parish zoning ordinance. Dudek designed and modeled a noise barrier wall for the facility in order to reduce facility operations noise levels at nearby residents to comply with applicable local standards.

Mountain Peak Energy Storage Facility, Confidential Client, Saline County, Kansas. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at vicinity residential receivers. The noise study compared the operational noise levels against standards prescribed in the Saline County zoning ordinance and demonstrated the facility would comply with such standards and would not generate noise levels at area residences substantially higher than ambient noise levels.

Great Plains Energy Storage Facility, Confidential Client, Labette County, Kansas. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at vicinity residential receivers. The noise study compared the operational noise levels against ambient noise levels at residences in the vicinity of the proposed project, and demonstrated the project would not generate noise levels at area residences substantially higher than ambient noise levels.

North Street Energy Storage Facility, Confidential Client, Brookhaven, New York. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The technical memorandum compared the operational noise levels against standards prescribed in the Brookhaven municipal code and demonstrated the facility would comply with such standards.

Cross Town Energy Storage Facility, Confidential Client, Gorham, Maine. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The technical memorandum compared the operational noise levels against standards prescribed in the Gorham municipal code and demonstrated the facility would comply with such standards.

Copper Energy Storage Facility, Confidential Client, Butte, Montana. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The technical memorandum compared the operational noise levels against standards prescribed in the Butte-Silver Bow County Zoning Ordinance and demonstrated the facility would comply with such standards.

Angleton Energy Storage Facility, Confidential Client, Angleton, Texas. Completed an ambient noise survey and prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The technical memorandum compared the operational noise levels against allowable limits prescribed in the special use permit for the facility and demonstrated the facility would comply with such standards.

Cascade Energy Storage Facility, Confidential Client, Stockton, California. Completed an ambient noise survey and prepared a noise technical study to quantify construction-related noise levels and operational noise from transformer and inverter equipment at adjacent residential receivers. The noise study compared the operational noise levels against standards prescribed in the San Joaquin County code of ordinances and demonstrated the facility would comply with such standards.

Juniper Creek Energy Storage Facility, Confidential Client, Rancho Cordova, California. Completed an ambient noise survey and prepared a noise technical study to quantify construction-related vibration and noise levels and operational noise from transformer and inverter equipment at adjacent residential receivers. The noise study compared the operational noise levels against standards prescribed in the Rancho Cordova municipal code and demonstrated the facility would comply with such standards, given incorporation of a sound barrier wall that was designed and modeled by the Dudek noise team.

Ceres Energy Storage Facility, Confidential Client, Stockton, California. Prepared a noise technical study to quantify operational noise from transformer and inverter equipment at adjacent residential receivers. The noise study compared the operational noise levels against standards prescribed in the City of Stockton noise ordinance and demonstrated the facility would be in compliance with such standards.

Martin Substation/Egbert Switching Station Project, On-Call CEQA/NEPA Services, CPUC, San Francisco, California. Served as senior noise specialist for review of the Pacific Gas & Electric's proposed Martin Substation/Egbert Switching Station Project and 230 kV transmission line. Responsibilities include review of the noise section of Proponent's Environmental Assessment, preparation of the noise section of an Initial Study and Environmental Impact Report, and responses to public comments related to noise issues.

Southern California Gas Company, Goleta Storage Field Expansion Proposal, Santa Barbara County, California. Under contract to the Energy & Minerals Division of Santa Barbara County, conducted independent verification sound level measurements, completed third party technical review of applicant submitted noise reports, and prepared the noise section for the Re-circulated Draft EIR addressing a proposal for development of new wells to access deeper natural gas storage basins.

Central Valley Gas Storage Project, Colusa County, California. Prepared the noise assessment for the Central Valley Gas Storage Project proposed by Central Valley Gas Storage LLC (Central Valley), involving the development of a depleted underground reservoir at the Princeton Gas Field located in Colusa County, 60 miles northwest of Sacramento, California. The project involves constructing a 10-acre compressor station site, a 4-acre remote well pad site with nine injection/withdrawal wells, up to five observation wells, a 1-acre metering station site, and a 14.7-mile, 24-inch diameter pipeline to connect to PG&E's transmission system. The noise assessment was conducted pursuant to the provisions of CEQA and CPUC procedures.

Landfill Waste-to-Energy Facility, Chicago Grade Landfill, Templeton, California. Prepared air quality emissions evaluations and assisted in the technology selection process for a proposed waste-to-energy facility at the landfill to replace burial practices with a thermal conversion unit to produce electricity from incoming solid wastes.

Environmental Review for an Oil and Gas Development Project, Kern County, California. Project manager for the environmental review of an oil and gas development project in Kern County. The project consists of the development of oil production and steam injection wells, as well as associated supporting infrastructure, in an existing oil field.

Bishop Tank Farm Abandonment Phase, ARCO, Santa Barbara, California. Prepared final abandonment plans for this tank farm, located 15 miles west of Santa Barbara. The project involved the removal of three sets of flow lines (more than 600 feet) and a 4-inch natural gas line (more than 1,500 feet) that were originally fed from the offshore platforms at Coal Oil Point.

Gas Processing Facility Expansion, Chevron, Carpinteria, California. Prepared an environmental assessment and risk analysis for modifications to the Chevron Gas Plant in Carpinteria to permit its expansion from a capacity for 4.5 million standard cubic feet (MMSCF) of gas to 23 MMSCF.

HS&P Gas Plant, Torch Oil Company, Lompoc, California. Assisted with obtaining permits to expand the Lompoc HS&P gas plant facility, which was formerly operated by Union Oil Company.

Mariposa Pipeline Alternatives Study, Mariposa Pipeline Company, Santa Barbara, California. Provided the Mariposa Pipeline Company with assistance in the design and permitting of a 3,000-foot oil pipeline and storage/surge tank at the Gaviota Processing Plant in southwestern Santa Barbara County.

Oil Field Redevelopment, Union Pacific Resources, Long Beach, California. Provided technical assistance and guidance to Union Pacific Resources during permit review by the Port of Long Beach for conversion of a historical, depleted oil field into a handling facility for Toyota USA.

Healthcare

Cancer Center of Santa Barbara, Cancer Foundation of Santa Barbara, California. Project manager responsible for securing land use entitlements and construction permits for a cancer treatment campus in Santa Barbara. The Cancer Center of Santa Barbara (CCSB) project consists of a comprehensive outpatient cancer treatment facility (53,407 square foot structure), four-tier parking structure (containing 180 parking spaces), two free-standing commercial structures, and six rental-housing units (in three duplexes). Dudek provided mitigation monitoring during construction and secured amendments to the development plan to replace one of the proposed residential duplexes with a 2,100 square foot addition to the treatment facility to house a third linear accelerator and additional parking spaces. The CCSB provides treatment services that Santa Barbara residents formerly had to travel to Los Angeles to receive.

Solvang Medical Center, Sansum Clinic, Solvang California. Project manager responsible for securing land use entitlements for a general medical clinic and cancer treatment center in Solvang, as a satellite location to the Sansum Clinic system in Santa Barbara. Sansum Solvang Clinic will occupy a 1.9-acre site adjacent to Mission Drive at the east entrance to Solvang. The proposed two-story medical office building with basement, will be 35-feet tall, with a net floor area of 25,495 square feet and with an associated parking lot providing 133 total parking spaces. Dudek prepared stand-alone technical reports for biological resources and cultural resources, directed the work of a transportation engineering firm, and prepared all application materials for the development plan.

Medical Office Building Acoustic Services, Goleta, California. Cottage Health Systems retained Dudek to prepare acoustic studies to support CEQA environmental review for a proposed new medical office building, including construction noise assessment, operational noise evaluation of mechanical equipment, and interior noise level calculation for zoning ordinance compliance. Dudek also performed a separate construction noise evaluation for extended daily schedules; and interior noise level verification during compliance sign-off.

1722 State Street Surgical Center, 1772 State Street Investors, Santa Barbara, California. Prepared an environmental noise study addressing transportation-related noise sources upon proposed outpatient surgical center (approximately 10,000 square feet), and construction noise (short-term) and mechanical operation noise (long-term) of the proposed project on surrounding residential neighborhood. A subsequent interior noise report was prepared to evaluate project compliance with indoor noise criterion, including identification of window and exterior door specifications to achieve compliance.

Samarkand Senior Residential and Convalescent Care Facility Expansion MMRP, The Samarkand Retirement Center, Santa Barbara, California. This project consisted of mitigation monitoring and condition compliance for the construction of the Samarkand Senior Residential and Convalescent Care Facility. Dudek was retained by the City of Santa Barbara as an independent contractor to administer/implement the MMRP adopted with the project EIR. Responsible for direct monitoring and supervision of technical specialist monitors in the areas of biological resources, air quality, and noise. The monitoring involved daily field monitoring, preparation of logs/status reports, coordination of pre-construction meetings, and interfacing between lead agency and applicant regarding compliance issues.

Cypress Point Retirement Community MMRP, Lenvik & Minor Architects, Santa Barbara, California. Responsible for preparation of the MMRP for the first phase of development for an approved new retirement community, and subsequent MMRP implementation, under contract to the City of Santa Barbara. Provided monitoring for tree trimming and removal, removal of abandoned structural foundations, and development of a limited number of new foundation pads on the biologically sensitive Wilcox Property in Santa Barbara. The monitoring effort spanned approximately 4 months and included measures related to biology, noise, and air quality (dust generation).

Golden Inn Senior Housing Project, The Housing Authority of Santa Barbara, Santa Ynez, California. This project consists of a range of senior housing opportunities, including assisted living, memory care, independent living, and on-site housing for facility employees. Prepared an environmental noise report evaluating the exterior noise exposure level from the adjacent State Route 246 highway facility, employing TNM 2.5 for the analysis. Exterior and interior noise exposure were calculated and compared to adopted CEQA significance thresholds for Santa Barbara County.

Hotel & Motel

Hyatt House Hotel Project, Vacaville, California. Prepared a noise assessment and authored the MND noise section. Noise assessment included construction noise and vibration, on-site operational equipment noise, and off-site traffic noise contributions. Residences are located to the northeast of the project site, the closest noise sensitive receptors. The project site is located at the southwest corner of Vaca Valley Parkway and E. Monte Vista Avenue in the northwestern portion of the City of Vacaville, with on-site traffic noise exposure primarily from Vaca Valley Parkway. The proposed development includes a hotel, free-standing restaurant building, and office building on 4.42 developable acres, along with 242 parking spaces. The four-story, 144-room Hyatt House Hotel would be located in the western portion of the project site; the restaurant building (includes two restaurants with one providing drive thru service) would be one story tall; a one-story office building would also be included.

Sand Canyon Resort, Santa Clarita, California. Under contract to the City of Santa Clarita, Dudek performed a Peer Review of the noise study addressing a proposed hotel and resort project on 77 acres of land consisting of a hotel with a three-story building; a spa garden inn within three three-story buildings, villas associated with the hotel (23 buildings); three restaurants; a spa/gym/salon; conference/ballroom space; meeting rooms; outdoor recreation consisting of two pools, one tennis court, two pickleball courts, two miles of on-site trails, and a nine-hole miniature golf course. Dudek provided recommendations for report revisions including additional quantitative analysis for construction and traffic-related noise, the use of local noise ordinance limits as significance thresholds for the determination of impact levels, and additional mitigations to address excessive construction noise levels.

Miramar Hotel Project, Montecito, California. Prepared a noise technical report to address the reconstruction of the historic beachfront Miramar Hotel in Montecito. The development includes 170 key plan; Ballroom of approximately 6000 square feet; Freestanding presidential suite at the ocean; Breakfast and Lunch upscale seafood bar and grill style restaurant at the beach; Miramar Club with included pool and all day dining poolside restaurant (approximately 120 seats); Spa/ fitness facility; 441 on-site parking spaces (valet/ guest use) - all surface; and, Four meeting rooms of 750- 995 SF on the ground floor and second level of the main building. Noise assessment included construction noise and vibration, on-site operational equipment noise, on-site transportation-related noise exposure (freeway and railroad), and off-site traffic noise contributions. Mitigation for noise exposure included a sound wall along the freeway frontage of the property, and sound rated windows for upper floor guest rooms facing the freeway.

Covina Park View Hotel Project, Covina, California. Prepared a noise technical report and authored the MND noise section. Noise assessment included construction noise and vibration, on-site operational equipment noise, on-site traffic noise exposure, and off-site traffic noise contributions. The project site is located in the City of Covina, California, at the end of the cul-de-sac on Park View Drive south of Holt Avenue, with traffic noise exposure primarily from nearby Interstate-10 and Park View Drive. The proposed development includes a 4-story hotel with approximately 130 rooms and a surface parking lot. Noise evaluation was focused on the nearest noise sensitive receptors, existing residences located within 75 feet of the project site and along roadways providing primary access to the site,

101 Garden Hotels Project, Santa Barbara, California. Prepared a noise technical report including assessment of construction noise and vibration, on-site operational equipment noise, on-site transportation-related noise exposure (freeway and railroad), and off-site traffic noise contributions. The project site is located on the southerly side of Yanonali Street, along the westerly side of Garden Street in Santa Barbara, the US Highway 101 and Union Pacific Railroad alignments are located relatively close to the north of the project site. The proposed development would have a single level below-grade shared parking garage, and two separate hotel facilities joined together near the center of the site. The project includes 250 guestroom Dual Brand Extended Stay and Lifestyle three story Hotel with approximately 190 car underground parking structure and 60 on grade parking spaces. The Hotels include restaurants, bar, lounge, Library, Media Salons, meeting rooms, Fitness rooms, market, guest laundry and roof top deck. An optional pool is proposed for a courtyard in the northern hotel, a separate optional pool area is indicated on the south side of the southern hotel.

Municipal

City of Carpinteria, California. Functioned as contract environmental and planning staff from 1986 to 1988. Responsible for preparation of CEQA ISs and negative declarations (NDs), planning staff reports for Planning Commission and City Council, and administration of CEQA process for the City.

City of Ojai, California. Functioned as contract environmental and planning staff from 1987 to 1990. Responsible for preparation of CEQA ISs and NDs, planning staff reports for Planning Commission and City Council, and administration of CEQA process for the City.

City of Solvang, California. Functioned as contract environmental and planning staff from 1989 to 1992.

Functioned as the planning director in 1997 and 1998 (also on a contract basis).

City of Rohnert Park On-Call Acoustic Services, Sonoma County, California. As a senior acoustician, Mr. Leech has prepared noise and vibration assessments or provided acoustic consultation on behalf of the City for more than a half-dozen projects throughout the City of Rohnert Park.

Santa Barbara Community Wildfire Protection Plan PEIR, City of Santa Barbara, California. Prepared the noise and vibration section of the EIR for the comprehensive fire management program for the City of Santa Barbara, known as a Community Wildfire Protection Plan (CWPP). The purpose of the project is to update the City's 2004 Wildland Fire Plan to account for changes in the City's fire environment and work completed under the 2004 Plan with a comprehensive, coordinated plan to mitigate the impact of wildland fire to the City. The noise and vibration section evaluated changes in noise exposure for noise-sensitive uses (i.e., residences) from alterations in the proposed fuel management program, potential impacts, and mitigation measures related to implementation of the proposed CWPP.

Wildlife Damage Management Project EIR/EIS, California Department of Food and Agriculture/United States Department of Agriculture. Authored a noise and vibration technical report as the basis for the noise and vibration section of the combined EIR/EIS. The proposed Wildlife Damage Management Program is proposed to be jointly implemented by the California Department of Food and Agriculture (CDFA), Wildlife Services Division of the US Department of Agriculture (USDA) Animal and Plant Inspection Service (APHIS WS), and County Agricultural Commission offices throughout California. The Project will describe and formalize a framework for management, abatement, and, where necessary, targeted removal of individual wildlife that pose a threat to wildlife classified as threatened or endangered or having other special status, California's agricultural industry (including property improvements, agricultural soils, planted crops, and livestock) or human health and safety. Activities conducted under the Project are expected to occur across the state and within the various natural, urban, and agricultural environments. Noise could be generated from the use of deterrent devices, trapping activities, and hunting.

Reedley Field Office Replacement, California Department of Motor Vehicles (DMV), Reedley California. Prepared the noise and vibration section of the MND for the field office replacement project under contract to California Department of General Services (DGS). The approximately 3.5-acre project site is located at 1895 East Dinuba Avenue, between South Orange Avenue and South Buttonwillow Avenue in the southeastern portion of the City of Reedley (City) in the County of Fresno. The proposed project would consist of construction of a new approximately 13,701-square-foot, single-story DMV field office with an attached carport and associated on-site circulation and landscaping improvements. The noise analysis included completion of sound level measurements to characterize ambient community noise levels at nearby residences, quantification of construction noise levels at nearby residences, evaluation of traffic noise increases from project trips, and assessment of noise from on-site mechanical equipment, including HVAC and an exterior public address system.

San Francisco Fell Street Field Office Replacement, California Department of Motor Vehicles (DMV), San Francisco, California. Prepared the noise and vibration section of the MND for the field office replacement project under contract to California Department of General Services (DGS). The proposed project consists of the demolition of the existing 24,000 square foot, two-story field office and construction of a new field office on the same 2.47-acre site. The proposed 20,000 square foot single story building would be a maximum 36 feet high as measured from the finish floor elevation to the top of the roof. The existing field office currently occupies a 15,500 square foot footprint, while the proposed field office would occupy a maximum 20,000 square foot footprint. The noise analysis included completion of sound level measurements to characterize ambient community noise levels at nearby residences, quantification of construction noise levels at nearby residences, evaluation of construction traffic noise increases, and assessment of noise from on-site mechanical equipment, including HVAC and an exterior public address system.

Santa Clara County Rural Zoning Ordinance Amendments, Santa Clara County, California. Prepared the noise and vibration section of the program EIR. The proposed project would amend how development is regulated in rural zoning districts to provide a more streamlined permit process for agricultural operations, align development in agricultural areas with existing land use policies, and replace local serving provisions with objective development standards. While the proposed project would not directly result in new development, it would promote and facilitate agriculturally related or compatible land uses that could indirectly lead to the construction of new buildings and other property improvements. Dudek evaluated potential construction and operations noise levels that might result from agriculture development facilitated by the ordinance amendments.

Capitola Outdoor Dining Ordinance, City of Capitola, California. Dudek prepared a noise assessment of the potential impacts of allowing limited outdoor dining within sidewalk or parking areas on nearby residences and motels. The noise memo supported use of a CEQA categorical exemption to address the proposed ordinance.

San Pablo Municipal Broadband Project IS/MND, San Pablo, California. The proposed San Pablo Municipal Broadband Project includes the installation of a fiber-optic ring, spur lines (or running lines), and aggregators that connect to the fiber-optic ring infrastructure. From these aggregators (either in prefabricated fiber huts or existing equipment rooms in existing commercial buildings), the fiber-optic cables would travel along existing streets (below ground) into vaults or utility cabinets and to and from the handholes/cabinets directly to customers. Prepared the IS/MND sections to address noise and vibration impacts of the project.

County of Lassen Noise Element Update, Lassen County, California. Served as the senior technical lead in the preparation of the Noise Element Update, providing feedback to the urban planning team for formulation of updated goals and policies to include in the element. Also managed or performed comprehensive community noise surveys and modeling of transportation noise sources for existing and Year 2040 build-out conditions. Principal author of the background technical report and proposed Noise Ordinance. Managed the preparation of the Mitigated Negative Declaration addressing the Noise Element Update and Noise Ordinance.

City of Pismo Beach Noise Element Update, Pismo Beach, California. Served as the senior technical lead in the preparation of the Noise Element Update, providing feedback to the urban planning team for formulation of updated goals and policies to include in the element. Also performed comprehensive community noise surveys and modeling of transportation noise sources for existing and Year 2040 build-out conditions. Principal author of the background technical report.

Los Alamos Community Plan EIR, County of Santa Barbara/Office of Long-Range Planning, Los Alamos, California. The community of Los Alamos is a small unincorporated town in the north-central portion of Santa Barbara County, at the junction of U.S. Highway 101 and State Route 135. The noise study evaluated environmental noise effects upon proposed residential land use zones and project-related noise generation from proposed mixed-use zoning.

Chicago Grade Landfill Solid Waste Transfer Station, Chicago Grade Landfill, Templeton, California. Served as environmental project manager for a solid waste transfer station proposal in northern Santa Barbara County designed for the consolidation and transfer of solid waste to the Chicago Grade Landfill in San Luis Obispo County. Responsibilities included preparation of land use development permit applications; creation of the expanded project description; and completion of individual studies in the areas of air quality, noise, visual resources, traffic, and hazardous wastes. Also involved inter-jurisdictional coordination between City of Santa Maria, County of Santa Barbara, and County of San Luis Obispo. Project was approved in 1998.

Chicago Grade Landfill Expansion, Chicago Grade Landfill, Templeton, California. Served as environmental project manager for expansion of the boundary for this permitted Class III landfill, a private facility. Facility boundary expansion was approved in 2006.

Household Hazardous Wastes Collection Center EIR, City of Santa Barbara, California. Managed and co-authored the EIR. The scope included air quality (toxic hot spots), risk of upset, traffic and circulation, and noise.

Waste Management Noise Study, Oceanside, California. Prepared noise study for proposal to convert Oceanside-based waste collection fleet to compressed natural gas (CNG). Proposal included replacement of diesel trucks with CNG trucks over a 2-year period, and installation of a compressed natural gas fueling system at the storage yard/maintenance facility. Conducted measurements of diesel and CNG trucks at another waste management facility, and calculated changes in noise levels from the project at adjoining residential property lines. Prepared noise technical report for the MND.

Chicago Grade Landfill Facility, Templeton, California. Prepared air quality and noise studies assessing air quality and noise emissions from expansion into new modules of the approved solid waste facility permit. Authored technical noise memo for the expanded operations, including off-site roadway traffic noise effects and back-up alarm effects at proximate residences.

Recreation

Carpinteria Rincon Trail Focused EIR, City of Carpinteria, California. Project Manager for the preparation of a Focused Environmental Impact Report for a multi-use pedestrian and cyclist path connecting Rincon Preserve on the west (City of Carpinteria) to Rincon Beach County Park on the east (Santa Barbara County), a distance of approximately ½ mile. Primary issues of analysis included air quality/greenhouse gasses, biological resources, cultural resources, geology, hydrology, recreation, and transportation. A detailed aerodynamics study was performed by a sub-contractor to evaluate the effects of topographic modification upon soaring opportunities that currently exist in the air space above the trail alignment.

Central Park Expansion, City of Santa Clarita, Santa Clarita, California. Prepared a noise and vibration assessment and completed the noise and vibration section of the MND for the project. The project included the addition of a soccer field, basketball court, and parking lot to the existing park, as well as relocation of one restroom facility. The noise assessment addressed construction noise, court and field use activity noise levels, and traffic noise.

St. Michael's by-the-Sea Episcopal Church Pickleball Courts, Carlsbad, California. Project manager for the assessment of noise levels at adjacent residences from pickleball court constructed at the church. Assessment included 24-hour ambient sound level measurements at residences adjacent to the church property, sound level measurement of pickleball games at the existing courts, modeling (prediction) of noise levels from court use on a community noise level basis for comparison to Carlsbad Noise Element Policies, and modeling residual sound levels at the adjacent residents from pickleball court use with installed sound barriers in the form of sound blankets attached to existing perimeter fencing.

Birnam Wood Pickleball Courts, Birnam Wood Association, Montecito, California. Project manager for the assessment of noise levels at adjacent residences from pickleball court use. Assessment included sound level measurement of tennis matches and pickleball games at existing courts, measurements of the same at temporarily relocated courts, and the prediction of sound levels from the erection of sound barriers in the form of sound blankets attached to existing perimeter fencing.

Menlo Circus Club Pickleball Courts, Atherton, California. Contributor in the noise study which assessed noise levels at adjacent residences from pickleball court use (which had been converted from tennis court use). Assessment included sound level measurement of pickleball games along three sides of the courts, and adjacent to the closest residence off-site, and the prediction of sound levels from the erection of sound barriers in the form of sound blankets attached to existing perimeter fencing between the courts and the closest off-site residence.

Montecito Country Club Sports Courts, Montecito Country Club, Montecito, California. Project manager for the assessment of noise levels at adjacent residences from a basketball court, four (4) pickleball courts, a batting cage, practice putting green, and children's sliding hill. Modeling was conducted using published sound level references for each of the courts/facilities to quantify sound levels at the closest residences from the combined use of all facilities simultaneously. The predicted sound levels were compared against measured ambient sound levels and City of Santa Barbara noise element standards. The analysis concluded noise levels would be in compliance with applicable standards and would not result in a substantial increase in ambient noise levels.

Brown Road/Point Sal Road Parking Upgrade, Santa Barbara County Parks Division, Guadalupe Coast Area of Unincorporated Santa Barbara County, California. Project manager for the preparation of an Initial Study/Mitigated Negative Declaration to address the Parks Division proposal to develop a surface parking lot containing 47 spaces along the easterly side of Point Sal Road, immediately south of the intersection with Brown Road, and to perform culvert repair and reconstruct a damaged portion of Point Sal Road approximately $\frac{3}{4}$ of a mile to the northwest from the parking lot site. The proposed improvements were intended to enhance visitor access to coastal recreation resources including Point Sal Trail and Point Sal State Beach. Key issue areas addressed in the environmental review included biological resources, cultural resources, and water resources.

Waller Park Master Plan Implementation Mitigated Negative Declaration, Santa Barbara County Community Services Department, Parks Division. Dudek is preparing an initial study (IS)/MND addressing implementation of the Master Plan for Waller Park, in the Orcutt area of the County. The proposal includes the addition of soccer fields with seating provided at the competition field, seating enhancements at the existing baseball fields, entry pavilion area, and path enhancements. Key issue areas evaluated include biological resources, cultural resources, air quality and GHG emissions, surface drainage and water quality, noise, and visual/aesthetics.

Cisco Grove Campground Improvement Project, Placer County, California. Prepared a noise technical study to address proposed improvements at Cisco Grove Campground. The 286-acre property containing the project site includes approximately 120 acres that is part of the proposed project construction and site improvements. Site improvement efforts would include a new Camp Store and Food and Beverage building, a resort pool area, sports courts, children's pool complex with water slide and play structure, food truck pavilion, arts and crafts pavilion, miniature golf course, new enclosed wastewater treatment facility (building), and a dog park.

ARCO Dos Pueblos Golf Links Environmental Quality Assurance Plan (EQAP), CPH Dos Pueblos Associates LLC, Goleta, California. Served as environmental project manager for implementation of the environmental quality assurance plan for ARCO's 27-hole seaside public golf course located on 202 acres in western Goleta (18-hole regulation course and a 9 hole, par-3 course). This property was historically used by ARCO for oil production, and there were a number of active oil wells on the property. The first phase of golf course development involved the abandonment of oil wells and storage facilities on the property. Dudek prepared and implemented an EQAP covering the abandonment phase, or the closure of oil wells and cleaning and removal of gas and oil pipelines, tanks and equipment. Provided monitoring of air quality, dust control, traffic, noise, and safety mitigations for facility abandonment.

Glen Annie Golf Course MMRP, County of Santa Barbara, Goleta, California. This project involved the development of a regulation 18-hole golf course in the Glen Annie Creek area of Goleta (Santa Barbara County). Dudek was retained by the County of Santa Barbara as an independent contractor to administer/implement the MMRP adopted with the project EIR. Responsible for the administration of mitigation monitoring for the project, including provision of actual monitoring and supervision of independent technical specialists. Major issues for which monitoring was provided included biology, geology (slope stability and erosion control), surface drainage, and air quality (dust control). The monitoring involved daily reporting, coordination with staff and local agencies, and coordination with the on-site construction crew.

Transportation

U.S. 101 High Occupancy Vehicle (HOV) Lane Project Ventura County-Santa Barbara County; Linden Avenue and Casitas Pass Road U.S. 101 Overcrossings Replacement Project; U.S. 101 South Coast HOV Project, City of Carpinteria, California. Served as City of Carpinteria's representative on the Caltrans Project Development Team (PDT), representing the City as a project partner in the planning and implementation of the portions of these three U.S. Highway 101 widening projects located partially or wholly within the City of Carpinteria. Also functioned as an extension of City staff as the case planner for local permits, including Coastal Development Permit (CDP) and Major Condition Use Permit (CUP) for each proposal. Mr. Leech assumed the role in March 2009, and immediately began the review of the Ventura-Santa Barbara segment. The City approved the CDP/CUP for this segment in February 2010. Construction of the project was completed in 2015. For the Linden Avenue and Casitas Pass interchanges project, Mr. Leech administered a joint design review committee to develop the aesthetic elements of the overcrossings and bridge, led a special planning commission hearing on transportation and circulation principles, authored a Local Coastal Plan Amendment required by the Coastal Commission to accommodate the highway improvements, and prepared the staff reports for planning commission and city council hearings. Work on this effort also started in March 2009; Carpinteria City Council provided final approval of the CDP/CUP and LCPA in November 2015. Construction of the project was completed in January 2021. For the South Coast HOV project, Mr. Leech also began participation in the PDT in 2009. Because of segments located in the City of Carpinteria, City of Santa Barbara, and County of Santa Barbara, coordination of the local permitting process was necessary. Mr. Leech provided substantial comments on the Caltrans EIR for the project as well as preparing staff reports for Carpinteria planning commission. The City approved the CDP/CUP for the project in April 2019, and the project is currently under construction.

Santa Barbara Airport Master Plan Update. Prepared assessment of noise impacts associated with implementation of the proposed extension of Taxiway H to the west end of Runway 7/25, intended to support the separation of general aviation and commercial airline ground traffic and reduce the potential for runway incursions involving aircraft traverse maneuvers across Runway 7/25.

Byron Airport Development Program, County of Contra Costa, California. Prepared the noise and vibration assessment for the proposed development of light industrial, warehousing and logistics, commercial, and low-intensity office uses on the airport property. Noise sources included new stationary equipment at the airport property for the expanded land uses, and traffic noise from the Existing and Future Year (2040) conditions.

California Boulevard Round-About, City of Napa, California. Prepared the noise assessment for the reconfiguration of California Boulevard at 1st Street to include a round-about (traffic circle). Analysis included traffic noise utilizing the FHWA TNM 2.5 traffic noise prediction model, and construction noise assessment utilizing the FHWA RCNM construction noise model.

High Speed Rail Project, Fresno to Bakersfield Segment, California. Prepared re-evaluation of construction and operations noise impacts for proposed project revisions generally entailing the substitution of selected track segments on embankments as opposed to elevated platforms, and minor changes to localized roadway segments. Also prepared ambient noise survey for a rural residential neighborhood east of Hanford, California.

Combie Road Widening, Nevada County, California. Prepared the noise assessment for the addition of two travel lanes to the Combie Road facility between State Route 49 and Hacienda Drive, in Nevada County just north of the City of Auburn, California. Analysis included traffic noise utilizing the FHWA TNM 2.5 traffic noise prediction model, and construction noise assessment utilizing the FHWA RCNM construction noise model.

Pedestrian Crossing EIR, City of Palo Alto, California. – Under contract to the City of Palo Alto, Dudek prepared an EIR for the construction and operation of a pedestrian/cyclist overcrossing of US Highway 101. Completed the noise analysis which included an ambient noise survey for areas adjacent to each end of the overcrossing location, and a construction noise analysis. The project is currently under construction.

Las Vegas – San Pedro Creeks Capacity Improvements Project, Santa Barbara County Flood Control, Goleta, California. Principal in charge for the preparation of CEQA/National Environmental Policy Act (NEPA) environmental review documentation for this joint partnership between California Department of Transportation (Caltrans) District 5, City of Santa Barbara, City of Goleta, and the Santa Barbara County Flood Control District, to develop flood control improvements for these two creeks within the U.S. 101 corridor, Union Pacific Railroad rail corridor, and local streets.

State Route 246/Alamo Pintado Road Intersection Project Study Report (PSR), Garcia and Associates (GANDA), Solvang, California. Served as project manager for environmental documentation as a subconsultant to GANDA to provide an Initial Site Assessment (ISA) and Preliminary Environmental Evaluation Report (PEER) for inclusion in a PSR on the proposed widening of the Alamo Pintado Bridge to accommodate reconfiguration of the State Route 246/Alamo Pintado Road intersection.

Metropolitan Transit District's (MTD) Relocation/Consolidation, Santa Barbara, California. CEQA coordinator for MTD's relocation/consolidation project in Santa Barbara. Was responsible for creating their guidelines for implementing CEQA, CEQA users' guide, and all CEQA and NEPA documents for their proposed projects.

Los Carneros Road/U.S. Highway 101 Overcrossing PSR, Goleta, California. Served as project manager for environmental documentation as a subconsultant to Martin & Kane to provide an ISA and PEER for inclusion in a PSR on the proposed widening of a portion of the overcrossing structure of Los Carneros Road at U.S. Highway 101 in Goleta. The portion of the existing bridge structure above the Southern Pacific Railroad alignment necessitated widening, but the bridge structure was not proposed for replacement as part of the project (a new buttress on the east to adjoin the existing buttress was proposed).

Circulation Element Update EIR, City of Solvang, California. Managed and co-authored the EIR. The scope was limited to transportation and air quality issues. The EIR provided a full assessment of two alternative bypass routes to Solvang to relieve congestion on Highway 246 through the city. The air quality assessment included a full CALINE evaluation to address the potential for carbon monoxide “hot spot” formation.

Water/Wastewater

Mountain Avenue West Groundwater Recharge Basin, Eastern Municipal Water District, Focused Environmental Noise Assessment, San Jacinto, California. The proposed project construction involved earthwork (grading and excavation) to create three separate basins for groundwater recharge operations, and the installation of pipework, valves, and water inlets to release water into the three basins. The noise-generating mechanical equipment of the Project included the water inlets (which create sound when released water splashes on the surface below), and flow control valves (which create sound when water is flowing through the valve). The noise study evaluated environmental noise effects from construction and operation of the recharge basin upon existing adjacent noise-sensitive uses; existing single-family residential neighborhoods exist in the immediate vicinity of the project, including to the south across Esplanade Road, to the west across Villines Avenue, and to the north immediately adjacent to the Project property boundary.

El Estero Wastewater Treatment Plant Level 3 Upgrades, Focused Environmental Noise Assessment, City of Santa Barbara, California. The proposed project included the addition of electrically driven turbine pumps and filter systems. The pumps were proposed to be installed outdoors. Dudek prepared the noise assessment for the City of Santa Barbara Public Works Department. The noise study evaluated environmental noise effects from construction and operation of the treatment plant upon existing adjacent noise-sensitive uses (i.e., Santa Barbara Rescue Mission).

Ocean Avenue Water Main Replacement, Montecito Water District, Montecito, California. Prepared the noise and vibration section of the Initial Study/Mitigated Negative Declaration to address the proposed replacement of a 100-year old 4-inch cast iron water main, service laterals, one hydrant, and one air vacuum valve on Ocean View Avenue in Montecito, California operated by the Montecito Water District. This water main replacement was required due to the restriction in flow within the water main and lack of pressure and flow rate for firefighting operations for the adjacent 20 properties. The water main was replaced with 630 linear feet of new 6-inch ductile iron pipe in a new trench along Ocean View Avenue. Key issues addressed in the environmental review included air quality, cultural resources, geology, public services, transportation, and utilities.

West Lake Tahoe Regional Water Treatment Plant, Focused Environmental Noise Assessment, Tahoma Village (Lake Tahoe), Placer County, California. The proposed project included upgrading of a water intake facility at the Lake Tahoe shoreline, water pipeline, and development of a new water treatment facility in the unincorporated Tahoma community of Placer County. Dudek prepared the noise assessment for Tahoe City Public Utility District. The noise study evaluated environmental noise effects from construction and operation of the treatment plant upon existing adjacent residential uses.

Fish Canyon Creek Gauging Station, California Department of Water Resources, Castaic, California. Prepared a noise and vibration assessment for the construction of a replacement gauging station in Fish Canyon Creek, in an unincorporated area of Los Angeles County, near Castaic. The noise and vibration assessment included construction equipment and activity at the gauge station, as well as heavy haul truck activities on area roadways.

Wastewater Master Plan EIR, City of Santa Maria, California. Managed and co-authored the EIR. This program EIR assessed the assorted activities, physical wastewater system improvements, and ordinances designed to accommodate wastewater treatment demands in the City of Santa Maria through the year 2010. Key issues included public health and safety, air quality (toxic hot spots), water quality, land use, hazardous materials, and geology.

Water Treatment Plant EIR, Santa Ynez River Water Conservation District (SYRWCD), Improvement District No. 1, Santa Ynez, California. Managed the CEQA environmental review process for the SYRWCD on this project. Duties included preparation of an IS, public notices, and staff reports to the board, as well as completion of an EIR. Managed and co-authored the EIR for this project, which included alternative local pipeline alignments and a water treatment plant for the District's allocation of water from Lake Cachuma. New surface water treatment standards from the U.S. Environmental Protection Agency resulted in the proposal by the SYRWCD to build a treatment plant for Lake Cachuma waters. Key issues in the EIR included water quality, geology, archaeology, land use, aesthetics, public health and safety, and agriculture (the effect of increased water rates upon agricultural users).

Water Reclamation Plant and Reclaimed Water Distribution EIR, Goleta Sanitary District, Goleta, California. Managed and co-authored the EIR. The Goleta Sanitary District and Goleta Water District proposed a joint project for the reclamation of wastewater for landscape irrigation. The EIR covered development of the treatment plant itself, and distribution of the reclaimed water to three initial user sites including UC Santa Barbara and two golf courses. Environmental issues at the plant included geology (a fault is present on the property), archaeology, human health and safety, air quality, and biology (wetlands are located adjacent to the site). Dudek staff prepared the mitigation monitoring plan for all phases of the plant and pipeline construction process, and also completed all necessary monitoring and reporting tasks for the projects. The distribution pipeline is located within lands of the City of Santa Barbara, County of Santa Barbara, and State of California. Permitting involved each of these agencies, and the monitoring effort involved extensive coordination with these agencies and others during construction.

APPENDIX C

Response to Letter B5, Exhibit B (Lighting)



Memorandum

To: Dan Ardrootni
Project Manager

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Project	Cal Softball Renovation
Project No.	220555.000
Date	2 April 2024

CC: Shraddha Navalli Patil

Sent Email
Via:
31
Pages:

Re: Response to comment letters

The following responses have been prepared by Dr. Darcie Chinnis, Associate Principal at HLB Lighting Design which is the largest independent lighting design firm in the world. Dr. Chinnis holds three degrees specifically focused on lighting engineering and has been practicing lighting design and analysis for nearly 20 years. She is an active member of many technical lighting organizations, including the Illuminating Engineering Society and the International Dark-Sky Association, and a sought-after subject matter expert in exterior lighting for various codes and standards development including California’s Title 24 and Denver’s Green Code.

Comment Letter B5

The following responses directly address comments in the memo provided by Mr. Papineau, dated 29 January 2024. Comments by Mr. Papineau were included as Exhibit B to Letter B5, which is included in its entirety in Appendix A of the Cal Softball Renovation Project Final EIR). Mr. Papineau does not have any degrees related to or focused on lighting engineering and is not a member of any technical lighting organizations. As such, nothing in his resume supports that he is a subject matter expert in exterior lighting. Each comment letter in Final EIR Appendix A has been bracketed to number individual comments within each letter. This memorandum includes verbatim comments from Exhibit B of Letter B5, followed by responses to each comment. If a comment includes tables and/or figures, those are referenced in the comment and can be viewed in the bracketed letter B5 included in Final EIR Appendix A.

B5-56 Comment. UC Berkeley's existing softball facility is located in the Berkeley Hills on Centennial Drive, between Stadium Rim Way and Grizzly Peak Boulevard, east of Memorial Stadium, at an approximate elevation of 490 feet above mean sea level (see Figure 1). UC Berkeley's proposed Softball Field Renovation Project would include 66 LED light fixtures ("luminaires" mounted at 70-90 feet above ground level on six (6) 70-foot tall light poles. The mounting poles would include two for home plate, two for first/third base lines, and two for the outfield. Additionally there would be a 35 foot x 9 foot scoreboard, parking area, bleachers, and TV/press box. The existing bleacher seating would be expanded and outfield walls expanded for a larger field and larger overall footprint.

The area east, northeast, south and southeast of the softball field contains open space preserves and limited developed land uses. With the exceptions of UC Berkeley sports lighting (i.e., Memorial stadium, Witter Rugby Field, and Cal Softball Facility), the adjoining neighborhood is located in an area having minimal artificial light at the eastern urban fringe (see Figure 2). Several houses are located southwest, south, or southeast of the softball field, in the elevation zone 400-580 feet above msl. In the immediate neighborhood of the softball field, houses are located within 350-1,130 feet (110-350 meters) of the centerfield wall (see Figure 3). Additional houses are located at or above the elevation of the proposed luminaires, many but not all being shielded by intervening terrain. [See Letter B5 in Appendix A of the Cal Softball Renovation Project Final EIR for Figures 1, 2 and 3 referenced in the comment.]

Response. The commenter is correct that there is existing lighting from Memorial stadium, Witter Rugby Field and the existing Cal Softball facility. As detailed in Draft EIR Section 4.2, Aesthetics, 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 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 (foot candles) and maximum intensity (candela; maximum intensity is an indicator of glare potential) were taken from representative receptor sites in the surrounding area or on the project site (see Draft EIR Figure 4.2-3 and Appendix D). 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 Draft EIR Figure 4.2-4 and Appendix D.

The receptor sites evaluated do not include locations above the elevation of the proposed luminaires (lights); due to the shielded, downward directed nature of the luminaires, all receptor site locations at or above the height of the proposed luminaires inherently cannot have a direct view into the light aperture. As such, there would be a less than significant lighting impact at receptor sites that are located at elevations at or above the height of the proposed luminaires. The receptor sites analyzed in the Draft EIR have the potential for a direct view into the light aperture and were therefore appropriately selected and analyzed in the EIR.

The evaluation of vertical light spill assessed the representative receptor sites in the surrounding area as noted above and evaluated ambient, plus proposed softball with “no obstruction” and “with obstruction” (see Section 4.2, Aesthetics, Table 4.3-4, and Appendix D). “No Obstruction” refers to modeled light levels that do not account for the dense foliage between the receptor and the project site. “With Obstruction” refers to modeled light levels that do account for the dense foliage between the receptor and the project site. The results of the analysis in the Draft EIR and Appendix D indicate that vertical light spill would not exceed the identified threshold of significance for both “No Obstruction” and “With Obstruction” conditions. The threshold of significance selected was for “Low District Brightness / Rural Residential” and approximates the use of the area surrounding the project site (International Commission on Illumination 2017). 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. As explained above, the vertical light spill results at other homes identified by the commenter would be less than the results presented in the lighting analysis based on the narrow, downward-focused condition of the proposed lighting system.

B5-57 Comment. For clarity of exposition, to inform the public fully, the Cal Softball Field Renovation Project Draft EIR should explain that NCAA has best practices for both televised and untelevised sports play. The best practices are not standards per se. One set of best practices is intended for playability and player safety. The additional set of best practices is intended additionally to accommodate the quality of televised sport broadcasting. The Draft EIR cites (pp. 3-16, 3-23, 3-25, 4.2-2) only NCAA lighting best practices for televised night games. For untelevised play, recommended light levels are lower, being 70 footcandles infield / 50 footcandles outfield. For regional or national TV broadcast, the NCAA's best practices ratchet up—to 100 footcandles infield / 70 footcandles outfield.¹ This increase in lighting has nothing to do with playability, it's about broadcast cameras. Untelevised games and nighttime practices can be accommodated with lower light levels.

Footnote:

¹ One footcandle is about the same as 10.76 lux.

Response. It is acknowledged that NCAA best lighting practices are not standards per se. However, the Approved American National Standard (ANSI) Recommended Practice for

Lighting Sports and Recreational Areas¹ provides that illuminance criteria are similar to those for baseball (page 53) and for a Class II facility such as this one, are 100 footcandles infield / 75 foot candles outfield (Refer to excerpts shown in Annex 2 to this memo). The ANSI standard does not account for broadcast requirements as stated in Section 4.4 of the IES/ANSI standard, which states:

"... Even though camera capabilities have increased dramatically, the lighting requirements for television broadcasting still exceed the lighting sufficient for play.

This Recommended Practice is intended as a reference for designing recreational sports facilities and does not focus on the details associated with designing sports lighting systems for professional broadcasting. It is recommended that designers who are involved with the design of lighting systems for use in professional sports contact the relevant broadcast company to obtain specific broadcast lighting requirements."

Moreover, one of UC Berkeley's primary project objectives is to 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, to support UC Berkeley's ongoing Title IX commitment (see Draft EIR Chapter 3, Project Description). The NCAA best lighting practices for Softball, for Regional and National Broadcasts (NCAA 2011) meet these objectives.

B5-58 Comment. The Cal Softball Field Renovation Project Draft EIR acknowledges (p. 4.2-7) light pollution, which includes various forms of unwanted light in the night sky, such as glare, light trespass, sky glow from over-lighting. Excerpt:

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. (p. 4.2-7)

¹ Illuminating Engineering Society. ANSI/IES RP-6-22, Recommended Practice: Lighting Sports and Recreational Areas. New York: IES; 2022.

While acknowledging this, and while evaluating the effect of specified luminaires on spill light (or “light trespass”) and glare, the Draft EIR fails to evaluate the incremental contribution and cumulative effect of the proposed project on sky glow.

Response. The CEQA Guidelines Appendix G checklist question asks whether a proposed project would “create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?” The analysis provided in Draft EIR Section 4.2, Aesthetics and Appendix D provides for a substantive, quantitative analysis of light and glare. However, see Responses to Comments B5-59 and B5-60 for additional information about skyglow.

B5-59 Comment. For clarity of exposition, to inform the public fully of the potential individual and cumulative effects, the Draft EIR should evaluate and add perspective regarding sky glow. At a minimum, the cumulative sky glow impact of Cal Softball Field Renovation Project with Memorial Stadium and Witter Rugby Field should be evaluated.

Response. See the Response to Comment B5-60 below to address individual project effects on Skyglow. Skyglow, though, cannot be quantified in this cumulative fashion. It is inherently not an additive quantity based on local changes. True skyglow (not localized horizon brightening) at this location is more attributable to sources associated with nearby high-density urban areas than to local sources. Importantly at this site, events at Memorial Stadium do not overlap with events at the softball field.

B5-60 Comment. Independent calculation of Upward Flux Ratio, a metric used for evaluating incremental effect upon sky glow, indicates that UFR could be expected in the range of 2.3 and up to 3. In comparison, the threshold of significant effect in Environmental Light Zone E2 is 2. This calculation assumes addition of only the 66 luminaires proposed for the Cal Softball Field Renovation Project, without the 35 foot x 9 foot scoreboard and without off-field pedestrian or parking lot lighting. This result is unsurprising as all sports facilities with lighting generate upward light from reflection--even those having no upward-directed luminaires. The amount of reflected light depends on the amount of source light (lumens) and the reflective quality of the surfaces.

Response. The commenter states that “[Upward Flux Ratio] could be expected in the range of 2.3 and up to 3” and provides a supplemental calculation in Attachment C to his memo stating assumed inputs. The amount of source light and the reflective quality of the field is accounted for in the calculation. The following table provides a comparison using the actual project-specific inputs for this calculation, as well as a comparison to existing conditions:

Commenter's Calculation of Upward Flux Ratio with Assumed Inputs		Expert [HLB Lighting] Calculation of Upward Flux Ratio with Confirmed Project-Specific Inputs			Expert [HLB Lighting] Calculation of EXISTING Upward Flux Ratio with Inputs Derived from Field Measurements and Model		
Input	Value	Input	Value	Source	Input	Value	Source
E/E_m	1.05	E/E_m	1.00	Per manufacturer's calculations	E/E_m	1.00	No anticipated depreciation
$R_{ULO,a}$	0	$R_{ULO,a}$	9%	Per manufacturer's calculations	$R_{ULO,a}$	11%	Per AGI model used to simulate existing conditions
$R_{DLO,a}$	1	$R_{DLO,a}$	91%	Per manufacturer's calculations	$R_{DLO,a}$	89%	Per AGI model used to simulate existing conditions
ρ_1	0.25	ρ_1	0.25	Conservative - typical skyglow calculations assume 15% ground reflectance	ρ_1	0.25	Conservative - typical skyglow calculations assume 15% ground reflectance
ρ_2	0.32	ρ_2	0.25		ρ_2	0.25	15% ground reflectance
u	0.52	u	0.823	Per manufacturer's calculations	u	0.521	Per AGI model used to simulate existing conditions
RESULT		RESULT			RESULT		
UFR = 2.3		UFR = 1.6			UFR = 2.6		

As shown, the proposed project complies with the CIE threshold of 2.0 UFR in Environmental Zone E2.

Additionally, the proposed lighting system not only provides shielded downward-directed lighting, which is known to have the least impact on both skyglow and glare but has been specifically engineered by the manufacturer to avoid any direct light emissions between 85° and 100° above nadir which is known to be the zone most significant contributor to both glare and skyglow. Refer to the table below copied from Page 50 of the commenter’s letter.

Table 1: The effect on the ability to view the night sky at various angles

	Angle of light emitted (degrees)	Sky glow effect	Glare effect
	100 - 180	Local	Little
	95 - 100	Significant	Some
	90 - 95	High	High
	85 - 90	Significant	High
	0 - 85	Minimum	Some

B5-61 Comment. Sky glow over a stadium or lighted sports field appears as a milky white “fog” (see Figure 4). It can be lessened or minimized but practically is unavoidable. The degree of visible sky glow depends, in part, upon viewing location and contrast in the field of view of the observer. Sky glow adversely affects not only star gazing but also nighttime viewing. Silhouettes of ridgelines or tree lines, which normally appear black, become grayed from sky glow over a stadium. Unlike the effect of glare, the effect of sky glow does not require a direct line-of-sight to a luminaire. Unlike spill light cast directly from luminaires and crossing the boundary of a lighted sports field, most sky glow in modern sports lighting installations is an indirect result of

reflected light. [See Letter B5 in Appendix A of the Cal Softball Renovation Project Final EIR for Figure 4 referenced in the comment.]

Response. The commenter states that “Sky glow over a stadium or lighting sports field appears as a milky white “fog”, referencing Figure 4 in their letter. Figure 4 has no scientific basis cited and appears to be a graphic derived from opinion only and based on lighting from Memorial Stadium. The current lighting at Memorial Stadium is mounted lower above the grade than the project’s proposed replacement lights due to the sunken nature of the playing field. There are significantly more individual luminaires that have a higher light output as the light level standards for football per NCAA standards for a Division 1 stadium are 100 footcandles average across a much larger area than the softball field. Therefore, even if Figure 4 was based on anything other than unsupported opinion, it is not representative of lighting impacts from the proposed project.

The commenter acknowledges that the localized near-horizon brightening due to the scattering of light by moisture in the air is “practically.... unavoidable.” Additionally, the near-horizon brightening will also increase the impact of the nearby metropolitan areas on the site, decreasing the relative effect on this horizon brightening due to local sources² The lights from Berkeley are the primary source of horizon brightening in the vicinity of the proposed project during most conditions. Every light, no matter how bright, will create a near-horizon brightening effect during the temporary marine layer weather events. The effect created by the proposed lighting will be less intense than the effect created by the existing lighting due to the downward, shielded orientation of the proposed lighting fixtures.

B5-62 Comment. To minimize the expected impact of sky glow mitigation measures, performance and design criteria, or restrictions on proposed lighting are warranted. The absence of these in the Draft EIR is at odds with acknowledgment given in Cal Softball Field Renovation Project Draft EIR of the cumulative lighting impacts from other athletic facilities in the project area such as the Memorial Stadium and Witter Rugby Field. In general, this defies the fact that nighttime use of lighted sport fields generally is acknowledged by both CEQA practitioners and lighting practitioners as potentially a significant source of spill light, glare, and also sky glow.

² Jechow, A., Kolláth, Z., Ribas, S.J. *et al.* Imaging and mapping the impact of clouds on skyglow with all-sky photometry. *Sci Rep* **7**, 6741 (2017). <https://doi.org/10.1038/s41598-017-06998-z>

Response. As described in Response to Comment B5-60, the impact of the proposed project on skyglow is less than significant. Therefore, sky glow mitigation measures are not warranted. Draft EIR Section 4.2, Aesthetics and Appendix D analyze the impacts of the proposed project related to light and glare under both proposed project and cumulative conditions. Modeling of vertical light spill and maximum intensity (an indicator of glare potential) was conducted, and the results presented in Draft EIR Appendix D and Section 4.2, Aesthetics. Both the project and cumulative analyses demonstrate that the impact of the project related to vertical light spill would be less than significant (see Impact AES-3 and Impact AES-4, as well as Appendix D). The cumulative vertical light spill analysis of the proposed project includes the adjacent Witter Field, but does not include Memorial Stadium lighting, as events scheduled at Memorial Stadium do not overlap with games scheduled at the Cal Softball Field. The project analyses demonstrate that the impact of the project related to glare would be less than significant (see Impact AES-3).

While lighted sports fields may have the potential to result in potentially significant source of spill light and glare, as noted by the commenter, modeling conducted for the proposed project in Draft EIR Appendix D, using appropriate quantitative thresholds, indicates that the impacts of vertical light spill and glare would be less than significant. 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 Draft EIR Appendix D). Lastly, the existing conditions for the proposed project include the use of the existing Cal Softball Field into the evenings for team practices and intramural use, which involves the use of existing field lights. Therefore, the proposed project would not result in new sports lighting on a site and area that is devoid of existing sports lighting.

B5-63 Comment. Analysis presented in the Draft EIR and Appendix D appears rigorous. However, looking carefully, we find scant details—not even the name of the photometric mode is mentioned more than parenthetically. The model, AGI32, is mentioned by name once, parenthetically, in Appendix D. How was the model applied (e.g., 3-D or flat, with or without terrain, with or without structures)? Based upon the photometric sheets presented at the end of Appendix D it appears that prediction plans were used at varying height above the plane of the playing field. Upward light output or reflected light were not evaluated.

Response. AGI32 is the software used in the technical analysis to provide a model of the existing conditions to provide approximation of the shielding impact of existing conditions. Additional information regarding the existing conditions model has been included as an annex to this memo (see Annex 3). The output shown in Section 14 of the lighting technical report in Draft EIR Appendix D is provided by the Manufacturer, as stated, and all input information including luminaire information and geometric conditions are provided.

The AGI model constructed for the existing conditions was based on satellite imagery to ensure modeled geometry matches current conditions, including relative heights of the receptor sites relative to field level. The existing lighting was modeled using photometry of light fixtures that matching distribution (beam spread) of the existing fixtures. The model was then validated using a series of calibration points (namely, the horizontal illuminance measured at the four

bases, midway along all four baselines, the pitcher's mound, and six locations in the outfield) that were field-measured and then validated in the model.

The Manufacturer's model for the proposed lighting conditions was provided by Musco's engineering team and is used as the basis for performance specification and warranty for their lighting system.

B5-64 Comment. The AGi32 model is highly capable; however, it appears to have been applied for a preliminary evaluation in a relatively simplistic flat-plane mode, which requires far less data input. The AGi32 model can simulate lighting effects across multiple calculation planes in addition to the playing field plane. AGi32 receiver calculation points can be aimed in any direction. Receiver elevations can be entered in cases of complex versus flat-plane topography. While the AGi32 model is highly capable, neither the Draft EIR nor Appendix D explains in lay or technical terms how the model actually was applied.

Response. See Response to Comment B5-63 above. The analysis was not based on a flat-plane mode. It was applied to match the existing topography and represents an accurate estimate of lighting impacts.

B5-65 Comment. The model output, numbers such as lux or footcandles for spill light and candela for glare, do not address sky glow and do not communicate degree of impact, individual or cumulative, on nighttime views. Scenic vistas and nighttime views are available from the trails and hillside vantages. The Draft EIR (p. 4.2-2) acknowledges these trails and outstanding scenic vistas:

The local elevation in the Hill Campus East provides for panoramic westward views towards the San Francisco Bay and City of San Francisco. 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.

Response. As described in Response to Comment B5-60, the impact of the proposed project on skyglow is less than significant. The Draft EIR Section 4.2, Aesthetics (Impact AES-1), evaluates the impact of the proposed project related to scenic vistas, including the effects associated with light and glare. The analysis indicates that, 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 Draft EIR Figure 4.2-8).

In addition, the proposed increase in total number of onsite light 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. The impact of the proposed project related to scenic vistas was determined to be less than significant (see Impact AES-1).

Additionally, as described in the Response to Comment B5-56 above, the view from locations at or above the height of the luminaires would not include views of the lights themselves, but instead views of luminaire housing. Therefore there would be a less than significant amount of light or glare visible from the trails identified by the commenter. Views of the field were also observed to be almost entirely obstructed from publicly-accessible locations to the south and southwest of the project.

B5-66 Comment. Trails mentioned in the Draft EIR (p. 4.2-2, 4.2-7 & -8, 4.2-30,) include Upper Jordan Trail and an unnamed southwest-northeast trail running into the Hill Campus East from the eastern end of Canyon Road. In addition to trails mentioned in the Draft EIR (p. 4.2-13), there are Panoramic Ridge East-West Trail, Gwinn Canyon Trail, and Bay Ridge Trail (also known as the Skyline National Trail). These offer available scenic vistas from a variety of public viewing locations. The Panoramic Ridge East-West Trail in the Claremont Canyon Regional Preserve and Clark Kerr Fire Trail also in the Claremont Canyon Regional Preserve offer some of the best scenic views in the San Francisco Bay region.

Response. The trails mentioned in the Draft EIR Section 4.2, Aesthetics, including Upper Jordan Trail and an unnamed southwest-northeast trail running into the Hill Campus East from the eastern end of Canyon Road are identified in the analysis, as they are the closest trails to the project site. 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 are also identified (see Impact AES-1 and AES-2). The trails and other locations noted by the commenter, including Panoramic Ridge East-West Trail, Gwinn Canyon Trail, and Bay Ridge Trail (also known as the Skyline National Trail) and the Claremont Canyon Regional Preserve are located further away from the project site to the southeast and most of these areas are on the other side of Panoramic Ridge and/or would not have direct views of the project site. As such, these locations are outside of the assessment area for aesthetic impacts.

B5-67 Comment. Of spill light, glare, and sky glow, the Cal Softball Field Renovation Project Draft EIR addresses two of the three—spill light and glare. However, sky glow is more relevant to nighttime viewing. The Draft EIR appropriately recognizes (pp. 4.2-16, 4.2-33) the low ambient light setting on the edge of urban Berkeley by characterizing the light setting as E2. For the E2 zone, and for other defined ambient light zones, various lighting organizations such as CIE and ILP have recommended guidance on maximum acceptable and practically achievable levels of spill light, glare, and sky glow. The three metrics are vertical illuminance (in footcandles or lux) for spill light, luminous intensity (in candela) for glare, and upward waste light ratio or upward flux ratio (unitless ratios) for sky glow. Sky glow is acknowledged in the Draft EIR (p. 4.2-7), but it is not evaluated.

Unlike spill light and glare, effects of which generally are localized and specific to neighbors of a lighting installation, sky glow is an individual and cumulative effect and impairs local viewing of

scenery and the night sky by a broader community. Therefore, it is especially important not only to acknowledge the sky glow effect, both individual and cumulative with Memorial Stadium and Witter Rugby Field, but also to evaluate the degree of impact on nighttime views. AGi32 model results presented in the Draft EIR and Appendix D fail to communicate any of these impacts.

Response. As described in Response to Comment B5-60, the impact of the proposed project on skyglow is less than significant.

B5-68 Comment. Corrections for shielding by vegetation are included in the analysis (see Table 4.2-6, p. 4.2-35). These corrections are made ad hoc, outside the photometric modeling, to account for obstructions between light source and receiver. These obstructions are neither buildings nor terrain but “dense foliage” between receivers and the project site. We have no assurance from the Draft EIR text or Appendix D that the same corrections applied for receivers A, B, C, and D should be applied to other receivers which were not evaluated and which could receive spill light from the Cal Softball Field. These receivers are illustrated here in Figures 1 and 3 (yellow-shaded area). [See Letter B5 in Appendix A of the Cal Softball Renovation Project Final EIR for Figures 1 and 3 referenced in the comment.]

Response. The commenter takes issue with the selected receiver sites and states “we have no assurance.... that the same correction factors applied for receivers... should be applied to other receivers which were not evaluated and which could receive spill light....”. Receptor Site A, which is located immediately adjacent to the site is reported to be below significance without any shielding impact of vegetation and due to the downward orientation of the luminaires. As is explicitly clear through the Manufacturer’s photometric analysis, independent of vegetation, light spill will only continue to fall off as one moves further from the project site allowing the reasonable conclusion that light spill at other receptor locations would also be less than significant. Additionally, excluding the impact of any obstruction due to vegetation, all receptor sites have been demonstrated to less than the appropriate significance thresholds.

B5-69 Comment. An available metric for quantifying a project’s contribution to sky glow is Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation’s luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field. A UFR of 2, or lower, results for facilities having no upward directed light and minimal reflected light except that reflected up from the playing field. Such facilities minimize their cumulative contributions to sky glow.

Response. Skyglow is officially defined by the International Dark-Sky Associationⁱ, and generally accepted in practice, as “The brightening of the night sky that results from the scattering and reflection of light from the constituents of the atmosphere (gaseous molecules and aerosols), in the direction of the observer. It has two separate components: natural sky glow and artificial sky

glow.”³ Local temporary brightening effects due to transient environmental conditions such as pockets of high humidity that lead to temporary brightening conditions due to increased scattering are not skyglow per the industry-standard definition. See Response to Comment B5-60 above for a full calculation of UFR, the metric relevant to skyglow, demonstrating the proposed project does not exceed the threshold.

B5-70 Comment. (pp. 3-16, 3-23, 3-25, 4.2-2) The Cal Softball Field Renovation Project Draft EIR cites NCAA lighting best practice for televised night games. For untelevised play, the NCAA’s recommended light levels are lower, being 70 footcandles infield / 50 footcandles outfield. However, for regional or national TV broadcast, the levels ratchet up—to 100 footcandles infield / 70 footcandles outfield. This increase in lighting has the sole purpose broadcast quality and has nothing to do with safety or playability. Untelevised games and nighttime practices could be accommodated with lower light levels. Note: One footcandle is about the same as 10.76 lux. NCAA does not call these “standards.” NCAA titles them as Recommended Best Lighting Practices and advises similarly for non-televised and televised intercollegiate play as follows:

TELEVISED: Following these recommended best practices will help ensure quality of light needed for the safety of participants, enjoyment of spectators, and quality regional and national television broadcasts, as required. (see Attachment B)

NON-TELEVISED: Following these recommended best practices will help ensure quality of light needed for the safety of participants and the enjoyment of spectators, as required. (see Attachment B)

Response. See Response to Comment B5-57 for a response to this comment.

B5-71 Comment. (p. 4.2-1) The field itself including the dirt infield, turf outfield, warning track, home plate and foul areas is approximately 40,000 square feet (0.9 acre). The facility with bleachers, striped parking, landscape areas is larger.

Response. The model included the surrounding amenities (e.g., bleachers). Parking and landscape lighting were not included. The parking lot will be decreased in size with the proposed project and any lighting in the parking lot and landscape areas will be required to comply with CalGreen (Title 24 Part 11), which limits the permissible amount of uplight to make its impact negligible on the current findings. will have a negligible impact on the vertical spill

³ <https://darksky.org/resources/glossary/>

light and glare in the Draft EIR, as well as the skyglow calculations included in the response to B5-60 above and, as such, would not change the impact conclusions presented in the Draft EIR or this Final EIR. e.

B5-72 Comment. (p. 4.2-1) (p. 4.2-7) The Cal Softball Field Renovation Project Draft EIR acknowledges light pollution, which includes various forms of unwanted light in the night sky, such as glare, light trespass, sky glow from over-lighting. The Draft EIR further acknowledges that views of the night sky are an important part of the natural environment and that excessive light and glare can be visually disruptive to humans and nocturnal animal species.

Response. The general statements referenced in the comment from the Draft EIR are intended to provide context for the analysis and are not impact conclusions. Draft EIR Section 4.2, Aesthetics and Appendix D provide a quantitative analysis of vertical light spill and maximum intensity (glare). The results of that analysis are summarized in Responses to Comments B5-56 and B5-62. As described in Response to Comment B5-60, the impact of the proposed project on skyglow is less than significant. Lastly, Draft EIR Section 4.3, Biological Resources, provides analysis of the potential for night lighting to impact wildlife. All impacts were determined to be less than significant (see Impact BIO-1, Impact BIO-4 and Impact BIO-5).

B5-73 Comment. (pp. 1-7 and 6-3) The Cal Softball Field Renovation Project Draft EIR acknowledges as areas of concern and controversy both lighting impacts on nearby residents during softball games and practices and cumulative lighting impacts from other athletic facilities in the neighborhood of the project. Nighttime use of lighted sport fields generally is acknowledged by lighting practitioners as potentially a significant source of spill light, glare, and sky glow. Even so, potential impacts including spill light and glare are labeled in this Draft EIR as less-than-significant effects. But sky glow is not even evaluated.

Response. Draft EIR Section 4.2, Aesthetics and Appendix D provide a quantitative analysis of vertical light spill and maximum intensity (glare). As stated therein, the "Known Areas of Controversy" identified in Section 1.6 of the Draft EIR are concerns that are likely to generate the greatest interest based on the input received during the scoping process, rather than a statement or analysis of the actual impacts of the project. The results of that analysis are summarized in Responses to Comments B5-56 and B5-62. While lighted sports fields may have the potential to result in potentially significant source of spill light and glare, as noted by the commenter, modeling conducted for the proposed project in Draft EIR Appendix D, using appropriate quantitative thresholds, indicates that the impacts of vertical light spill and glare would be less than significant. Additionally, as described in Response to Comment B5-60, the impact of the proposed project on skyglow is less than significant.

B5-74 Comment. (pp. 1-7, 4.2-32, -33, -34 and -35, and 6-3) Spill light and glare impacts appear to be evaluated in the Draft EIR and reported in Tables 4.2-4 and 4.2-5 for an optimized system having specific 90-foot tall pole heights, specific number and kind of luminaires, and specific luminaire aiming. The as-built system could differ, resulting in adverse spill light and glare effects. Therefore, performance and design criteria should be required or the installation certified (e.g., Dark Sky Certification.)

Response. Installation certification for this specific application comes from manufacturer warranty-based validation that the installed system performs as designed. Given that, the proposed project sports lighting would be built as designed and performance and design criteria are warranted to provide for assurance that the installed system would perform as designed. Dark Sky Certification is not a requirement of the proposed project.

- B5-75** Comment. (Appendix D) The technical appendix is relied upon in the Draft EIR for conclusions about the degree of lighting effects. Neither the Draft EIR nor Appendix D convey in lay terms how the photometric model was applied (e.g., 3-D or flat, with or without terrain, with or without structures). The AGi32 model is highly capable but it can also be applied in simplistic modes with less data input for preliminary evaluations. The AGi32 model can simulate lighting effects across multiple calculation planes in addition to the playing field plane. AGi32 receiver calculation points can be aimed in any direction. Receiver elevations can be entered in cases of complex versus flat-plane topography. While the AGi32 model is highly capable, the Draft EIR and Appendix D do not explain how the model used actually was applied.

Response. See Annex 3 to this memo for additional information regarding the model of existing conditions. See Response to Comment B5-63 above for additional information.

- B5-76** Comment. (p. 4.2-33) Shielding by vegetation is included in the analysis. These corrections are made ad hoc, outside the photometric modeling, to account for obstructions between light source and receiver. Unlike terrain or buildings, trees, shrubs, and their leaf canopies may not be so unchanging depending on age, condition, species, and events such as fire. It would be conservative to evaluate the spill light impacts without this ad hoc treatment of the model results and implicit assumption that the foliage is unchanging and permanent.

Response. See Response to Comment B5-68 for a response to this comment. The lighting analysis demonstrates that the Project's lighting impacts are less than significant, with or without shielding from existing vegetation. Therefore, while speculative, any future material change to the vegetation that currently exists between the softball field and the receptor sites would not change the impact conclusions in the Draft EIR.

- B5-77** Comment. (Table 4.2-4, p. 4.2-33, and Table 4.2-6, p. 4.2-35) Text in the Draft EIR and footnotes in Tables 4.2-4 and 4.2-6 do not identify receivers A, B, C, or D as points of maximum impact. Therefore, other nearby receivers along Canyon Road and along the associated trail could have higher cumulative spill light levels, which may exceed 0.46 lux, which is the threshold of significant effect. [See Letter B5 in Appendix A of the Cal Softball Renovation Project Final EIR for Table 1 included in the comment.]

Spill light (lux values) in Tables 4.2-4 and 4.2-6 should be explained, especially those having a "less than" ("<") symbol. The less than (<) and plus (+) symbols are inappropriate for lay presentation as their meanings are unclear. Addition of <0.06 plus <0.06 lux plus 0.06 lux could be up to <0.18 lux. The caption "Ambient+" needs to be explained as it makes little sense on its own. Interpreted as upper bounds, the reported lux levels outside the project site may approach or exceed the threshold of significant effect at A and other receivers.

Response. Modeling and measurements occurred at representative sites where there are known receptors. As described in Response to Comment B5-53, Receptor Site A is the private property in closest proximity to the project and can be reasonably assumed to be the worst-case scenario for spill light.

The uses of the “less than” symbol in Tables 4.2-4 and 4.2-6 are explained in the lighting technical report as indicating where measured light levels were below the meter threshold of 0.06 footcandles. It would be inappropriate to represent those values as zero, so the report accurately stated that they can only be reasonably shown to be less than 0.06 footcandles.

The “Ambient” column, as stated in the lighting technical report, is the spill light measured with all existing softball and rugby lighting off and is due to lighting in the area unassociated with the project.

The commenter’s reinterpretation of the data presented in Table 1 of the comment is inaccurate. For example, for Receptor Site C:

- The commenter shows < 0.18 footcandles for the “Softball + Rugby + Ambient” condition. This is incorrect. Per Draft EIR Table 4.2-1, the existing conditions were field-measured to be below meter threshold and therefore is <0.06 footcandles. The commenter appears to be misinterpreting the table of the existing conditions, which was thoroughly described in the technical lighting report, where three existing conditions were measured (“Softball + Rugby + Ambient,” “Rugby + Ambient,” and “Ambient Only”), resulting in the derivation of the “Softball Only” and “Rugby Only” lighting conditions. For example, the “Softball + Rugby + Ambient” condition was field-measured to be <0.06 fc and their derivation of this condition as <0.18 footcandles is incorrect.

B5-78 Comment. (Table 4.2-5, p. 4.2-34) Glare (candela values) in Table 4.2-4 should be explained and rounded to the nearest 100 candela. Since the values represent brightness of individual luminaires or luminaire groups—and are not additive sums of brightness—the caption brightness—the caption “Ambient+” needs to be deleted or explained in lay terms as it makes little sense on its own.

Response. The request to round the candela values to the nearest 100 is arbitrary and inappropriate when reporting field-measured values. Glare values of existing conditions are explained in Section 6 of the technical lighting report in Draft EIR Appendix D and are not purported to represent individual luminaires or luminaire groups but represent the brightest measurable area within the field of view that may or may not be comprised of luminaires. The type of meters used to measure brightness take a sample of measured values across a very small area of what is visible within the entire field of view, so in cases where the existing luminaires are fully obstructed, the brightest object may be the playing surface, streetlights, or other sources of direct or reflected illumination.

The headers of the table, consistent with other reporting in the lighting technical report, reference the lighting conditions. “Ambient + Existing Softball” and “Ambient + Anticipated

Softball” clearly describes that the measured or simulated lighting conditions account for sources associated with the project and additional adjacent sources of brightness (ambient lighting from sources such as streetlights, houses, campus buildings, and nearby development).

B5-79 Comment. (Table 4.2-6, p. 4.2-35) Text in the Draft EIR and footnotes in Table 4.2-6 do not identify receivers A, B, C, or D as points of maximum impact. Therefore, other nearby receivers such as those along Canyon Road and along the associated trail could have higher cumulative candela levels of 10,000 to 13,000 cd, which exceed the threshold of significant effect (7500 cd).

Response. See Response to Comment B5-56 above. Receivers A, B, C, and D are points of maximum impact based on their location relative to the Project site.

The commenter’s speculative conclusion is factually incorrect. The unit of candela is fundamentally not additive when considering glare within a field of view, and therefore this interpretation of “cumulative” by the commenter is factually incorrect and demonstrates a lack of understanding of the fundamental units included in the lighting technical analysis.

B5-80 Comment. (pp. 4.2-16, 4.2-33) The Draft EIR appropriately recognizes the low ambient light setting on the edge of urban Berkeley by characterizing the light setting as E2 (see Figure 2). For the E2 zone, and for other defined ambient light zones, various lighting organizations such as CIE and ILP have recommended guidance on maximum acceptable and practically achievable levels of spill light, glare, and sky glow.

CIE 150: 2017 presents guidelines for assessing the environmental impacts of outdoor lighting and provides recommended limits for relevant lighting parameters to contain the obtrusive effects of outdoor lighting. Obtrusive effects of outdoor lighting are best controlled initially by appropriate design; therefore, the CIE guidance focuses on new installations.

Applicable guidance has been published, for example, by the Commission Internationale d’Éclairage (CIE) and Institution for Lighting Professionals (ILP), which provide criteria for evaluating impacts of outdoor sports lighting. The CIE and ILP guidance references provide thresholds of significant effects for all three (i.e., spill light, glare, and sky glow). CIE 150: 2017 considers potentially adverse effects of outdoor lighting on nearby residents; users of adjacent roads (e.g., pedestrians, cyclists); sightseers; beacons and similar systems (e.g., air, marine, rail); and, astronomical observations. Effects of lighting on the natural environment can be difficult to quantify, and CIE 150:2017 does not address these effects. When there are fields, mountains, forests, rivers, lakes and/or coastline, located close to a lighting installation, there is the possibility, depending upon the season, of the lighting having an adverse effect on insects, plants and animals within the area of the proposed installation (CIE 150: 2017, p. 1).

CIE 150:2017 is intended for use by a) planning bodies, particularly local government authorities, to assist in assessing the potential obtrusiveness of outdoor lighting installations and b) designers of outdoor lighting to reduce obtrusive effects to an acceptable degree (CIE 150: 2017, p.1). The same thresholds of significant environmental effect are adopted in the guidance published by ILP. See Attachment A for ILP’s Guidance Note 01/21: The Reduction of Obtrusive Light.

Response. CIE 150:2017 is indeed the relevant international standard and was cited in the Draft EIR lighting technical report (see Appendix D) to determine the relevant threshold of significance for light trespass. It also serves as the technical underpinning for the relevant BN used to determine the threshold for glare, though the BN standard presents the information in a more simply applied format. Additionally, refer to the Response to Comment B5-60 above for the analysis per CIE150:2017 for skyglow.

- B5-81** Comment. (pp. 4.2-33 and 4.2-34) Of spill light, glare, and sky glow, the Cal Softball Field Renovation Project Draft EIR addresses two of the three—spill light and glare. The three metrics are vertical illuminance (in footcandles or lux) for spill light, luminous intensity (in candela) for glare, and upward waste light ratio or upward flux ratio (unitless ratios) for sky glow. Sky glow is not evaluated.

Response. See Response to Comment B5-60 for an analysis of skyglow.

- B5-82** Comment. Sky glow is acknowledged in the Draft EIR, but it is not evaluated. An available metric for quantifying a project's contribution to sky glow is Upward Waste Light Ratio (UWLR) or Upward Flux Ratio (UFR). UFR considers the amount of light directed vertically from an installation's luminaires and the amount reflected up from surfaces (including the field, aluminum bleachers, concrete flatwork, and other surfaces) and compares this sum to the amount of light reflected from the playing field. Independent analysis of the proposed project indicates that the UFR could be in the range 2–3. This is without consideration of the parking lot lighting, path lighting, or the 35 foot x 9 foot scoreboard. Analysis confirms the rather obvious fact that light will be reflected up off the field and bleachers.

Response. See Response to Comment B5-60 for an analysis of skyglow. See Response to Comment B5-71 above regarding parking lot lighting. Scoreboard specifications include shielding and dimming to minimize vertical light spill, glare, and skyglow, and will need to meet all relevant criteria included in Title 24. Given these specs, the scoreboard will not change the conclusions provided in the lighting technical report.

- B5-83** Comment. (p. 4.2-7) Sky glow will affect views of the night sky and scenic views from the Berkeley Hills. It's like a graying of the sky which impedes viewing clarity and viewing of fainter stars, constellations, or planets.

Response. See Response to Comment B5-60 above. Additionally, this local temporary brightening effect is not unique to sports lighting but is true of many lighting installations as stated in the San Marin High School Stadium Lights Project exhibit provided by the commenter (Page 7, paragraph 3). However, the current project is in a different location with different conditions than the commenter's reference at San Marin high school. As demonstrated in Response to Comment B5-60, skyglow impacts of the proposed project would be less than significant.

- B5-84** Comment. Mitigation Measures and Continuing Best Practices (CBPs)

UC Berkeley would implement continuing best practices (CBPs) for aesthetics (AES) listed in the Cal Softball Renovation Project Draft EIR (p. 4.2-31):

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

However, neither is intended or would be effective for minimizing sky glow from sports lighting. These two CBPs are almost certainly intended for architectural lighting and not sports lighting. "Historic character," "exterior surface," "architectural screens," "shading devices," and "preferable to reflective glass" are terms that fit the context of building architecture but have not so much to do with specialized sports field or court lighting. These CBPs are intended to minimize spill light and glare from architectural and parking lot or path lighting.

Response. As described in Response to Comment B5-59, the impact of the proposed project on skyglow is less than significant. Therefore, sky glow mitigation measures are not warranted. Additionally, vertical light spill and glare impacts were also determined to be less than significant in Draft EIR Section 4.2, Aesthetics, and therefore mitigation measures for these lighting impacts are not warranted.

Both CBP AES-6 and -7 are implemented with the proposed project. The installation of shields and cut offs on light fixtures, the precise downward direction of installed field lights, operation of a lighting control system that would facilitate quick and computer-controlled fixture adjustments to ensure proper field illumination, and the optimization of the initial light design through aiming adjustment, pole location adjustment, and lighting height optimization were all conducted to reduce potential lighting impacts under CBP AES-6 and CBP AES-7. The proposed manufacturer leads the sports lighting industry in developing neighborhood-friendly sports lighting, including being an active supporter of the International Dark-Sky Association.

B5-85 Comment. Receiver Locations

The Draft EIR considers relatively few receiver locations for evaluating lighting effects. Receiver locations are described generally in the Draft EIR (p. 4.2-32, -33, -34 & -35), which identifies and evaluates the proposed project's lighting effects on four (4) receivers A, B, C, and D. From the Draft EIR context, we believe that the analysis basically was limited to receivers having a direct line-of-sight to the proposed luminaires in the Cal Softball Field.

Response. See Response to Comment B5-56 above. Receivers with a direct line of sight to the proposed luminaries would be exposed to more light and glare impact than any other receivers. Therefore, the receivers analyzed in the Draft EIR represent those that would experience the maximum potential light and glare impacts. The commenter has not identified

any other receivers that would experience light or glare impacts above the significance thresholds.

B5-86 Comment. Many more receivers in the neighborhood and on the public streets and trails will experience the sky glow of reflected light over the softball field, Witter Rugby Field, and Memorial Stadium. The sky glow effect is not limited to viewers having a direct line-of-sight to the luminaires.

Response. See Responses to Comments B5-60 (skyglow) and B5-56 (receptor site locations) above.

B5-87 Comment. Many more receivers than A, B, C, and D also may have lines-of-sight to the proposed luminaires over the existing softball field. Table 2 (next page) lists proximate candidates. Some have lines-of-sight that may be obscured by intervening trees and shrubs but not by terrain. Viewing elevations of these receiver vary relative to the 90-foot tall luminaire mounting heights poles. Figures 1 and 3 illustrate the zone (yellow-shaded) having an approximate elevation range of 400-580 feet msl, which is at or below proposed luminaire mounting elevation of approximately 580 feet msl.

Response. See Response to Comment B5-56 above.

Comment Letter C5

The following responses directly address comments in the memo provided by Ms. Thomas, dated 29 January 2024. Comments by Ms. Thomas were included as Letter C5, which is included in its entirety in Appendix A of the Cal Softball Renovation Project Final EIR). Each comment letter in Appendix A has been bracketed to number individual comments within each letter. This memorandum includes verbatim comments from Letter C5, followed by responses to each comment. If a comment includes tables and/or figures, those are referenced in the comment and can be viewed in the bracketed letter C5 included in Final EIR Appendix A.

C5-12 Comment. The DEIR did not evaluate the effect of skyglow. By not evaluating skyglow, the DEIR eliminated this data as a condition which would have at least two effects. One is the effect on scenic vistas and two is the indirect effect on cultural resources.

The competition-grade lights are 70 footcandles in the outfield and 100 footcandles for the infield (horizontal illuminance). By way of comparison, Game Day lighting at Memorial Stadium – at “horizontal illuminance” – is 125 footcandles. During security and maintenance, lighting is 20 footcandles.

Please see the attached photograph for an illustration of Skyglow from stadium lights at 6:38 a.m. on 1/25/24. [See Letter C5 in Appendix A of the Cal Softball Renovation Project Final EIR for referenced photograph in the comment.]

The photograph was taken from the sidewalk at the top of Bancroft Steps, facing north toward Memorial Stadium’s southern façade with the bright hillside known as Tightwad Hill in the

background. The silhouette of the hillside known as Panoramic Hill appears to be touching the stadium and is in complete darkness as would be expected at this hour on a winter morning.

Skyglow is not masked by foliage in trees. It illuminates an entire area and creates the illusion of daylight. Lighting which is used at night but that approximates daytime is not restful or semi-rural or compatible with the woodland setting that is most dense at the south of the site, evident in riparian areas especially to the north of the site, and to the dense woodlands in the Ecological Study Area.

Response. See Response to Comment B5-60 above, which provides an analysis for skyglow and demonstrates that the proposed project's impact is below the threshold of significance. As evidenced by this comment, there are other sources of existing light, including light from the existing softball field in the Panoramic Hill area. Complete darkness is not the existing baseline condition in project vicinity.

Comment Letter C9

The following responses directly address comments in the memo provided by Mr. Kelly. Comments by Mr Kelly were included as Letter C9, which is included in its entirety in Appendix A of the Cal Softball Renovation Project Final EIR). Each comment letter in Appendix A has been bracketed to number individual comments within each letter. This memorandum includes verbatim comments from Letter C9, followed by responses to each comment. If a comment includes tables and/or figures, those are referenced in the comment and can be viewed in the bracketed letter C9 included in Final EIR Appendix A.

C9-9 Comment. There is a substantial grouping of homes near the project site, none of which are included as receptor sites in the lighting and glare analysis. The analysis chose four "receptor sites", three of which are random spots in the woods and the fourth location is in a parking lot. None of the receptor sites are representative of actual receptors ie, neighbors whose bedrooms face the proposed project.

The analysis focuses on wooded areas and uses maps which obscure the presence of homes in the area.

Response. Receptor Sites A and C were specifically selected to provide context to the project site from the nearest residential lots, and the measurements were taken from the public street immediately adjacent to those residential lots. Both Receptor Sites A and C represent measurement points as close to "neighbors whose bedrooms face the proposed project" as was viable from the public right-of-way. Receptor Site B is located along the walking path to provide analysis relevant to the project's impact on the wooded area. As explained in Response to Comment B5-56, the proposed project would have a less than significant impact on light spill, with or without the shielding effect of the existing vegetation. Additionally, the glare analysis conservatively assumed no reduction in glare based on obstructions from mature trees and vegetation between the lights and receptors.

C9-10 Comment. Checking the photo provided in the DEIR for site “C” reveals that this map incorrectly identifies the actual physical location of site “C”, which according to the photo is actually many yards further north. An accurate map would show site “C” approximately as shown in the version we have updated below.

Response No measurements were taken from private property. Receptor Site C is properly noted in the EIR as being located on the roadway. The map in the DEIR is correct.

C9-11 Comment. The map used by the Campus here is also very hazy in its depiction of homes in the area. Below is a version of this map with homes included. The homes which may have a view of the project are shown in red. [See Letter C9 in Appendix A of the Cal Softball Renovation Project Final EIR for referenced map in the comment.]

Response The map overlay of buildings is transparent to allow the contour lines to be evident as well, indicating the steep grade. While many of those homes may have a line of view to the project, see the Responses to Comments B5-56 which addresses the potential views from those homes.

C9-12 Comment. The analysis also fails to anticipate or address the direct views of the new lighting poles and units which would be part of the project. For example, the current lighting poles at the site are approximately 50 feet in height, while the new poles will be of 70 to 90 feet in height. Below is a rough simulation of the difference in height, with two new poles roughly placed at approximately 80 feet in height for quick reference. [See Letter C9 in Appendix A of the Cal Softball Renovation Project Final EIR for referenced rough simulation in the comment.]

This change in elevation of light sources will put these lighting units in direct view of many neighbors.

Response. The analysis does account for the increased height of the new lighting poles. See Response to Comment B5-65. While the proposed lighting poles will indeed be taller, they will be significantly more focused downward with improved shielding. Therefore, nearly all of the views will be of the outside of the luminaires (the housing) and not of the light-emitting apertures. The “rough simulation” presented by the commenter does not appear to have accurately scaled representation while the technical analysis does include accurate scaling. The analysis shows that the new lighting will result in less than significant light and glare impacts from the maximally impacted receptors, as further described in Response to Comment B5-56.

C9-13 Comment. Just as an initial example, let’s take a real world look at how the elevation of the new lights facing the hillside will line up in relation to the elevation of homes and bedrooms on the hill.

The general elevation of the softball project is 495 feet above sea level.

Therefore, the new lights will be an elevation of 565 to 585 feet.

Bedrooms facing the canyon at 37 Mosswood are at approximately 595 feet.

Bedrooms at 29 Mosswood facing the canyon are at approximately 580 feet.

Bedrooms at 21 Mosswood are at approximately 570 feet.

The direct view of new lighting is never acknowledged or studied in the DEIR.

Response The direct view of the lighting is indeed captured in the Draft EIR Section 4.2 Aesthetics (and Appendix D) Receptor Sites A and C. Receptor Site A is located in the public right-of-way between 67 Canyon Road and the project site. Receptor Site C is located at the end of Mosswood Road, in the public right-of-way between Arden Path and the private drive that appears to serve 44 Mosswood Road. As shown in the Draft EIR, the direct line-of-site to the luminaires from those locations does not exceed the threshold of significance.

Annex 1: Resume for lighting technical report and comment response author



Dr. Darcie Chinnis

PE, IALD, MIES, LEED AP BD+C, WELL AP | ASSOCIATE PRINCIPAL

Darcie has a strong background in combining humanity, engineering, construction, art, and energy. She has worked on multiple LEED certified projects with extensive working experience in daylighting, lighting controls, energy codes, and light pollution.

Darcie is a registered Professional Engineer in the State of Colorado, a LEED Accredited Professional in Building Design and Construction, an active member of Illumination Engineering Society, and prior Director for the International Dark-Sky Association.

Professional Affiliations

Illuminating Engineering Society	2007 - Current
Technical Review Committee	
Research Symposium Committee Chair, 2020 Symposium	
Peer reviewer for Leukos	
Education Committee Chair for Los Angeles Section	2007 – 2009
Committee for Lighting for the Aged and Partially-Sighted	2007 – 2009
US Green Building Council	
LEED BD+C	Since 2013
Los Angeles Section Member	2006 – 2008
Colorado Section Member	2016 - Current
International Association of Lighting Designers	Since 2019
Professional Member	
State of Colorado	
Registered Professional Engineer	2015
Engineering Intern	2004
International WELL Building Institute	
WELL Accredited Professional	2019
COVID Task Force, Lighting Subject Matter Expert	2020
Aviation Task Force, Lighting Subject Matter Expert	2021
International Dark-Sky Association	
Board of Directors	2015 - 2018
Technical Committee	2018 - Current
Denver Green Code Committee	
Outdoor Lighting Subject Matter Expert	2022

Education

University of Colorado at Boulder
PhD, Civil Engineering
(Illuminating Engineering)

Masters of Science, Civil Engineering
(Illuminating Engineering)

Bachelors of Science, Architectural
Engineering

Experience

Associate Principal, HLB Lighting
2019 - Current

Senior Associate, HLB Lighting
2015 - 2019

Principal, Clanton & Associates
2013 - 2015

Engineer/Researcher, Clanton &
Associates
2010 - 2013

Daylighting Engineer, AEC
2010

Designer, HLB Lighting
2005 - 2009

Dr. Darcie Chinnis

PE, IALD, MIES, LEED AP BD+C, WELL AP | ASSOCIATE PRINCIPAL

Select Project Experience

The Oakland Athletics Howard Terminal Ballpark Lighting Technical Analysis, February 2021

Bayside Performance Park Enhancement Project and Port Master Plan Amendment, San Diego Unified Port District, January 2018

Select Peer-Reviewed Publications

"Lighting for the Elderly: The Effects of Light Source Spectrum and Illuminance on Color Discrimination and Preference", Leukos Vol. 2 No. 2 October 2005

"Wireless Lighting Control: A Life Cycle Cost Evaluation of Multiple Lighting Control Strategies", Leukos Vol. 8 No. 1 July 2011

"IES TM-15 BUG Value-Setting and Adjustment Methodology", Leukos Vol. 8 No. 1 July 2011

"A Comparison of Lighting Energy Modeling Methods to Simulate Annual Energy Use and Peak Demand", Leukos Vol. 9 No. 2 October 2012

Select Conference Presentations

2022 - "Illuminating Color: Revealing the Complexities of Color, Science, and Design", NeoCon

2021 - "Back to Work: Designing for the Future of Office", Denver Design Week

2021 - "Illuminating Color: Revealing the Complexities of Color, Science and Design", Denver Design Week

2020 - "Post-Pandemic: Does UV Lighting Deserve a Place in Our Ceilings?", Denver Design Week

2018 - "Lighting Efficacy: A Specifier's Point of View", Department of Energy SLL Workshop, Nashville, TN

2017 - "A Specifier's Wishlist", Department of Energy SSL Workshop, Denver, CO

2015 - "Modeling Light Pollution for Highways Agency Environmental Policy", Artificial Light at Night, Sherbrook, Quebec, Canada

2015 - "Assessing than Mitigating: Skyglow Measurements to Lighting Ordinances", Artificial Light at Night, Sherbrook, Quebec, Canada

2015 - "A Light Topic: Lighting Ordinances & Street Lighting for Smart Cities", APA Colorado, Steamboat Springs, Colorado, USA

2015 - "Bridging the Research-To-Design Gap", Light Fair International, New York, New York, USA

2013 - "Green Light: Balancing Aesthetics and the Environment", Crites Tidey Lighting Forum, Grand Rapids, MI 2013

2013 - "The IDA/IES Model Lighting Ordinance and IES TM-15-11: Background and Applications", Crites Tidey Lighting Forum, Grand Rapids, MI

2011 - "Wireless Lighting Control: A Life Cycle Cost Evaluation of Multiple Lighting Control Strategies", IES Annual Conference, Austin, TX

Annex 2: Excerpts from ANSI/IES RP-6-23 lighting recommended practice

Reference: ANSI/IES RP-6-23

Table 1-1. Class of Play

FACILITY	CLASS			
	I	II	II	IV
Professional	X			
College	X	X		
Semiprofessional	X	X		
Sports Clubs	X	X	X	
Amateur Leagues		X	X	X
High School		X	X	X
Training Facilities			X	X
Elementary School				X
Recreational Event				X
Social Event				X

Class I: Facilities with spectator capacity over 5,000.
Class II: Facilities with spectator capacity up to 5,000.
Class III: Facilities with spectator capacity up to 2,000.
Class IV: Facilities with limited or no provision for spectators.

Note that colleges fall in the Class I or Class II class of play, regardless of the number of spectators.
Excerpt from Table A-2 “Recommended Illuminance Criteria for *Outdoor* Sports and Recreation Areas.”

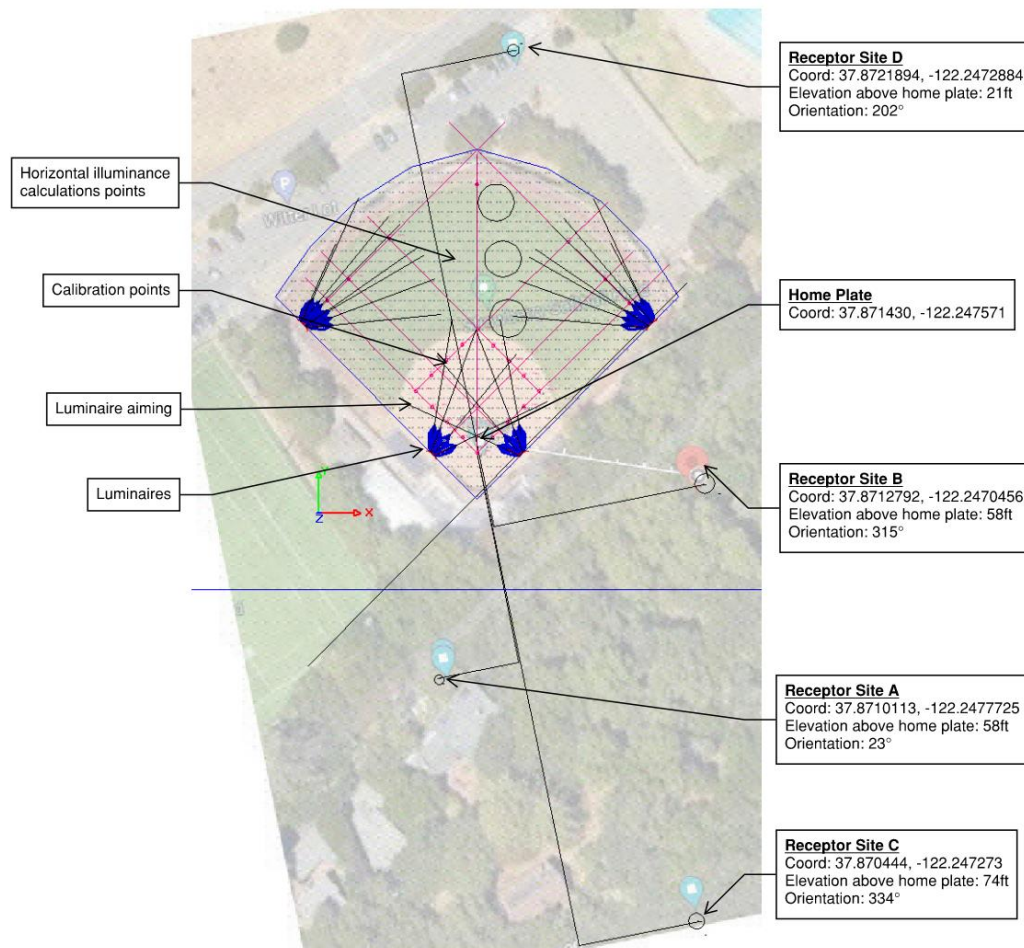
Area of play	IV	0	200 @ 0.91	(20 @ 3.0)	Avg	0.25	3:1	Max:Min		
Softball	See Baseball									
Swimming										

APPLICATION TASK/AREA	Class of Play	TS = Task Surface: Recommended illuminances are at height of task surface above finished grade or floor												
		Horizontal (E _h)						Vertical (E _v)						
		Target E _h @ Height AFF			CV	Uniformity Ratio		Target E _v @ Height AFF			CV	Uniformity Ratio		
		C	A	T	Max	Avg	Ratio	C	A	T	Max	Avg	Ratio	
		Lux @ m	(Fc @ Ft)	Min	CV	Ratio	Basis	Lux @ m	(Fc @ Ft)	Min	CV	Ratio	Basis	
SPORTS AND RECREATION AREAS, EXTERIORS														
Archery														
Shooting line	III	M	100 @ 0.91	(10 @ 3.0)	Avg	0.21	2.5:1	Max:Min						
Target @ 18.3 m (60 ft)	III								P	300 @ 0.91	(30 @ 3.0)	Avg	0.21	2.5:1 Max:Min
Target @ 91.5 m (300 ft)	III								R	500 @ 0.91	(50 @ 3.0)	Avg	0.21	2.5:1 Max:Min
Shooting line	IV	M	100 @ 0.91	(10 @ 3.0)	Avg	0.25	3:1	Max:Min						
Target @ 18.3 m (60 ft)	IV								O	200 @ 0.91	(20 @ 3.0)	Avg	0.25	3:1 Max:Min
Target @ 91.5 m (300 ft)	IV								P	300 @ 0.91	(30 @ 3.0)	Avg	0.25	3:1 Max:Min
Baseball														
Infield	I	U	1,500 @ 0.91	(150 @ 3.0)	Avg	0.07	1.3:1	Max:Min						
Outfield	I	T	1,000 @ 0.91	(100 @ 3.0)	Avg	0.13	1.7:1	Max:Min						
Infield	II	T	1,000 @ 0.91	(100 @ 3.0)	Avg	0.10	1.5:1	Max:Min						
Outfield	II	S	750 @ 0.91	(75 @ 3.0)	Avg	0.17	2:1	Max:Min						
Infield	III	R	500 @ 0.91	(50 @ 3.0)	Avg	0.17	2:1	Max:Min						
Outfield	III	P	300 @ 0.91	(30 @ 3.0)	Avg	0.21	2.5:1	Max:Min						
Infield	IV	P	300 @ 0.91	(30 @ 3.0)	Avg	0.21	2.5:1	Max:Min						
Outfield	IV	O	200 @ 0.91	(20 @ 3.0)	Avg	0.25	3:1	Max:Min						

Annex 3: Existing Conditions Model Parameters

Software: AGI32-20.6

Geometric inputs:



Photometric Inputs:

- Ground surface reflectance = 50%
- Luminaire photometric file: AS-500L-50K-5-5050_IESNA2002.IES from Spitzer lighting
- LLF= 0.85
- Luminaire mounting heights: 45' – 47' AFF

APPENDIX D

Resumes for Biologists

Matt Ricketts

SENIOR BIOLOGIST

Matt Ricketts (*MAT RICK-ets; he/him*) is a senior biologist with 23 years' experience as a wildlife biologist and conservation planner specializing in biological resource inventories and documentation, special-status species surveys, federal Endangered Species Act (ESA)/California ESA compliance, and environmental impact analysis under the California Environmental Quality Act (CEQA). He is also a skilled field biologist with extensive experience in the San Francisco Bay Area and Sacramento–San Joaquin Delta conducting biological resource site assessments, special-status wildlife surveys (e.g., burrowing owl [*Athene cunicularia*] and Swainson's hawk [*Buteo swainsoni*]), and pre-construction nesting bird surveys.

Mr. Ricketts enjoys the challenge of synthesizing complex scientific and regulatory information into reader-friendly documents and communicating this information to clients, regulatory agencies, and project stakeholders. He has worked on a wide range of project types and sizes under many roles, from construction monitor to meeting facilitator. He therefore understands the importance of balancing technical rigor with practical feasibility in environmental documents and strives to bring this balance to every project he works on.

Project Experience

Municipal

St. Helena Defensible Space and Fuels Management Project, City of St. Helena, Napa County, California. Served as senior biologist. The project used Federal Emergency Management Agency Hazard Mitigation Grant Program funds to manage vegetation and create defensible space around structures at high risk of fire damage. Led biological resource field assessments of management areas and preparation of biological constraints report identifying sensitive resources and recommendations for avoiding or minimizing impacts. Primary constraints included special-status plants, steelhead (*Oncorhynchus mykiss*), foothill yellow-legged frog (*Rana boylei*), western pond turtle (*Actinemys marmorata*), nesting birds, sensitive riparian communities along the Napa River and other drainages, and aquatic resources. (2022–2023)

Sustainability Policy and Regulatory Update of the County of Santa Cruz General Plan/Local Coastal Program and Santa Cruz County Code, County of Santa Cruz, California. Served as senior biologist. The proposed project is an update to the County's General Plan/Local Coastal Program and associated revisions to the Santa Cruz County Code to implement policies from the Sustainable Santa Cruz County Plan that was accepted by the Board of Supervisors in October 2014. Prepared the biological resources chapter of the draft Environmental Impact Report (EIR) that required synthesis of previous County-level policy EIRs. Analyzed potential impacts of more than 30 policy updates on biological resources at a program level. The EIR was certified by the Board of Supervisors on November 15, 2022. (2021–2022)



Education

Eastern Kentucky University
MS, Biology/Applied Ecology, 1999

University of Illinois at Urbana-Champaign
BS, Natural Resources and Environmental Sciences, 1997

Professional Affiliations

National Habitat Conservation Planning Coalition

The Wildlife Society

Newell Creek Pipeline Improvement Project, City of Santa Cruz, California. Serving as senior biologist. The project is being proposed to address structural deficiencies in and improve maintenance access to the existing 9.25-mile Newell Creek Pipeline between Loch Lomond Reservoir and the Graham Hill Water Treatment Plant. Coauthored the biological resource assessment report and biological resources section of the draft EIR (released for public review in November 2021). Upcoming work includes assisting the City with the federal ESA permitting strategy, including determining if the project qualifies for coverage under the City's Operations and Maintenance Habitat Conservation Plan (HCP) (2021–Ongoing)

County of Santa Clara Solar Panel Installation Project, County of Santa Clara, San Jose to Morgan Hill, California. Served as lead biologist. The project involved the installation of photovoltaic solar panels at 14 County-owned sites between the Cities of San Jose and Morgan Hill to further expand on the County of Santa Clara's renewable energy portfolio and reduce County emissions from operations. Prepared the biological resource assessment to support CEQA documentation facilitated project compliance with the Santa Clara Valley Habitat Plan (i.e., preparation and submittal of *Reporting Form for Public Projects*). (2021–2022)

Recreation

Augustin Bernal Mountain Bike Project, City of Pleasanton, Alameda County, California. Served as senior biologist. The project involved constructing a formalized mountain bike trail in Augustin Bernal Community Park and decommissioning existing informal trails. The park is located adjacent to designated critical habitat for Alameda whipsnake (*Masticophis lateralis euryxanthus*) and supports potential movement habitat for the species. Prepared biological resources section of initial study and consulted City on measures to minimize impacts on native vegetation and Alameda whipsnake habitat and avoid take of individual Alameda whipsnakes. (2021–2023)

Renewable Energy

Proxima Green Hydrogen Project, Heliogen, Inc., Los Angeles County, California. Served as senior wildlife biologist. The project involves the installation of a commercial hydrogen generation facility on part of a 116-acre parcel northeast of the City of Lancaster in the Antelope Valley. Completed an analysis of Swainson's hawk foraging habitat suitability in the project site vicinity to complement 2023 breeding season surveys by Dudek biologists and inform future CEQA documentation. (2023)

Resource Management

Los Banos Grandes Property Assessment, California Department of Water Resources, Merced County, California. Served as senior wildlife biologist. The project involved assessing 1,725 acres of property owned by the California Department of Water Resources (DWR) west of the Los Banos Creek State Recreation Area for sensitive biological and aquatic resources that may be preserved, enhanced, established, or restored to fulfill future DWR compensatory mitigation needs. Led preparation of resulting biological opportunities and constraints report identifying existing habitat values for special-status species (e.g., California tiger salamander [*Ambystoma californiense*], California red-legged frog [*Rana draytonii*], San Joaquin kit fox [*Vulpes macrotis mutica*], and burrowing owl) and high-level concepts for future management of on-site grassland and riparian communities and enhancement or restoration of on-site aquatic resources (e.g., ponds, ephemeral drainages). (2022)

Cattle Hill Fuels Reduction Project, California Department of Forestry and Fire Protection, San Mateo County, California. Served as senior biologist. The project was a component of the Fire Safe San Mateo County Hazardous Fuel Program Project and proposes to reduce hazardous fuels (e.g., remove understory brush, trim live trees, remove dead trees) from the Wildland Urban Interface between the Cattle Hill Open Space and the Vallemar community, a neighborhood of the City of Pacifica. Conducted the biological resources assessment of the treatment area to inform

the California Department of Forestry and Fire Protection's Environmental Review Report Form for the project. Prepared the technical memorandum summarizing findings and recommending avoidance and minimization measures for potentially occurring special-status plants, California red-legged frog, and nesting birds. (2021)

Jewel Lake Long-term Maintenance Study, Balance Hydrologics Inc./East Bay Regional Park District, Berkeley, California. Served as senior biologist. The project was a preliminary design and feasibility study for the long-term maintenance of Jewel Lake as an open-water body while improving sediment movement and fish passage through the associated reach of Wildcat Creek. Coordinated field mapping of potential jurisdictional aquatic resources, vegetation communities, and wildlife habitat assessments; cowrote the biological resources assessment report; and evaluated biological resource tradeoffs for the four preliminary design concepts using multicriteria decision analysis tools. (2020)

San Francisco Public Utilities Commission Prescribed Burn Project, San Mateo Resource Conservation District, San Francisco Peninsula Watershed, California. Served as senior wildlife biologist. The project is a component of the San Mateo Resource Conservation District's Forest Health and Fire Resiliency Program and proposes prescribed fire over approximately 1,000 acres of the San Francisco Public Utilities Commission's Peninsula Watershed to reduce existing fuel loads and restore a more natural fire regime. Conducted a wildlife resource assessment of the project area to inform analysis of potential impacts on biological resources under CEQA. Worked closely with the California Department of Forestry and Fire Protection, a key project partner, when preparing the report and developing feasible but effective avoidance and minimization measures for special-status wildlife species, including Mission blue butterfly (*Icaricia icarioides missionensis*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), California red-legged frog, and San Francisco dusky-footed woodrat (*Neotoma fuscipes*). (2020)

Water/Wastewater

Delta Field Division HCP, California Department of Water Resources, Sacramento-San Joaquin Delta, California. Served as senior wildlife biologist. The project involves preparing an HCP pursuant to Section 10 of the federal ESA and associated California ESA permitting pursuant to the California Fish and Game Code for operations and maintenance of the State Water Project within the Delta Field Division. Coordinated field surveys for western pond turtle in 2021, prepared HCP species profiles, and provided as-needed technical assistance on survey methodology. (2021–Ongoing)

Delta Dams Rodent Burrow Remediation Project, California Department of Water Resources, Eastern Alameda and Contra Costa Counties, California. Serving as senior wildlife biologist. The project is proposing to address dam stability and safety concerns at Clifton Court Forebay in eastern Contra Costa County and Dyer and Patterson Reservoirs in eastern Alameda County. Proposed activities would occur within approximately 117 acres that supports many sensitive resources, including habitat for California red-legged frog, California tiger salamander, burrowing owl, and western pond turtle. Tasks included preparation and coordination of biological assessments (BAs), biological resources existing conditions report, and an initial study section. Coordinating focused surveys for burrowing owls and Swainson's hawks. (2021–Ongoing)

Santa Cruz Water Rights Project, City of Santa Cruz, California. Served as biologist. The proposed project would modify water rights to expand authorized place of use, improve existing diversions, extend the City's time to put water to full beneficial use, and provide for underground storage to expand the City's water supply. Conducted field reconnaissance of project-level impact sites and coauthored the biological resources chapter of the EIR. Compiled and synthesized a large amount of available information on Santa Cruz County biological resources and analyzed potential impacts at both project and program levels for a complex project with many components. (2020–2021)

B.F. Sisk Safety of Dams Modification Project, California Department of Water Resources, Western Merced County, California. Served as senior wildlife biologist. The project is being proposed in partnership with the Bureau of Reclamation to address dam stability and safety concerns at B.F. Sisk Dam in western Merced County. Proposed activities would occur within an approximately 1,800-acre footprint that supports many sensitive biological resources, including habitat for California tiger salamander and California red-legged frog. From May to December 2020, led preparation of the biological resources existing conditions report, California ESA Section 2081 Incidental Take Permit application to the California Department of Fish and Wildlife (CDFW), and Supplemental EIR biological resources chapter. All documentation required collaboration and coordination among multiple biologists and were delivered on schedule and within budget. (2020)

Relevant Previous Experience

Municipal

Palo Alto Municipal Golf Course Reconfiguration Project, City of Palo Alto, California. While working at ICF, served as lead surveyor for California Ridgeway's rail (*Rallus obsoletus obsoletus*) and California black rail (*Laterallus jamaicensis coturniculus*) along San Francisquito Creek during the 2016 breeding season. Tasks included plotting of passive and active (call-broadcast) survey stations, survey planning and coordination, conducting surveys, mapping detections, and communicating results to the City of Palo Alto and project partners. In 2017, assisted the Santa Clara Valley Water District with active surveys for California Ridgeway's rail along the upstream portion of the creek. Multiple California Ridgeway's rail were detected along the creek and in nearby Faber Marsh in 2016 and in Faber Marsh in 2017. (2016–2017)

Antioch HCP/Natural Community Conservation Plan, City of Antioch, California. While working at ICF, served as lead biologist and deputy project manager for the first phase of an administrative draft HCP/Natural Community Conservation Plan (NCCP) tiering off the East Contra Costa County HCPs/NCCP, which began implementation in 2007. Tasks included updating species accounts, species habitat distribution models, and the conservation strategy chapter. Convened joint independent science advisory panel for the Antioch and East Contra Costa County HCP/NCCPs in February 2018 and served as technical liaison between panel members, both HCP/NCCP permittees (i.e., City of Antioch and East Contra Costa County Habitat Conservancy), and the wildlife agencies (U.S. Fish and Wildlife Service and CDFW). (2017–2018)

Santa Clara Valley Habitat Plan Implementation, Santa Clara Valley Habitat Agency, Morgan Hill, California. While working at ICF, served as grant coordinator from 2016 through 2018 and technical advisor/facilitator for burrowing owl conservation strategy implementation from 2018 to March 2020. Tasks included coordination and writing of grant applications to help fund Habitat Plan land acquisition and management actions, coordination and facilitation of internal and agency meetings on burrowing owl conservation actions (e.g., research projects, management agreements), and serving as liaison between the Habitat Agency and burrowing owl conservation stakeholders (i.e., local researchers, National Wildlife Refuge biologists, Audubon chapter). As grant coordinator, contributed to the successful Central Valley Project Habitat Restoration Program grant application that resulted in \$1 million award to the Habitat Agency to support serpentine habitat acquisition. (2015–2020)

Prewett Family Park Burrowing Owl Preserve, City of Antioch, California. While working at LSA Associates, served as project manager and lead biologist for establishment and initial monitoring of a 24-acre habitat preserve for burrowing owls at Prewett Family Park. The preserve was created in 2009 as on-site mitigation for development of occupied breeding habitat from construction of the Antioch Community Center. Tasks included preparation of a habitat management plan, facilitating plan approval by the City of Antioch and CDFW, annual wintering and breeding season surveys, and annual monitoring of vegetation management on the preserve. Six adults, 26 juveniles, and six nest burrows were observed during the 2012 breeding season. (2008–2014)

Mountain View 2030 General Plan Update, City of Mountain View, Santa Clara County, California. While working at LSA Associates, served as lead biologist. Prepared the biological resources chapters for the Current Conditions Report and draft EIR for the Mountain View Draft 2030 General Plan Update. The chapters described and analyzed potential impacts on biological resources throughout Mountain View, including the Shoreline Park burrowing owl population, steelhead and riparian habitat along Stevens Creek, tidal marsh habitat and associated special-status species along the San Francisco Bay shoreline, and waterbirds. (2009)

Recreation

San Francisco Bay Trail at Martin Luther King, Jr. Regional Shoreline Improvement Project, East Bay Regional Park District, Oakland, California. While working at ICF/GHD, served as project manager and lead biologist for the proposed Bay Trail extension over and adjacent to San Francisco Bay near the Oakland International Airport. Tasks included coordination of document deliveries to the client; tracking project financials and invoicing; and preparation of the biological resources report, California Department of Transportation Natural Environment Study, and ESA Section 7 BA. Other deliverables included the California Department of Transportation-format archaeological survey report, historic resource compliance report, wetland delineation report, California ESA Section 2081 Incidental Take Permit for longfin smelt (*Spirinchus thaleichthys*), and compensatory mitigation technical memorandum. (2016–2020)

San Francisco Bay Trail at Lone Tree Point, East Bay Regional Park District, Rodeo, California. While working at LSA Associates, served as project manager and lead biologist. The project proposed to fill in a 0.5-mile gap in the San Francisco Bay Trail between Victoria by the Bay in Hercules and an existing Park District staging area at Lone Tree Point. Prepared a biological resources technical memorandum and coordinated a cultural resources study to support the preliminary engineering study for the project. Constraints included jurisdictional wetlands (i.e., pond) with riparian habitat, jurisdictional San Francisco Bay waters, California red-legged frog, native grasses, and nesting birds. (March 2014–December 2014)

San Francisco Bay Trail: Pinole Shores to Bayfront Park, East Bay Regional Park District, Pinole, California. While working at LSA Associates, served as lead biologist. The project was a 1.5-mile extension of the San Francisco Bay Trail along the San Pablo Bay shoreline in Pinole. Conducted reconnaissance-level biological surveys and prepared California Department of Transportation Natural Environment Study and federal ESA Section 7 BA addressing listed tidal marsh species (California Ridgway's rail, California black rail, and salt marsh harvest mouse [*Reithrodontomys raviventris*]). Prepared all aquatic resource permit applications for the project (Clean Water Act Section 404 and 401, Bay Conservation and Development Commission). Other biological issues addressed included temporary impacts to jurisdictional waters, loss of heritage trees, and potential impacts to nesting birds. (2010–2011)

Antioch Turf Fields Project, City of Antioch, California. While working at LSA Associates, served as lead biologist for a new community soccer field facility located adjacent to extensive open space near Mount Diablo in eastern Contra Costa County. Tasks included pre-construction surveys for burrowing owl, San Joaquin kit fox, and nesting birds, along with coordination of construction exclusion fencing for California tiger salamander. The requirements were pursuant to an Environmental Commitment Program prepared by the U.S. Bureau of Reclamation (co-owners of the site) under the National Environmental Policy Act. (2008)

Transportation

California High-Speed Rail–San Jose to Merced and San Francisco to San Jose Project Sections, California High Speed Rail Authority, San Francisco, San Mateo, Santa Clara, and Merced Counties, California. While working at ICF, served as lead author of the EIR/Environmental Impact Statement (EIS) biological and aquatic resources chapter and the biological and aquatic resources technical report. Tasks included identifying and describing effects/impacts (with input from fellow team members), coordinating document preparation, and providing technical assistance with habitat models for quantification of special-status species habitat impacts. (2017–2020)

California High-Speed Rail: Merced to Fresno–Central Valley Wye, California High Speed Rail Authority, Merced County, California. While working at ICF, prepared the first draft of the ESA Section 7 BA and contributed to the biological and aquatic resources technical report and the biological resources chapter of the Supplemental EIR/EIS. Tasks also included coordinating and conducting a preliminary survey for nesting Swainson’s hawks throughout the project area in April and June 2015, including development of a project-specific field data collection protocol using iForm and ArcGIS Collector on smartphones or tablets. (2015–2017)

Orwood Road Bridge Replacement Project, Contra Costa County Department of Public Works, Orwood, California. While working at LSA Associates, served as lead biologist. The project entailed updating the natural environment study/BA originally prepared by the Contra Costa County in 2004 to reflect the current regulatory environment and numerous changes to project description. The natural environment study/BA assessed project effects on listed fish (i.e., delta smelt [*Hypomesus transpacificus*], and steelhead), giant garter snake (*Thamnophis gigas*), Swainson’s hawk, and jurisdictional waters. Assisted Contra Costa County planners with updates to the CDFW permit applications (i.e., Fish and Game Code Section 1602 Lake or Streambed Alteration Agreement, California ESA Incidental Take Permit) and National Environmental Policy Act Revalidation documents by identifying and mapping land cover types within the revised work area in accordance with East Contra Costa HCP/NCCP and changes to the project description. (2010–2014)

San Francisco Garter Snake Recovery Action Plan, San Francisco International Airport, California. While working at LSA Associates, served as primary author of a comprehensive Recovery Action Plan for San Francisco garter snake and California red-legged frog on the San Francisco International Airport (SFO) West-of-Bayshore property between Burlingame and Millbrae, San Mateo County. The plan was developed in close coordination with the U.S. Fish and Wildlife Service, CDFW, San Mateo County Flood Protection District, and SFO; its purpose is to conserve populations of both species via habitat enhancement and monitoring while allowing SFO to meet its flood control mandates for the property. Tasks included BA and regulatory permit (Clean Water Act Section 404/401, California Fish and Game Code Section 1602) preparation as well as construction monitoring during plan implementation activities in 2013 (vegetation and sediment removal). (2007–2009, 2013)

Water/Wastewater

Penitencia Delivery Main and Penitencia Force Main Seismic Retrofit Project, Santa Clara Valley Water District, San Jose, California. While working at LSA Associates, served as lead biologist in the initial phase of pipeline and related infrastructure repair/retrofit project at the toe of the Penitencia Creek Landslide east of San Jose. Conducted initial biological resource field assessment and consulted Santa Clara Valley Water District on timing of construction to avoid nesting birds. (2014)

Rodeo Sanitary District Year 3 Sewer Improvements, Rodeo, California. While working at LSA Associates, served as biologist for CEQA review of sewer pipe replacement project from October to December 2013. The project involved the repair of 33,000 linear feet of sewer pipe segments in poor conditions at various locations throughout the

Rodeo Sanitary District's system. Visited locations of proposed repairs to confirm absence of sensitive biological resources that could be impacted by sewer pipe replacement. Prepared technical memorandum summarizing results of the field visit and to support the Rodeo Sanitary District's application for a Notice of Exemption under CEQA. (2017)

Large-Diameter Hayward Fault Seismic Retrofit Project, Alameda County Water District, Hayward, California. While working at LSA Associates, served as wildlife biologist. This project involved the seismic retrofit of existing, large-diameter, potable water transmission pipelines that cross the Hayward Fault in the Alameda County Water District's service area. Conducted biological resource assessments of pipeline retrofit locations to provide CEQA documentation and regulatory permitting support. Prepared technical reports summarizing survey findings and authored biological resources section of CEQA document. (2012–2013)

Specialized Training

- Fundamentals of Structured Decision Making. The Wildlife Society 28th Annual Conference (Instructors: Sarah Converse, Julie Zimmerman, Katrina Alge, Eric Dunton, David Hand, Michael Runge, Jim Lyons). November 1, 2021.
- Preparing HCPs and NCCPs. UC Davis Continuing and Professional Education (Instructors: David Zippin and Kathryn Gaffney). October 3, 2019.
- Swainson's Hawks in California's Central Valley. Sacramento-Shasta Chapter of The Wildlife Society (Instructor: Michael Bradbury). April 12, 2012.
- Southwestern Willow Flycatcher Survey Training Workshop. Southern Sierra Research Station (Instructor: Mary Whitfield). May 16–17, 2009.

Publications

Ricketts, M., B. Kus, and B. Sharp. 2000. "Yellow-Breasted Chat." In *The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-Associated Birds in California*. California Partners in Flight. http://www.prbo.org/calpif/htmldocs/species/riparian/yellow-breasted_chat.htm.

Ricketts, M.S., and G. Ritchison. 2000. "Nesting Success of Yellow-Breasted Chats: Effects of Nest Site and Territory Vegetation Structure." *Wilson Bulletin* 112:510–516.

Presentations

"The Prewett Family Park Burrowing Owl Preserve: A Model for Urban Burrowing Owl Conservation", 2013. Presented at the Annual Meeting of the Western Section of The Wildlife Society. Sacramento, California. January 30.

"Birds of the San Francisco-Oakland Bay Bridge", 2008. Co-presented (with Eric Lichtwardt, LSA Associates) at the 33rd Annual Meeting of the Western Field Ornithologists. San Mateo, California. October 10.

Melissa Blundell

BIOLOGIST

Melissa Blundell (*Mel-lis-uh BLUN-del; she/her*) is a biologist with 13 years' experience engaged in the biological resources. Ms. Blundell has a strong understanding of local, state, and federal regulations pertaining to biological resources, including, but not limited to, the Endangered Species Act, California Fish and Game Code, Clean Water Act, Porter-Cologne Act, Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, local Ventura and Santa Barbara County policies, agency jurisdictions and permitting processes, and a growing understanding of permitting shellfish aquaculture.

Ms. Blundell has experience performing biological resources assessments and producing a variety of technical documents, including documentation to support compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), such as Negative Declaration (ND), Initial Study/Mitigated Negative Declaration (IS/MND), and Environmental Impact Report/Environmental Impact Statement (EIR/EIS); Biological Technical Reports (BTR)/Biological Assessments (BA); Wildlife Movement Plans; Habitat Protection Plans; Habitat Mitigation and Monitoring Plans; Habitat Conservation Plans; Bird and Bat Conservation Strategies; Eagle Conservation Plan; species-specific management plans; and assisting with wetland delineation reports. In addition, Ms. Blundell has authored and co-authored six peer-reviewed scientific journal articles.

Ms. Blundell currently holds state and federal permits to survey for the southwestern willow flycatcher (*Empidonax traillii extimus*) and coastal California gnatcatcher (*Poliophtila californica californica*). In addition, she is experienced in surveying, nest monitoring, and banding the least Bell's vireo (*Vireo bellii pusillus*). She is experienced in performing nesting bird surveys and implementing survey protocol and/or focused surveys for a variety of special-status wildlife, including burrowing owl (*Athene cunicularia*), California red-legged frog (*Rana draytonii*), white-tailed kite (*Elanus leucurus*), coastal raptor surveys, Belding's savannah sparrow (*Passerculus sandwichensis*), bank swallow (*Riparia riparia*), rare plants, and monarch butterflies (*Danaus plexippus*). Ms. Blundell also has experience developing electronic data collection forms, managing databases, performing statistical analyses (e.g., occupancy estimation, modeling take estimates), and performing biological construction monitoring.

Project Experience

Education

Biological Services, Wine and Viticulture Development/Fermentation Sciences Center Project, California Polytechnic University, San Luis Obispo, California. Served as project manager for implementation of biological mitigation measures, including field efforts to re-evaluate habitat suitability for California red-legged frogs, bat roosting



Education

University of California,
Davis

MS, Animal Behavior,
2012

Humboldt State University
BS, Wildlife Management,
2008

Certifications

CDFW Scientific Collecting
Permit and Memorandum
of Understanding; USFWS
Recovery Permit

- Southwestern
willow flycatcher
- Coastal
Californian
gnatcatcher

Professional Affiliations

American Ornithological
Society

The Wildlife Society

surveys, arborist assessment, and nesting bird surveys. Conducted a biological site visit and drafted the biological section of the IS/MND for the project. In addition, conducted nesting bird surveys prior to construction and delivered reports documenting compliance with pre-construction bio mitigation measures. The project proposed to construct new facilities to provide a central location for education and research in fermentation sciences and related consumer products, including wine, beer, and distilled liquor.

Nesting Bird Survey, Henley Hall Tree Removal Project, University of California, Santa Barbara, California. The project involved tree removal for the construction of Henley Hall on the north side of the University of California, Santa Barbara's Main Campus. The CCC recommended raptor and other nesting bird surveys to be conducted for the approval of the Notice of Impending Development. Performed a nesting bird survey for compliance with CCC requests and for compliance with federal and state regulations (Migratory Bird Treaty Act and California Fish and Game Code). After the survey, produced a short memorandum that documented the methods and results of the survey.

West Campus Point Homeowners Association Tree Removal, University of California, Santa Barbara, California. The project proposed to remove eleven eucalyptus (*Eucalyptus* sp.) trees as risk of failure. For compliance with federal and state regulations (Migratory Bird Treaty Act and California Fish and Game Code), conducted a nesting bird survey to determine if active nests of protected special-status or common birds exist within or immediately adjacent to these focused eleven trees.

Raptor Habitat Assessments and Surveys, University of California, Santa Barbara, California. Dudek was contracted with the University of California, Santa Barbara to conduct raptor surveys, assess project areas for raptor habitat suitability, and document raptor activity for three proposed projects/activities (Ocean Road Housing Development Project, a proposed 16-acre neighborhood; Tennis Court Relocation Project; Main/West Campus tree removal in 19 designated areas); and additional project areas. Since project activities have the potential to impact nesting raptor and/or raptor habitat, performed protocol coastal raptor surveys and habitat assessments for these projects. Assisted with the production of letter reports documenting the background, methods, results, discussion, and recommended measures for the raptor survey/assessments for each of the three projects.

Development

Kavli Institute for Theoretical Physics Biological Resources Lighting Plan Analysis, The Towbes Group Inc., Santa Barbara, California. The project proposed exterior lighting improvements on existing residences. As a result, the California Coastal Commission (CCC) required a biological review of the lighting plans and analysis of potential effects on plant and wildlife in the adjacent wetlands. Performed a site visit and produced a memorandum fulfilling the CCC requirements, including a discussion of the anticipated lighting effects on the adjacent wetlands and recommended minimization measures.

Port Hueneme Vehicle Storage, Oxnard, California. Provided biological support for the Final Environmental Impact Report, including providing supplemental review of exterior lighting plans and impacts to adjacent sensitive habitat. The project proposes a temporary vehicle storage facility and appurtenant facilities.

Berggruen Institute Project, Monteverdi LLC, Los Angeles, California. Due to the presence of suitable riparian woodlands within the canyons throughout the project area, conducted protocol-level surveys for least Bell's vireo and southwestern willow flycatcher surveys. The project proposes to construct a new institute, including a main building, scholar village, residences, cottages, and supporting facilities.

Ventura Hideaway, New Urban West, Inc., Ventura, California. Performed a biological constraints analysis and authored a memorandum to assess the potential biological resources constraints associated with the property in consideration of future development.

Meadow View Environmental Quality Assurance Program, Meadow View TH, LLC, Orcutt, California. Served as project manager for the preparation of an Environmental Quality Assurance Plan (EQAP) for the Rice Ranch Specific Plan Area. The project proposes a residential development across a 14-acre neighborhood. The EQAP outlined the biological monitoring requirements for pre-construction, mass grading, and initial construction phases of the project.

Alpine Rancho Palo Verde, Palo Verde, California. Provided permitting assistance in preparing an application for a Water Quality Certification in accordance with the Clean Water Act. The project proposes the development of bridge access for approved residential lot parcels.

Sansum Clinic Development, Solvang, California. Served as the phase manager. Led the preparation of a Biological Resources Assessment Report (BRAR) that documented biological constraints, site visits and surveys, and the potential for special-status species to occur; analyzed impacts; and recommended measures to avoid and minimize impacts. The project proposed to construct a new clinic facility to expand medical health services for patients in the Santa Ynez Valley.

Sycamore Creek, Residential Development, Montecito, California. Provided review for a BRAR that documented biological constraints, site visits and surveys, and the potential for special-status species to occur; analyzed impacts; and recommended measures to avoid and minimize impacts. The project proposed to expand a residential development.

Huntington Drive, Residential Development, Goleta, California. Served as the project manager and conducted a biological site visit, assessment, and raptor surveys and prepared a BRAR that documented biological constraints, site visits and surveys, and the potential for special-status species to occur; analyzed impacts; and recommended measures to avoid and minimize impacts. The project proposed to expand a residential development.

Ocean Meadows Residential Development, County of Santa Barbara, California. Served as the phase manager and conducted vegetation mapping and coastal raptor surveys and assisted with wetland delineations. Led the preparation of a BRAR that documented biological constraints, site visits and surveys, and the potential for special-status species to occur; analyzed impacts; and recommended measures to avoid and minimize impacts. The project proposed to construct residential development adjacent to existing open space between Isla Vista and the City of Goleta and was seeking a Coastal Development Permit.

Cannabis Cultivation, Private Developer, Lompoc, California. Served as the phase manager and lead biologist in the preparation of several documents, including a BA, Existing Conditions Report, Wildlife Movement Plan, and California Tiger Salamander (*Ambystoma californiense*; CTS) Habitat Assessment. The BA and CTS Habitat Assessment documented site visits and the potential for special-status species to occur, analyzed impacts, and recommended measures to avoid and minimize impacts. The project proposed to permit and construct facilities for cannabis cultivation and manufacturing, construct worker residential units, and construct an access bridge.

Cannabis Cultivation, Private Developer, Santa Ynez, California. Served as the phase manager and lead biologist in the preparation of several documents, including a BA, Wildlife Movement Plan, and Tree Protection Plan. The BA documented a site visit and the potential for special-status species to occur, analyzed impacts, and recommended measures to avoid and minimize impacts. The project proposed to permit and construct facilities for cannabis cultivation and manufacturing.

Cannabis Cultivation, Private Developer, Carpinteria, California. Served as the phase manager and lead biologist in the preparation of several documents, including a BRAR, Wildlife Movement Plan, and Tree Protection Plan. The BA documented a site visit and the potential for special-status species to occur, analyzed impacts, and recommended measures to avoid and minimize impacts. The project proposed to permit and construct facilities for cannabis cultivation and manufacturing.

Biological Study Report, Complete Wireless Consulting, Goleta, California. Served as project manager and conducted a site visit to assess the existing Environmentally Sensitive Habitat Areas (ESHA; wetlands), assess the potential impacts of the proposed project on ESHA, and provide recommendations for siting distances from ESHA. The final report included elements and discussion required by the City of Goleta, including an explanation on distance or buffer recommendations, proper screening measures, and recommended mitigation measures. The project proposed the construction of a wireless facility in Goleta for the improvement of wireless communications. Because the project is located adjacent to wetlands, the City of Goleta requested a Biological Study Report.

Hollister Ranch Biological Support, HR-2011 LLC, Santa Barbara County, California. Assisted in the production of a BA that documented biological constraints, site visits and surveys, and the potential for special-status species to occur; analyzed impacts; and recommended measures to avoid and minimize impacts. The project proposed to expand an existing barn.

The Buellton Hub (Pope Property), Capital Pacific Development Group, Buellton, California. Conducted southwestern willow flycatcher and least Bell's vireo protocol-level surveys. Produced the final report documenting survey methods and results for submission to the U.S. Fish and Wildlife Service (USFWS). Assisting with state and federal applications for impacts to aquatic resources.

1062 Coast Village Road, Luzich Partners LLC c/o Brian Cearnal, Santa Barbara, California. Served as phase manager. The project proposed the demolition of an existing apartment building and the construction of a new mixed-use development, including roof decks, commercial space, and a subterranean garage. Prepared a Biological Report requested by the City of Santa Barbara that evaluated the existing biological resources (e.g., habitat, wildlife corridor, and species use) of the project site and existing trees and identifies if proposed mitigation fully mitigates proposed impacts.

24600 Thousand Peaks Road, Adam Selkowitz, Calabasas, California. Provided field assistance with the biological resources inventory survey and documented biological resources on site. The project proposes to build a single-family residence over 8,000 square feet.

Nesting Bird and Tree Surveys, Plum Canyon LLC, Los Angeles County, California. Performed a pre-construction nesting bird survey and produced a report documenting the survey results. The project proposes a residential development located on a hillside adjacent to existing residential areas south of Plum Canyon Road and west of Whites Canyon Road in unincorporated Los Angeles County, California.

15 South Hope Avenue – Arroyo Burro Creek Buffer Analysis, Faring Capital, Santa Barbara, California. Performed a site visit and assisted with the production of a BRAR to provide the City of Santa Barbara with an updated analysis and assessment for the Arroyo Burro Creek buffer zone. The BRAR documented existing conditions, vegetation mapping, and the potential for special-status species to occur; provided a creek buffer assessment; and recommended mitigation. The project proposed to develop an integrated mixed-use development in an existing developed lot along Arroyo Burro Creek. The project would construct residential apartments with commercial retail space.

805 Park Lane West Biology Report, Bob Easton AIA Architect, Montecito, California. The project proposed to develop a single-family residence on an undeveloped lot along San Ysidro Creek. Conducted a site visit and prepared a BA that documented the existing conditions, vegetation communities, and the potential for special-status species to occur; delineated Environmentally Sensitive Habitats (ESH); assessed impacts; and recommended mitigation measures. Produced a Habitat Mitigation and Monitoring Plan to identify mitigation requirements for impacts to ESH and ESH buffers from the proposed development.

Jalama Beach Affordable Overnight Accommodation, County of Santa Barbara, California. The project proposed to develop new RV cabins and associated support facilities in the existing Jalama Beach Park campground. Performed site visits to assess existing conditions and the potential for special-status species to occur and performed a California red-legged frog protocol-level survey and monarch overwintering habitat survey. Prepared the Biological Resources section of an IS/MND, focused wildlife and floristic survey report, and recommended mitigation measure to avoid sensitive biological resources and recommend Environmental Sensitive Habitat Area buffers from limits of project construction.

Dry Canyon Artillery Range Remedial Investigation/Feasibility Study, Dawson Technical LLC, Ventura County, California. The project involved clearance surveys and controlled detonation of Explosives of Concern. Dudek provided biological support for site investigation and soil sampling. Conducted biological monitoring, including flagging sensitive species and resources within the sampling transects, and provided worker education training. Produced a final report for biological services.

Carpinteria Bluffs Area I, Capital Hall Partners/Plus Development, LLC, Santa Barbara County, California. Provided third-party review and verification for previously prepared surveys. Performed habitat suitability analyses and performed overwintering monarch butterfly surveys and wintering/nesting raptor surveys. The project proposes a combination of residential, recreation, and commercial uses on 24 acres adjacent to Carpinteria Bluffs Natural Preserve.

Bacara Consent Restoration Plan, SB Luxury Resort LLC c/o Ohana Real Estate Investors, Goleta, California. As a result of a California Coastal Commission Cease and Desist Order and Consent Restoration Order, the project involved restorative grading, implementing native habitat revegetation, mitigation, and implementing long-term monitoring. Assisted with on- and off-site restoration monitoring, including installation monitoring, quantitative and qualitative monitoring, post-storm visits to assess the functionality of straw wattles, nesting bird surveys, and photo documentation. Assisted with the preparation of a supplemental BTR for the proposed demolition and relocation of the existing beach house. The BTR described the existing conditions and potential project impacts and recommended measures for impacts.

Cabrillo Business Park, Sares-Regis Group, Goleta, California. Conducted biological construction monitoring of fence installation for the protection of adjacent wetland resources. The project involved a large commercial development.

San Carlos Ranch, Sheppard, Mullin, Richter & Hampton LLC, Montecito, California. Drafted Due Diligence for biological resources. Efforts included reviewing the Community Plan and field reconnaissance results for wildlife, waters/wetlands, and plants. Incorporated all methods and results into Due Diligence. The purpose of the report is to present due diligence for sensitive biological resources that occur or have a potential to occur on site and that may pose constraints to any future development.

Least Bell's Vireo Surveys, Southern California Edison Reliability Project, Santa Barbara and Ventura Counties, California. Served as the project manager to oversee the subcontractor agreement between Dudek and Garcia and Associates. The project involved improving infrastructure components for increased reliability to meet electrical

demands during emergencies and enhance operational flexibility. Dudek activities involved performing protocol least Bell's vireo surveys in several riparian habitats at sites throughout Ventura and Santa Barbara counties. Biologists documented all wildlife occurrences during surveys and provided final site survey results and documentation to Garcia and Associates.

Newport Banning Ranch, Aera Energy LLC, Orange, California. Conducted least Bell's vireo surveys that included focused behavioral observations to determine pair/breeding status of all individuals detected on site. Participated in California gnatcatcher surveys that included focused behavioral observations to determine accurate population numbers and pair/breeding status. Project proposed a mixed-use development with an open space preserve, parklands, infill development, public roadways, and existing oil facilities.

Grapevine Project, Tejon Ranch Corporation, Kern County, California. Conducted focused surveys for special-status plants and burrow/den surveys with a focus on burrowing owl, San Joaquin kit fox (*Vulpes macrotis mutica*), American badger (*Taxidea taxus*), and kangaroo rat (*Dipodomys* spp.). Documented general wildlife observations while on site, including their special status. Assisted with San Joaquin kit fox camera stations setup and provided research support to examine suitable field markers for small mammal trapping efforts. The project proposed to implement the Grapevine Specific and Community Plan, including a new residential community and employment center, open space use, and infrastructure.

Guadalupe Dunes Asphalt Road Removal, County of Santa Barbara, California. The project involved the removal of approximately 0.36 miles of an eroded access road within the Rancho Guadalupe Dunes Park. Provided biological construction monitoring for the avoidance of impacts to native dune vegetation, wetlands, and aquatic habitats of the Santa Maria River. Monitoring activities were conducted under a special condition under a categorical exemption provided to the County of Santa Barbara under a Coastal Development Permit.

Alessandro Business Park, Western Realco, Riverside, California. In accordance with mitigation measures, conducted biological resource monitoring during initial grading activities. Ensured avoidance of sensitive resources on site, including riverine/riparian resources, buffer avoidance for nesting species detected on site, jurisdictional resource on site, and additional specified mitigation measures. Provided a daily report of biological resources.

Portola Center, USA Portola Properties LLC/SunRanch Capital Partners LLC, San Diego, California. Biological resource monitoring for geotechnical efforts. Documented general wildlife observations, including detection of special-status species on site and habitat conditions. Ensured geotechnical efforts minimized and avoided sensitive biological resources impacts. Assisted in completing informal Section 7 consultation letter and wrote U.S. Army Corps of Engineers linear foot waiver request. Assisted in drafting the California gnatcatcher 45-day report.

Hydrogeology Studies, Confidential Client, San Diego County, California. Served as a project biologist for geotechnical exploration. Responsibilities included biological monitoring for the federally endangered Arroyo toad (*Anaxyrus californicus*) and federally endangered Stephens' kangaroo rat (*Dipodomys stephensi*), construction monitoring, and biological documentation preparation.

Paradiso del Mare Residential Development, CPH Dos Pueblos Associates, Gaviota Coast, California. The project proposed development of two single-family homes on two separate adjacent parcels totaling almost 143 acres. Provided pre-construction nesting birds survey support and performed raptor surveys.

Energy

Confidential Wind Development, Central California, California. The proposed project involved the proposed development of a wind farm. Assisted with the analysis of eagle data to provide a preliminary assessment for eagle take estimates and related analyses associated with the USFWS Eagle Conservation Plan Guidance.

Confidential Solar Project, Confidential Energy Client, City or County, California. The approximately 1,760 acre proposed project involved the construction of a solar photovoltaic and energy storage facility, including solar arrays, collection systems, energy storage structure, switchyard/substation, associated overhead towers, fencing, and access roads. Provided technical assistance in drafting a site assessment letter report to address the California red-legged frog and California tiger salamander.

Confidential Solar Project, Confidential Energy Client, Fresno, California. The approximately 585 acre proposed project involved the construction of a solar energy system, on-site substation, energy storage system, generation tie-line, and ancillary facilities in the Central Valley. Provided technical assistance in drafting a BTR that documented and assessed existing biological resources and site assessments and evaluated impacts to sensitive biological resources based on local, state, and federal policies and regulations.

Confidential Solar Project, Confidential Energy Client, Fresno, California. The approximately 1,288 acre proposed project involved the construction of a solar photovoltaic power generation facility, involving up to five different facilities. Provided technical assistance in evaluating and assessing the potential for special-status plants and wildlife to occur.

Development Project, Confidential Client, Bakersfield, California. The proposed project involved a significant number of acres of biological assessment area for the development of focused areas for oil and gas production. Assisted in the preparation of wildlife habitat assessments and special-status wildlife surveys; and provided California Fish and Game Code Section 2081 permit application support, including drafting avoidance plans for blunt-nosed leopard lizard (*Gambelia sila*) and giant kangaroo rat (*Dipodomys ingens*) and a relocation plan for the Nelson's antelope squirrel (*Ammospermophilus nelsoni*). Assessed project cumulative impacts.

Adera Solar Biological Monitoring, Solairedirect USA Inc., Madera, California. The approximately 160-acre proposed project involved the development of a solar photovoltaic facility. Performed pre-construction nesting bird surveys and Swainson's hawk (*Buteo swainsoni*) nest monitoring. Produced associated biological compliance, monitoring, and observation reports.

San Diego Gas and Electric Cleveland National Forest Electric Safety and Reliability Plan Project, California Public Utilities Commission, County of San Diego, California. The proposed project involved a variety of wood-to-steel pole conversions and replacement or undergrounding of equipment to improve the fire-resistance electrical facilities and infrastructure throughout San Diego County, located within and outside of Cleveland National Forest. Provided technical biological assistance for CEQA/NEPA analysis and documentation; and drafted the Biological Resources section for the EIR/EIS to document the existing biological resource, potentially occurring sensitive resources, project impacts, and avoidance, minimization, and mitigation measures.

Confidential Solar Project, Confidential Energy Client, San Diego County, California. Assembled the BTR, including compiling the entire report, coordinating review, compiling all sections, revising acreages, coordinating with geographic information system (GIS) analysts, and requiring figures. Responded to and provided revisions to the BTR and EIR sections.

Confidential Solar Project, Confidential Energy Client, Blythe, California. Drafted the preconstruction survey report for activities conducted in January 2015. The report included the introduction, methods, and results.

Confidential Solar Project, Confidential Energy Client, Riverside County, California. Dudek provided environmental compliance management and restoration support services for the 250-megawatt photovoltaic solar facility. Conducted pre-construction nesting bird surveys and associated reporting for the on-going compliance monitoring and reporting program during construction.

San Diego Gas and Electric TL637 Wood-to-Steel Replacement Project, California Public Utilities Commission, San Diego, California. The project proposed to fire-harden approximately 14 miles of existing 69-kV wood pole power lines between Creelman and Santa Ysabel substations. Provided technical support in drafting the biological section of an IS/MND for analysis and responded to public and agency comments on the draft. Provided support in reviewing Mitigation, Monitoring, and Compliance Reporting related to nesting bird surveys.

Confidential Solar Project, Confidential Energy Client, Riverside, California. This project involved the construction of a solar facility in Riverside County. In accordance with mitigation measures, drafted a Raven Monitoring, Management, and Control Plan consistent with most current USFWS-approved raven management guidelines. The Plan's purpose was to avoid any project-related increases in raven numbers during construction, operation, and closure; and to avoid project-related impacts from ravens to the desert tortoise (*Gopherus agassizii*) and other native wildlife.

Confidential Wind Repowering Project, Confidential Energy Client, Riverside County, California. Dudek prepared an ND for this project involving the decommissioning of approximately 170 wind turbines and repowering approximately 118 turbines. Supported the necessary BTRs for this project, including drafting biological resources reports and assisting with species occurrence evaluations.

Confidential Solar Project, Confidential Energy Client, San Diego, California. Dudek provided environmental support for the proposed 12-acre solar energy development, including completing necessary environmental surveys and associated documentation for project approvals. Conducted botanical surveys documenting the occurrences of the desert beauty (*Linanthus bellus*), Jacumba milk vetch (*Astragalus douglasii* var. *perstrictus*), and sticky geraea (*Geraea viscida*).

San Diego Gas and Electric Wind Interconnect Project, California Public Utilities Commission, San Diego, California. The project involved the development of an interconnection transmission facilities for two renewable energy projects: Manzanita Wind Project and the Shu'luuk Wind Project (formerly known as the Campo Wind Project) located in San Diego County. Dudek prepared the required CEQA/NEPA documents for this project. Assisted in drafting the Biological Resources section of the EIR, including the compilation of special-status species occurrence tables.

Bark Beetle Infestation Biology Services, Southern California Edison, San Bernardino and Riverside Counties, California. Dudek provided biological survey and monitoring services related to the Hazard Tree Removal project and in support of the transmission and distribution services. Dudek was responsible for conducting biological surveys along all Southern California Edison circuits within the San Bernardino and San Jacinto Mountains prior to removal of bark beetle-infested trees, drought-stressed trees, and other damaged trees from the vicinity of its poles, lines, and other facilities. The project area encompassed 106 square miles, an estimated 62,000 acres of tree removal area, more than 22,000 power poles, and 538 linear miles of utility lines. Provided biological monitoring support before and during tree removal activities to avoid impacts to jurisdictional aquatic resources, U.S. Forest Service sensitive species, and state- and federally listed, proposed, and candidate

species, including the least Bell's vireo, southwestern willow flycatcher, California red-legged frog, arroyo toad, southern mountain yellow-legged frog (*Rana muscosa*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), and various plant species.

Municipal

Santa Barbara Master Plan EIR, Coffman Associates, California. The proposed Master Plan provides guidance for the Airport's overall development for the subsequent 15 to 20 years and includes Taxiway extensions and improvements, operations and support facility changes, construction of a new parking lot, expansion of the air terminal, and relocation of a base operator. Assisted in researching and providing a response to agency comments on the Draft EIR for the proposed project regarding white-tailed kites (*Elanus leucurus*).

Western Snowy Plover Plan, City of Newport Beach, California. Drafted a western snowy plover (*Charadrius nivosus nivosus*) Management Plan.

Department of Public Works As-Needed Environmental Services, County of Los Angeles, California. Provided biological monitoring and conducted rare plant surveys.

On-Call Environmental Services, City of Los Angeles, California. Provided biological construction monitoring for sensitive biological resources adjacent to the Chatsworth Reservoir.

Resource Management

Analysis of Breeding Bird Data, Boulder County Parks and Open Space, Colorado. Prepared and provided a strategic memorandum related to the analysis of breeding bird data collected by Boulder County over decades. Provided quality assurance/quality control with the data, produced a strategic analysis document, performed distance sampling analysis to estimate avian density estimates, and produced a final report and R code training video.

Creek and Watershed Management Plan, City of Goleta, California. Dudek contracted with the City of Goleta to develop a Creek and Watershed Management Plan (Plan) under and implementation action in the City's General Plan. The over 450-page Plan focused on the City's existing twelve creek segments and provided details on a variety of topics, including stakeholder and public outreach, regulatory setting, baseline watershed characteristics, creek impairments, and an implementation program. In addition, wildlife corridor and riparian bird studies were included as a part of this plan. Served as deputy project manager, performed biological field assessments and field surveys, managed field efforts, and coordinated and drafted the various components of the Plan.

Resource Specialist Professional Services, California Department of Parks and Recreation, City of Ventura, California. Served as phase manager for wildlife surveys for five special-status wildlife species, including burrowing owl, Belding's savannah sparrow (*Passerculus sandwichensis*), bank swallow, least Bell's vireo, and southwestern willow flycatcher. Assisted with vegetation mapping and wetland delineations. Produced the final biological survey report documenting methods and results of survey efforts. In addition, as a Dudek biologist representative, attended project meeting with clients and staff to discuss coastal development strategies and project approaches to satisfy California Coastal Commission requirements.

McGrath State Beach Campground Relocation, California Department of Parks and Recreation, Oxnard, California. Served as the phase manager and lead biologist for wildlife surveys for five special-status wildlife species, including burrowing owl, Belding's savannah sparrow, bank swallow, least Bell's vireo, and southwestern willow flycatcher. Assisted with vegetation mapping and wetland delineations. Produced the final biological survey report documenting methods and results of survey efforts.

Avian and Vegetation Pilot Monitoring Studies, Rancho Mission Viejo Land Trust, Orange County, California. Over four years, served as project statistician to provide analysis for avian point count data collected during the breeding season. The project involved plans for residential development and the dedication and management of open space habitat. As part of an open space management plan, project activities involved conducting avian point count surveys in riparian systems throughout Orange County and advising on suitable habitat for least Bell's vireos. Avian point count data was collected as part of an ongoing biological resource-monitoring program. Primary statistical analysis performed includes occupancy estimation/modeling and zero-inflated mixed modeling. Software programs used for organization and analyses includes Access, PRESENCE, TRENDS, and R. After the analyses, annual reports were produced, which included the methods, results, and discussion of the analyses. In addition, activities involved providing vegetation data summaries/analysis using DSTPLAN software.

Merriam Mountains Land Development, Newland Sierra LLC, San Diego, California. Throughout breeding season, conducted least Bell's vireo surveys at six different locations. Assisted with USFWS 45-day report for least Bell's vireo and southwestern willow flycatcher surveys. Assisted in writing several documents associated with project development, including a memorandum summarizing on-site biological resources, such as plant and wildlife potential/occurrences. Wrote the biological resources section of the Open Space document; the Hardline Agreement memorandum, including conducting scientific literature review of wildlife movement potential; several sections of the BTR; and assisted with BTR revisions. Assisted/trained on vegetation mapping.

South Sacramento Habitat Conservation Plan and Aquatic Resources Plan, County of Sacramento, South Sacramento, California. Drafted Chapter 6 (Impacts) and Chapter 7 (Conservation Strategy) of the South Sacramento Habitat Conservation Plan. Chapters included details for seven covered plant species. Assisted with drafting details for invertebrate species.

Administrative Draft Desert Renewable Energy Conservation Plan and Public Draft; Aspen Environmental Group; Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties; California. Provided support to draft Desert Renewable Energy Conservation Plan (DRECP) documents. Revised documents based on changes to covered species list.

Countywide Habitat Preservation/Conservation Framework Phase I and Phase II (Draft Regional Conservation Investment Strategy), County of San Bernardino, California. Drafted and reviewed species accounts for the Regional Conservation Investment Strategy developed for the County of San Bernardino, San Bernardino County Transportation Authority, and Southern California Association of Governments.

Newhall Ranch Surveys Project, Newhall Land and Farming Company, Los Angeles County, California. Assisted with the Homestead South BTR (direct impacts and mitigation measures). Performed rare plant surveys for slender mariposa lily (*Calochortus clavatus* var. *gracilis*). Performed and assisted in the field management of burrowing owl and American badger surveys. Performed protocol coastal California gnatcatcher surveys. Organized field data and produced full wildlife reports, including figures, for five survey project areas. Performed literature review for bat roost replacement; and American bullfrog (*Lithobates catesbeianus*), African clawed frog (*Xenopus laevis*), and crayfish management/control methods.

As-Needed Environmental Services, Parsons Brinckerhoff Inc., San Diego County, California. Completed training for working along the Mid-Coast Corridor Transit project within the railroad right-of-way. Conducted nesting bird surveys at three sites. Conducted biological monitoring for geotechnical efforts at two site locations to ensure and document the avoidance of sensitive biological and jurisdictional resources.

The Crossings Mitigation Monitoring, City of Carlsbad, California. Assisted in the daily operation and maintenance of brown-headed cowbird (*Molothrus ater*) trapping within the golf course. The trapping program is a USFWS requirement as mitigation for impacts to habitat for federally listed species, including least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher.

California Energy Commission Environmental Protection DRECP, Aspen Environmental Group, Riverside County, California. Researched species information and wrote detailed species profile for Bendire's Thrasher (*Toxostoma bendirei*). Reviewed elf owl (*Micrathene whitneyi*) occurrences within Joshua Tree National Park.

Peter's Canyon Regional Park CEQA Study, Orange County Fire Authority, Irvine, California. Assisted with biological documentation preparation on botanical and wildlife sections of the final technical report. Assisted in preparation of a USFWS 45-day report for California gnatcatcher.

Santa Anita Stormwater Flood Management and Seismic Strengthening Project, Los Angeles Department of Public Works, Los Angeles County, California. Performed protocol-level surveys for southwestern willow flycatcher and least Bell's vireo. The project proposes remediation of the seismic deficiencies at the debris dam to improve public safety and reduce flood risk to downstream communities.

San Gabriel Reservoir Post-Fire Emergency Restoration Project, Los Angeles Department of Public Works, Los Angeles County, California. Performed protocol-level surveys for southwestern willow flycatcher and least Bell's vireo. The proposed project would result in the excavation of approximately 4.9 million cubic yards of debris and sediment from within an approximate 120-acre excavation area upstream of the San Gabriel Dam to restore flood control capacity of the San Gabriel Reservoir and ensure the protection of life and property downstream of the dam.

Transportation

Bear Valley Parkway, Spieth-Wohlford Inc., Escondido, California. Assisted with assembling a jurisdictional delineation report.

Transportation and Stormwater Department Regulatory Permitting, URS Corporation, San Diego, California. Conducted and documented least Bell's vireo surveys on Murphy Canyon Creek throughout breeding season. Assisted with permit applications and writing, reviewing, and addressing comments for the proposed channel maintenance project in Murphy Canyon Creek and Sorrento Creek, including Section 404 Nationwide Permit, Section 401 Water Quality Certification, and Section 1602 Streambed Alteration Agreement (SAA) and Lake and Stream Alteration extension packet for the CDFW SAA. Addressed comments on the Individual BA for Murphy Canyon and wrote the Regional Water Quality Control Board letter for Murphy Canyon permit application. Assisted in compiling the USFWS 45-day report for California gnatcatcher. Wrote the biological memorandum special-status species section incorporating three watersheds and approximately seven facilities.

As-Needed Environmental Services for Mid-Corridor Transit, PB Americas Inc., San Diego County, California. Participated in North County Transit District contractor safety training.

Water/Wastewater

San Joaquin Field Division Habitat Conservation Plan, Department of Water Resources, Central Valley, California. Supported field efforts for burrowing owl, blunt-nosed leopard lizard, and tricolored blackbird (*Agelaius tricolor*). Performed field surveys and summarized data from field crews. Provided field crew support and direction, along with field survey coordination. The surveys encompassing portions of the California Department of Water

Resources California Aqueduct and Coastal Branch Aqueduct in Kern, King, and San Luis Obispo counties to support the development of the San Joaquin Field Division Habitat Conservation Plan Project.

Delta Dams Burrow Remediation Project, Department of Water Resources, Counties of Alameda and Contra Costa, California. Assisted with preparing permitting applications for submission to the U.S. Army Corps of Engineers, CDFW, and Regional Water Quality Control Board. Additional assistance included updating descriptions for the IS/MND and addressing agency comments. The project proposed to provide burrow remediation activities and associated supporting facilities at three reservoirs expanding across two counties.

Hill Canyon Wastewater Treatment Plant, Thousand Oaks, California. Served as phase manager for biological resource and led the field surveys and production of a biological constraints report. Subsequent efforts included rare plant surveys, aquatic resources delineation, and strategy memorandum for permitting and recommended biological surveys. The project proposes the construction of a debris basin and associated facility updates to re-route stormwater runoff from the adjacent, undeveloped landscape.

William B. Cater Water Treatment Plant, City of Santa Barbara, California. Served as the phase manager and coordinated the development of technical reports for noise, air quality/greenhouse gas, archaeology, and biological resources. For biological resources, led the preparation of a BRAR that documented biological constraints, site visits and surveys, and the potential for special-status species to occur; analyzed impacts; and recommended measures to avoid and minimize impacts. The project proposed to update facilities, including the construction of a new basin and supporting infrastructure.

Emergency Permits, Goleta Sanitary District, Santa Barbara County, California. The emergency work involved the installation of rip-rap adjacent to the Goleta Sanitary District sewer outfall, which was exposed as a result of sudden extreme winter weather events and high surf. Performed a biological site survey prior to emergency work and biological monitoring during activities to provide recommended guidance in avoiding impacts to sensitive resources, such as nesting birds, special-status species, or sensitive biological resources. Prepared a memorandum after monitoring activities to document the details of the emergency work, monitoring activities, and results.

Hexavalent Chromium Maximum Contaminant Level Response Program, Santa Ynez River Water Conservation District, Santa Barbara County, California. The project proposed to replace recently failed wells, establish water treatment facilities, and provide potable water for compliance with the California Maximum Contaminant Level for Hexavalent Chromium Response Program. Prepared the Biological Resources section of the IS/MND for compliance with CEQA. Preparation of this section involved a site visit, vegetation mapping, assessing the potential for special-status species to occur, impact assessment, and recommended avoidance and mitigation measures.

Braemar Forcemain No. 2 Rehabilitation Project, City of Santa Barbara, California. The project involved the addition of a forcemain on an existing bridge over Arroyo Burro Creek along Cliff Drive that would provide redundancy if pipe failure occurs. Produced a BA report for this project, which included assessing project components, assessing existing biological resources and the potential for special-status species to occur, mapping vegetation communities, analyzing impacts, and providing recommended measures to avoid and minimize impacts. The BA was developed to support the CEQA and Local Coastal Plan reporting and review process for the project.

Operations and Maintenance EIRs, Metropolitan Water District of Southern California, Orange and San Bernardino Counties, California. Performed surveys for least Bell's vireo and southwestern willow flycatchers across 10 survey sites. Assisting with coastal California gnatcatchers surveys. Organized field data and produced the USFWS 45-day vireo/flycatcher survey summary report.

Charles E. Meyer Desalination Plant Reactivation Project, Carollo Engineers Inc., Santa Barbara, California. The project involved both onshore (beach), offshore, and inland repair and maintenance activities. Performed a western snowy plover habitat assessment for onshore (beach) components and produced a BA in support of a Coastal Development Permit and Nationwide Permit (Section 10 Rivers and Harbors Act) for project activities. The BA documented a site visit and the potential for special-status species to occur, analyzed impacts, and recommended measures to avoid and minimize impacts. Assisted in the preparation of a nesting bird survey plan. Updated the BA for additional proposed repair and maintenance activities.

Southwest Costa Mesa Trunk Sewer Consolidation Project, Orange County Sanitation District, Costa Mesa, California. Assisted in ensuring final EIR and BTR consistency after changes in project design. The project involved the construction of a new trunk sewer, connecting pipelines, and the abandonment of several pump stations.

As-Needed Environmental Consulting Services, City of Vista, California. Conducted nesting bird surveys for Migratory Bird Treaty Act compliance and Regional Water Quality Control Board requirements. The project involved trenchless pipe rehabilitation for approximately 270 sewer pipelines (manholes) throughout Vista. Conducted surveys at 126 manholes. Documented any avian nesting behavior, species identification, and potential nesting locations.



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