PUBLIC DRAFT

Initial Study/Mitigated Negative Declaration

Cabrillo High School Baseball Field Lighting

OCTOBER 2021

Prepared for:

CLIENT
Lompoc Unified School District
1301 North A Street
Lompoc, CA 93436
Contact: Douglas Sorum, Assistant Superintendent

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Santa Barbara, California 93101
Contact: Jonathan Leech

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Table of Contents

SECTION **PAGE**

APPENDICES

A. Lighting Design Details
B. Modeling Data - Air Quality, Greenhouse Gasses, Energy Consumption
C. Cultural Resources Data
D. Noise Modeling Data

FIGURE(S)

TABLE(S)

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
CAAQS	California Ambient Air Quality Standards
CCIC	Central Coast Information Center
CEC's	California Energy Commission
CHRIS	California Historic Resources Information System
CPUC's	California Public Utility Commission
EIA	Energy Information Association
GHG	greenhouse gas
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
RPS	Renewables Portfolio Standard
RCNM	Roadway Construction Noise Model
SBCAG	Santa Barbara County Association of Governments
SCCAB	South Central Coast Air Basin
UCSB	University of California Santa Barbara

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1.0 Introduction

1.1 Project Overview

The Cabrillo High School Baseball Field Lighting Project involves the installation of pole mounted lighting around the perimeter of the primary baseball field to provide illumination for evening use of the field to support baseball practices and league games. A total of eight (8) light poles would be installed, with heights ranging from 70 feet to 80 feet. Between 6 and 12 individual luminaires (or light fixtures) would be mounted on each of the poles. Trenching would be completed to install wiring between the poles and electrical control panel. The California Air Resources Board (CARB) California Emissions Estimator Model (CalEEMod) identifies a default construction period for the scale and nature of the Project, which includes one month for the trenching operation and two months for the pole and wiring installation. These construction schedule durations are considered very conservative but are used in the analysis of construction effects of the Project to ensure potential worst-case conditions are addressed. Once installed, the lighting system would be used for practices that extend beyond dusk on weekdays during the baseball season, and to support home baseball games scheduled to occur in the evening. Use of the lighting system during such practices and games is not anticipated to extend later than 9 p.m.

1.2 California Environmental Quality Act Compliance

In accordance with Section 15073 of the California Environmental Quality Act (CEQA) Guidelines, this Initial Study/Mitigated Negative Declaration (IS/MND) is being circulated to relevant local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on the IS/MND. Lompoc Unified School District (LUSD) circulated the IS/MND to the State Clearinghouse for distribution and a 21-day public review. LUSD will evaluate comments received on the Draft IS/MND and will prepare responses to address any substantial evidence that the Project could have a significant impact on the environment. If there is no substantial evidence, LUSD as lead agency will adopt the IS/MND in compliance with CEQA.

Written comments must be submitted to Dudek (the environmental consultant for LUSD) by 5:00 p.m. on November 17, 2021. Please include "Cabrillo High School Baseball Field Lighting Project" in the subject line. Submit comments to the following:

Dudek
Attention: Jonathan Leech
621 Chapala Street
Santa Barbara, CA 93101
by email at: jleech@dudek.com

This IS/MND and any comments received during the public review process will be considered by the LUSD Board of Education at their regular Board Meeting on December 13, 2021. LUSD Board Meeting details can be found at: https://www.lusd.org/district-administration/board-agenda-and-meetings

1.3 Project Planning Setting

The Project site is situated within an existing baseball field in the southeast portion of the Cabrillo High School campus. Land uses surrounding the Cabrillo High School property are comprised entirely of single-family residences to the north, east, and south of campus; undeveloped open space abuts the campus property on the west and southwest. Vehicular access to the site is provided from Constellation Road. The project site is located within the Vandenberg Village community of unincorporated Santa Barbara County and falls outside the Coastal Zone boundary. The proposed project consists of the addition of lighting for the baseball field; improvements would be located within the extent of the existing baseball field, which consists of flat area created for the baseball field use. Grass within the baseball field area is regularly mowed to accommodate baseball activities.

1.4 Public Review Process

There will be a 21-day public review period for the IS/MND, in accordance with the requirements of Section 15073 of the State CEQA Guidelines. In reviewing the IS/MND, the reviewer should focus on the sufficiency of the document in identifying and analyzing the potential impacts on the environment and ways in which the potentially significant effects of the proposed Project are avoided or lessened. Comment submittal requirements and deadlines are detailed on Section 1.2 above.

In accordance with Section 15074 of the State CEQA Guidelines, prior to approving the proposed project, the LUSD Board of Education (Board) will consider the proposed IS/MND together with any comments received during the public review process. The Board will adopt the proposed IS/MND only if it finds that that there is no substantial evidence that the Project will have a significant effect on the environment.

2.0 Summary of Findings

The project and its implementation would have a less than significant effect on the environment with the implementation of the proposed mitigations.

2.1 Environmental Factors Potentially Affected

Potential impacts to Aesthetic and Visual Resources, Biological Resources and Cultural Resources have been identified for which the prescribed mitigation measures (MM AES-1, AES-2, BIO-1, CUL-1, CUL-2,) will reduce the residual level to less than significant. .

2.2 Environmental Determination

The District finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described herein have been added to the project. A Mitigated Negative Declaration has been prepared.

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3.0 Initial Study Checklist

1. **Project title:**

   Cabrillo High School Baseball Field Lighting

2. **Lead agency name and address:**

   Lompoc Unified School District (LUSD)
   1301 North A Street
   Lompoc, CA 93436

3. **Contact person and phone number:**

   Douglas Sorum, Assistant Superintendent
   (805) 742-3190

4. **Project location:**

   Cabrillo High School
   4350 Constellation Road
   Lompoc, CA 93436

5. **Project sponsor's name and address:**

   Lompoc Unified School District
   1301 North A Street
   Lompoc, CA 93436

6. **General plan designation:**

   Santa Barbara County Comprehensive Plan Land Use Designation: **Educational Facility**

7. **Zoning:**

   Santa Barbara County Zoning: **RR-10** (Residential Ranchette: 10-acre minimum parcel size)

8. **Description of project. (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):**

   The LUSD proposes to improve an existing baseball field at Cabrillo High School with the addition of field lighting. *Figure 3.0-1* illustrates the regional and local setting of the Cabrillo High School campus. The Project involves the installation of pole mounted lighting around the perimeter of the primary (varsity) baseball field to provide illumination for evening use of the field to support baseball practices, league games, and invitational events. A total of eight (8) light poles would be installed, refer to *Figure 3.0-2* for a Site Plan that illustrates the location of the light poles in relation to the existing baseball field.

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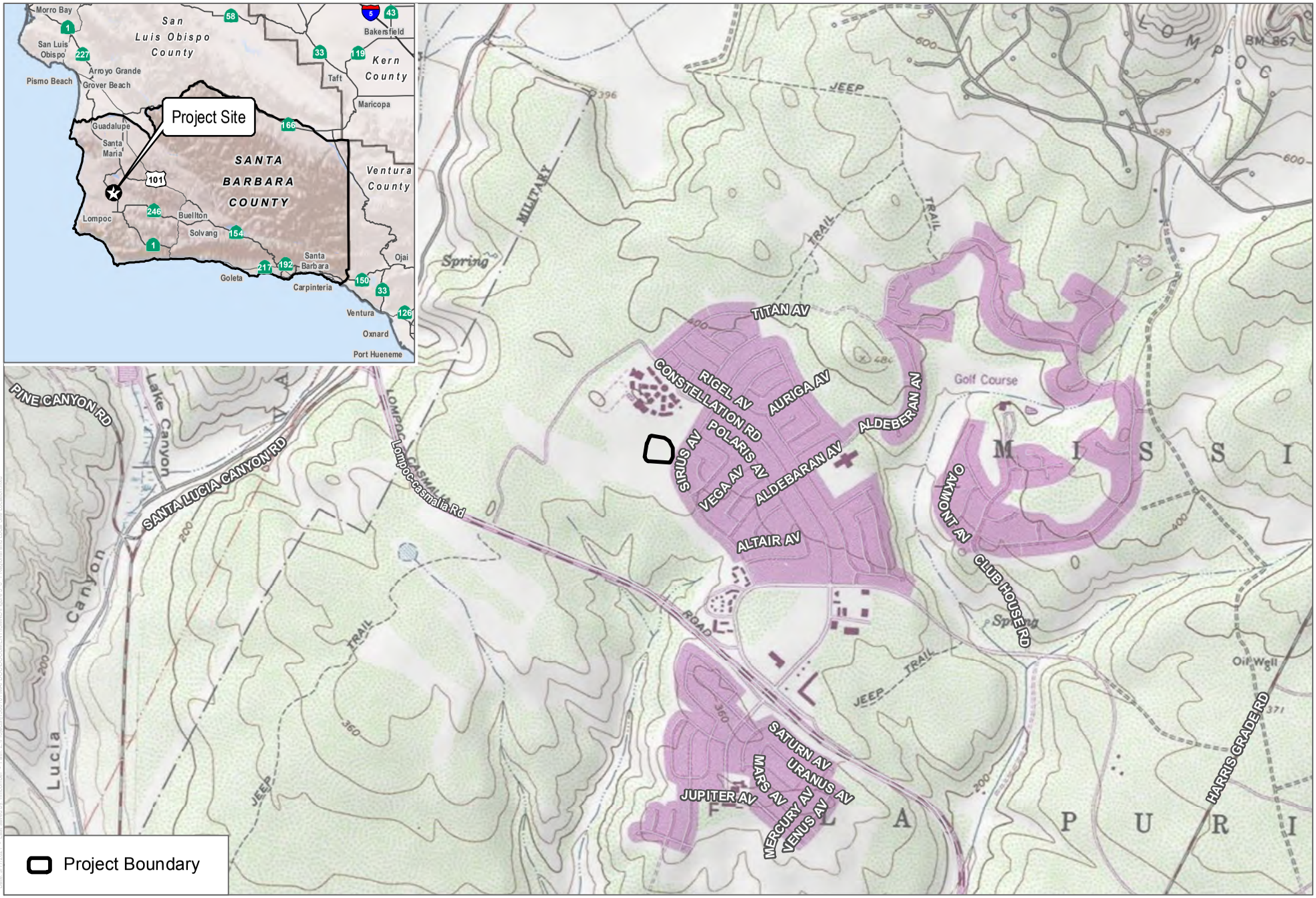

SOURCE: USGS 7.5-Minute Series Lompoc Quadrangle

DUDEK

0 1,000 2,000 Feet

FIGURE 3.0-1

Regional and Local Site Location

Cabrillo High School Baseball Field Lighting

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SOURCE: County of Santa Barbara 2020

DUDEK

0 50 100 Feet

FIGURE 3.0-2

Site Plan

Cabrillo High School Baseball Field Lighting

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Between 6 and 12 individual luminaires (or light fixtures) would be mounted on each of the eight poles. Refer to *Appendix A* for an illustration of a representative configuration of a pole with luminaires as well as design details for each type of luminaire. Trenching would be completed to install wiring between the poles and electrical control panel. Trenching is estimated to include approximately 1,500 linear feet, with a width and depth of not greater than three feet. Following installation of electrical conduit, trenches would be backfilled with native soil and reseeded with grass to match adjacent field area. The California Air Resources Board (CARB) California Emissions Estimator Model (CalEEMod) identifies a default construction period for the scale and nature of the Project, which includes one month for the trenching operation and two months for the pole and wiring installation. These construction schedule durations are considered very conservative but are used in the analysis of construction effects of the Project to ensure potential worst-case conditions are addressed. Once installed, the lighting system would be used primarily for baseball practices that extend beyond dusk and home baseball games scheduled to occur in the evening, with occasional invitational events, civic use events, or tournaments that may occur within or outside of the regular baseball season. Use of the lighting system during such practices, games, and events is not anticipated to extend later than 9 p.m.

9. Surrounding land uses and setting (Briefly describe the project's surroundings):

The Project site consists of the existing baseball field at the southeast corner of the Cabrillo High School campus. A row of single-family residences forms the easterly boundary of the campus, including along the Project site; single-family residences also extend eastward beyond Sirius Avenue, heading away from the campus. To the north of the Project site, tennis courts and basketball courts are immediately adjacent, with the school parking lot and classrooms further to the north, and finally Constellation Road, with residences to the north of Constellation Road. To the west of the Project site are additional athletic fields for baseball, softball, soccer, and football, with natural open space to the west of the campus. South of the Project site are the Vandenberg Village Little League baseball fields (across Albireo Avenue), with natural open space to the south of the Little League complex.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

The Division of State Architect (DSA) has the authority and responsibility to review and approve all development proposed to occur at public education facilities. DSA will review Project design plans for compliance with State building codes before granting approval to LUSD for construction. The Project would not require approval from any public agencies other than DSA.

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

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office

of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

No, California Native American tribes traditionally and culturally affiliated with the project area have not requested consultation with the Lompoc Unified School District pursuant to Public Resources Code section 21080.3.1.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

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

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

Signature

October 25, 2021

Date

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significance

3.1 Aesthetics

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

Regulatory Background

The Open Space and Conservation Elements of the Comprehensive Plan provide goals, policies, and standards related to the natural features, resources, and historic heritage of Santa Barbara County (County of Santa Barbara 2010). The Scenic Highways Element of the Comprehensive Plan presents the goals, evaluation standards, preservation measures, and procedures for obtaining official "scenic highway" designation for state and County roads in Santa Barbara County (County of Santa Barbara 2010). For the purposes of environmental review under CEQA, the County of Santa Barbara Environmental Thresholds and Guidelines Manual (1995) specifies that significant visual impacts of a project are only associated with loss or degradation of public views. Public views are those available from a public property such as roadways or public parks and exclude views from private property such as residences. This criterion for assessment of visual impacts also follows the State CEQA guidelines. The following discussion and analysis is based upon public view resources and project effects upon those resources.

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

No Impact. Scenic vistas are singular vantage points that offer unobstructed views of valued viewsheds, including areas identified as official scenic vistas along major highways or specifically designated visual resources (i.e., a prominent mountain peak, the Pacific Ocean. etc.). No scenic vistas are visible from public roadways bordering the Cabrillo High School campus. Cabrillo High School is bordered by natural open space on the west and south, which does represent a visual resource. However, existing single-family residences obstruct views of the open space from public views east of campus along Sirius Avenue, while

buildings on the Cabrillo High School campus currently obstruct views of the natural open space from the north along Constellation Road. Limited views of natural open space in the immediate vicinity of the Project site (which do not comprise a scenic vista) could be marginally altered with the introduction of the proposed lighting standards, but this addition to the fully developed Cabrillo High School campus would not result in substantial adverse effects on an important scenic vista.

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

No Impact. Currently, there are only two officially designated state scenic highways: (1) State Highway 1 from its intersection with State Highway 101 at Las Cruces north to the southerly city limits of Lompoc, and (2) the entire length of State Highway 154. The Project site is not visible from these scenic highways. There are no designated natural features or historic buildings that would be visually impacted by the Project, as the project improvements would occur entirely within the outfield areas of an existing baseball field at Cabrillo High School.

c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant The proposed Project involves the installation and operation of an exterior lighting system for the existing baseball field at the southeastern corner of the Cabrillo High School Campus. The eight (8) light poles are proposed to be between 70 and 80 feet in height, and therefore the baseball field light poles and luminaires (light fixtures) would be visible from public viewing areas along Sirius Avenue and Constellation Road. In order to determine the change in visual character of the Project site as viewed from these nearby public streets, Dudek assembled visual simulations that accurately depict the appearance of the Project components overlain on the existing perspective views from vantage points located on nearby streets.

Figure 3.1-1 is a key map that illustrates the locations for the two vantage point perspectives generated to illustrate “Existing” and “Project” visual conditions. The location of the vantage point perspective and the direction in which the camera or viewer is facing, are both illustrated in Figure 3.1-1.

Cabrillo High School Baseball Lights Visual Simulations

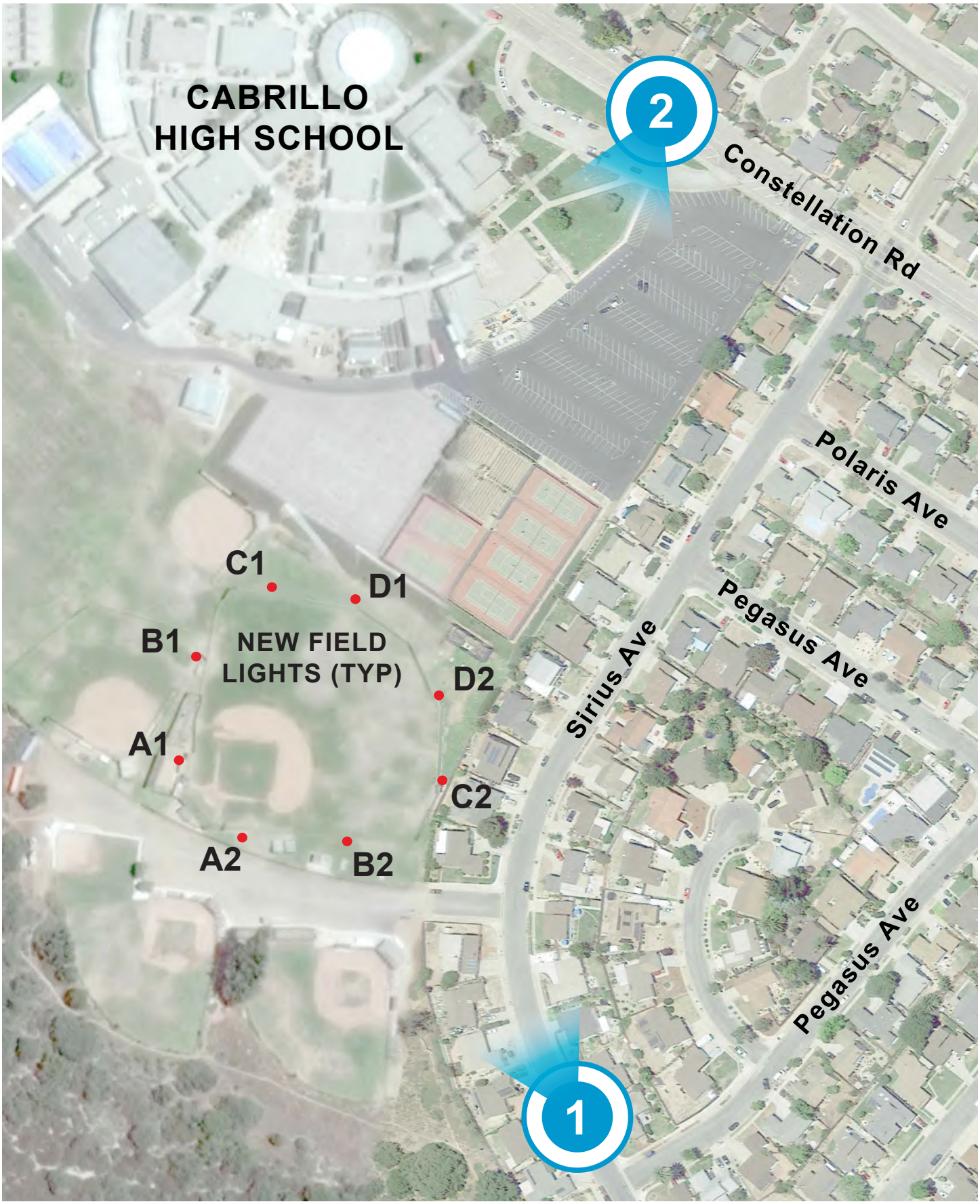

Figure 3.1-1 Key Map

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Vantage Point 1

This vantage point is on Sirius Avenue, approaching the intersection of Albireo Avenue, oriented toward the northwest, and with the location of the Project site (the baseball field) approximately centered in the perspective. Figure 3.1-2 illustrates the existing view and visual conditions from Vantage Point 1 in the direction of the Project site. The single-level residences completely block or obscure the baseball field from this perspective; a streetlight pole and luminaire are visible in the foreground; a second streetlight pole and luminaire are visible in the background. The perspective is dominated by a wide curving street, generous sidewalks, and a row of single-story residences. Some specimen trees are visible but note that there are no "scenic features" visible in the background behind the homes in this perspective.

Figure 3.1-3 illustrates the view and visual conditions from Vantage Point 1 with implementation of the Project. The eight light poles with luminaires are visible in this perspective. However, they would not be a dominant feature in this perspective, the roadway and homes continue to characterize the visual conditions within the views from this Vantage point. While the new light fixtures would be taller than existing streetlights in the area, the distance of the Project light poles from the street reduces their perceived scale to be similar to the streetlights. Again, note that there are no "scenic features" visible in the background behind the homes in this perspective, and therefore the light standards would neither obscure nor negatively affect existing scenic features in the Project vicinity.

Vantage Point 2

This vantage point is on Constellation Road, approaching the intersection of Sirius Avenue, oriented toward the southwest, and with the location of the Project site (the baseball field) approximately centered in the perspective. Figure 3.1-4 illustrates the existing view and visual conditions from Vantage Point 2 in the direction of the Project site. Existing structures and improvements in the foreground and fencing along the northern boundary of school tennis courts in the background, completely obscure the Project site from Vantage Point 2. The perspective is dominated by the aforementioned campus buildings and other improvements, while several specimen oak trees are prominent in the foreground, between the first school buildings and Constellation Road.

Figure 3.1-5 illustrates the view and visual conditions from Vantage Point 2 with implementation of the Project. Portions of five (5) of the light poles and luminaires would be marginally visible from this perspective. However, compared to the buildings and other improvements in the foreground, the light poles and standards would introduce an almost indiscernible change to the view from this perspective. With the distance to the Project light poles from Vantage Point 2, an average viewer would probably not notice the introduction of the new light poles into this view.

Consequently, the installation of the light poles and luminaires as proposed would not substantially degrade the existing visual character of the Cabrillo High School campus, as viewed from the closest public streets. The Project would also not conflict with zoning or regulations for preservation of scenic quality (as discussed above). Impacts to visual character would **be less than significant**.

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Figure 3.1-2 Existing Visual Condition From Vantage Point 1

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Figure 3.1-3 Visual Simulation of Project From Vantage Point 1

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Figure 3.1-4 Existing Visual Condition From Vantage Point 1

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Figure 3.1-5 Visual Simulation of Project From Vantage Point 2

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

Less than Significant With Mitigation Incorporated. The Project consists of the installation and operation of exterior lighting elements at the existing baseball field. Artificial lighting of the field area is proposed to support varsity baseball practices and home games to allow these activities to extend beyond sunset. Baseball practices would not be expected to extend later than 8 p.m., while competitive baseball games are anticipated generally not to extend later than 9 p.m. LUSD hired Musco Sports Lighting to design the baseball field lighting system. Musco has designed lighting systems for all levels of scholastic athletic facilities as well as for professional sports stadiums. Musco's extensive sports lighting experience allows them to develop a customized lighting system for each individual facility that conforms to the constraints posed by surrounding uses, while meeting the illumination performance objectives of the athletic function supported by the system.

Musco specified a total of eight (8) lighting poles, with two poles along each of the four sides of the baseball field. Refer to Appendix A for the lighting design sheets and specifications. Each light pole would support a number of individual luminaires (light fixtures); the luminaires have a solid upper surface (or hood) and lenses that focus or limit the area in which light from the luminaire is cast. The specified luminaires ensure that adequate lighting is available for baseball games on the field, but with strict control of nuisance spill-over light onto adjacent areas outside the baseball field. The Equipment Layout sheet of the Musco design package (Appendix A) includes a diagram with light rays illustrating the focus direction of luminaires on each pole. Note the light poles along the eastern side of the field (behind residences along Sirius Avenue) have luminaires focusing light westward, away from these homes.

Musco prepared a photometric analysis of the illumination that would be produced within the baseball field and adjacent areas. The photometric analysis concluded that the infield would be illuminated with average light intensity levels between 50 and of 67 foot-candles[1]; illumination of outfield areas would have average light intensity levels between 20 and of 45 foot-candles. The light intensity at the ground level along the eastern campus fence-line would range between 0.05 and 9.42 foot candles, while the illumination at the back of homes along Sirius Way immediately adjacent to the baseball field would range between 0.0 and 0.61[2] foot candles. Based upon the Musco design specifications and photometric analysis conclusions, lighting intensity at the periphery of the baseball field, including residential properties abutting the eastern campus boundary, would be maintained at minimal levels due to the incorporation of appropriate shielding in the light fixtures. Illumination of no greater than 0.6 foot candles at the back of neighboring homes would be a very low intensity, not likely to result in annoyance.

However, even though the proposed lighting system would not generate excessive illumination at homes adjacent to the east side of the baseball fields, the luminaries would be visible at night and could interfere with relaxation in the late evening or overnight period. In order to ensure minimization of night-lighting effects, lighting should be extinguished as soon as is practicable following active use of the facility. Incorporation of a lighting operations restriction of this nature would ensure the avoidance of significant impacts from night-lighting of the baseball field.

1 A foot candle is an archaic, but still used, measure of luminance. One foot candle is the illumination provided by a standard candle one foot (0.3048 m) away from the candle flame. The "lumen" is a more modern term, equivalent to a one foot-candle illumination level per square foot of area.

2 A luminance of 0.61 foot candles would be slightly more than half the light level occurring one foot from a standard candle.

Required Mitigation Measures

MM AES-1. Baseball field lighting shall adhere to the design and specifications outlined in the Musco Cabrillo High School Baseball Lighting System (File #202333A) The installed system shall be tested, including measurement of the illumination levels, with adjustments as necessary, to ensure compliance with the lighting design specifications.

MM AES-2 Baseball field lighting fixtures shall be dimmed 15 minutes after the end of each event held at the baseball field and shall be extinguished within 60 minutes after the end of each event, and not later than 10:00 PM.

Plan Requirements: The above requirements shall be shown on all construction plans sent out to bid for the Project. **Timing:** The construction management firm or LUSD Facility Management shall review construction plans to verify incorporation prior to bid award.

Monitoring: The construction management firm or LUSD Facility Management shall review field reports that verify installation complies with the lighting specifications and shall ensure operating manual for the stadium light system includes the restriction regarding the dimming and extinguishment of lighting equipment following events. Cabrillo High School Principal shall respond to complaints regarding use of the lighting system.

Residual Impacts

Implementation of MM AES-1 and MM AES-2 would avoid potentially significant night-lighting impacts from the proposed Improvement Plan project. Residual impacts with mitigation incorporated would be less than significant.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Regulatory Background

The Agricultural Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the preservation and enhancement of agriculture and the agricultural industry within the County (County of Santa Barbara 2010). Likewise, the Conservation Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the conservation, development, and use of natural resources, including water and its hydraulic force, forests, soils, and rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources (County of Santa Barbara 2010).

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

No Impact. No farmland is mapped to exist within the Cabrillo High School campus. Therefore, no potential exists for the Project to result in any conversion of farmland.

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

No Impact. The Cabrillo High School property is zoned "Residential Ranchette" which is not agriculturally focused, nor intended to support commercial agriculture operations. The property is also not enrolled in a Williamson Act Contract. Consequently, the Project would not conflict with agriculture use or zoning.

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

No Impact. No forest land, timberland, or timberland production zoning has been applied to the Cabrillo High School property. Therefore, no potential exists for the Project to conflict with forest-related zoning.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. No forest exists on the Cabrillo High School campus. Therefore, no potential exists for the Project to convert forest land to non-forest use.

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

No Impact. The Project involves the installation of lights within an area of the Cabrillo High School already developed as a baseball field. Therefore, no potential exists for the Project to result in the conversion of agriculture land or forest land to other uses.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Regulatory Background

The project is located within the South Central Coast Air Basin (SCCAB) and is within the jurisdictional boundaries of the SBCAPCD, which has jurisdiction over Santa Barbara County where the project is located. Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include VOCs (also referred to as ROCs), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}), and particulate

matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $PM_{2.5}$). ROCs and NO_x are important because they are precursors to ozone (O_3).

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), which provides guidance that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

In addition, Appendix G of the CEQA Guidelines indicates that where available, the significance criteria established by the applicable air district may be relied upon to determine whether the project would have a significant impact on air quality. The SBCAPCD has prepared criteria and thresholds for determining significance under CEQA. According to the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents* (SBCAPCD 2017), a project would have a significant air quality effect on the environment if operation of the project would:

- Emit (from all project sources, both stationary and mobile) more than the daily trigger for offsets or air quality impact analysis set in the SBCAPCD New Source Review Rule[3], for any pollutant (i.e., 240 pounds per day for ROC or NO_x; and 80 pounds per day for PM_{10});
- Emit 25 pounds per day or more of NO_X or ROC from motor vehicle trips only;
- Cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone);
- Exceed the SBCAPCD health risk public notification thresholds adopted by the SBCAPCD Board for non-cancer risk; and
- Be inconsistent with the latest adopted federal and state air quality plans for Santa Barbara County.

As stated in the SBCAPCD's *Scope and Content of Air Quality Sections in Environmental Documents*, the SBCAPCD does not currently have quantitative thresholds of significance in place for short-term or construction emissions; however, the SBCAPCD uses 25 tons per year for ROC or NO_X as a guideline for determining the significance of construction impacts (SBCAPCD 2017).

Due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with congested intersections are not expected to exceed the CO health-related air quality standards (SBCAPCD 2017). The most stringent ambient air quality standard for CO is the California Ambient Air Quality Standard (CAAQS) at 20 parts per million (ppm) for the 1-hour standard and 9.0 ppm for the 8-hour standard. The Lompoc monitoring station, located at 128 South H Street, is the closest monitoring station to the project site where CO concentrations are measured. The Lompoc monitoring station reported 1-hour concentrations in ppm of 1.1, 1.1, and 2.5 and 8-hour concentrations of 0.9, 0.6, and 0.7 during the 2018–2020 monitoring period, which is the most recent CO data available for the Canon Perdido station (EPA 2021). As such, CO "hot spots" analyses are not required anymore (SBCAPCD 2017).

[3] The SBCAPCD New Source Review Rule as it existed at the time the SBCAPCD Environmental Review Guidelines were adopted in October 1995 (SBCAPCD 2017).

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

A project is non-conforming with an air quality plan if it conflicts with or delays implementation of any applicable attainment or maintenance plan. A project is conforming if it complies with all applicable SBCAPCD rules and regulations, complies with all proposed control measures that are not yet adopted from the applicable plan(s), and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase vehicle miles traveled are also deemed to comply with the applicable air quality plan (SBCAPCD 2017).

Consistency with land use and population forecasts in local and regional plans, including the Clean Air Plan, is required under CEQA for all projects. SBCAPCD further describes consistency with the Clean Air Plan for projects subject to these guidelines, which means that direct and indirect emissions associated with the project are accounted for in the Clean Air Plan's emissions growth assumptions, and the project is consistent with policies adopted in the Clean Air Plan. The 2019 Ozone Plan was adopted by the SBCAPCD Board on December 19, 2019 and is the most recent applicable air quality plan. The 2019 Ozone Plan is the 3-year update required by the state to show how the SBCAPCD plans to meet the state 1-hour and 8-hour O_3 standard (SBCAPCD 2019). On December 12, 2019, the CARB designated Santa Barbara County as attainment for the state O_3 standards.

The Ozone Plan relies primarily on the land use and population projections provided by the Santa Barbara County Association of Governments and CARB on-road emissions forecast as a basis for vehicle emission forecasting. The Santa Barbara County Comprehensive Plan Land Use Designation is Educational Facility, with which the school campus is consistent. The project would not require a change in land use designation as part of the lighting installation.

The project would not conflict with or propose to substantially change existing land use or applicable land use policies as designated in the County's Comprehensive Plan; therefore, the project was included in the 2019 Ozone Plan. Similarly, the project does not have any growth inducing features. As such, the project would not conflict with the applicable air quality plan. Therefore, this impact would be **less than significant**.

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

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SBCAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and ROC off-gassing) and off-site sources (i.e., on-road haul trucks, vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and,

for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

Emissions from the construction phase of the proposed project were estimated using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0 (CAPCOA 2021).

As described in Section 1.1, Project Overview, the proposed Project would install outdoor field lighting at the Cabrillo High School baseball field. For the purposes of modeling, it was assumed that construction of the proposed project would commence in December 2021[4] and would last approximately 3 months, ending in February 2022. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate):

- Utility Trenching – 1 month
- Light Fixture Installation – 2 months

The majority of the phases listed above would occur concurrently and would not occur sequentially in isolation. The estimated construction duration was based upon defaults in CalEEMod for this type and scale of project. Detailed construction equipment modeling assumptions are provided in Appendix B, CalEEMod Emissions Outputs.

The construction equipment mix used for estimating the construction emissions of the proposed project is based on CalEEMod defaults and is shown in Table 3.3-1.

Table 3.3-1. Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Utility Trenching	10	0	0	Tractors/Loaders/ Backhoes	2	8
				Trenchers	2	8
Light Fixture Installation	10	2	0	Cement and Mortar Mixers	2	8
				Cranes	1	4
				Excavators	1	8
				Tractors/Loaders/ Backhoes	2	8

Note: See Appendix B for details.

For the analysis, it was assumed that heavy construction equipment would be operating 5 days per week (22 days per month) during proposed project construction. Construction worker and vendor trips were based on CalEEMod default assumptions and rounded up to the nearest whole number to account for whole round trips.

[4] The analysis assumes a construction start date of December 2021, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

The CalEEMod Version 2020.4.0 was used to estimate emissions from construction of the project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of ROCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The project would be required to comply with SBCAPCD Rule 345 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The project would not involve application of architectural coating (e.g., paint and other finishes) during construction. Table 3.3-2 presents the estimated annual emissions generated during construction of the project. Details of the emission calculations are provided in Appendix B.

Table 3.3-2 Estimated Annual *Construction* Criteria Air Pollutant Emissions

Year	ROC	NOx	CO	SOx	PM10	PM2.5
	Tons per year					
2021	0.01	0.12	0.11	0.00	0.01	0.01
2022	0.02	0.16	0.19	0.00	0.01	0.01
Maximum	*0.02*	*0.16*	*0.19*	*0.00*	*0.01*	*0.01*
SBCAPCD Threshold	*25*	*25*	*25*	*25*	*25*	*25*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROC = reactive organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SBCAPCD = Santa Barbara County Air Pollution Control District.
See Appendix B for complete results.

As shown in Table 3.3-2, the project construction would not exceed SBCAPCD's thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be **less than significant**.

Operational Emissions

The project would not result in activity during operation that would generate criteria air pollutant emissions. The project would have no impact during operation.

Cumulative Emissions Analysis

In considering cumulative emissions impacts associated with proposed developments in the region, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SCCAB is designated as nonattainment for the CAAQS and National Ambient Air Quality Standard (NAAQS). If a project's emissions would exceed SBCAPCD's significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCCAB. If a project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing the project's cumulatively considerable contribution is if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and consistency with SBCAPCD's 2019 Ozone Plan, which addresses cumulative emissions in the SCCAB.

The SCCAB has been designated as a state attainment area for O_3. The attainment status is the result of SBCAPCD control measures for various sources of air pollutants and their precursors within the SCCAB, including motor vehicles, off-road equipment, marine vessels, and commercial and industrial facilities. Construction of the project would generate ROC and NO_x emissions (which are precursors to O_3). As indicated in Table 2, project-generated construction emissions would not exceed SBCAPCD's emission-based significance thresholds for ROC, NO_x, CO, SO_2, PM_{10}, or $PM_{2.5}$. The project would also not exceed the SBCAPCD criteria air pollutant emissions during operations.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative.[5] However, future projects would be subject to CEQA and would require an air quality analysis and, where necessary, mitigation if the project would exceed SBCAPCD's significance thresholds. Criteria air pollutant emissions associated with construction activity of future proposed projects would be reduced through implementation of control measures required by SBCAPCD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SBCAPCD Rule 345, which sets forth general and specific requirements for all construction sites in the SBCAPCD.

Based on the previous considerations, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and cumulative impacts would be **less than significant**.

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

Health Impacts of Toxic Air Contaminants

Less Than Significant. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a TAC. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC. There are existing residences adjacent to the project on Sirius Avenue.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, AB 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations,

[5] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and to comply with CEQA's information disclosure requirements.

combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills.

Project construction would result in emissions of DPM from heavy construction equipment and trucks accessing the site. DPM is characterized as a TAC by the State of California. The OEHHA has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure but has not identified health effects due to short-term exposure to diesel exhaust. According to OEHHA, HRAs, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident (MEIR); however, such assessments should be limited to the period/duration of activities associated with the project. The duration of the proposed construction activities would constitute a small percentage of the total 30-year exposure period. The construction period for the proposed project would be approximately 3 months, after which construction-related TAC emissions would cease. Due to this relatively short period of exposure and minimal particulate emissions on site, TACs generated during construction would not be expected to result in concentrations causing significant health risks.

During operation, the project would not result in emissions of TACs. Therefore, the proposed project would not result in exposure of sensitive receptors in the vicinity of the project site to substantial TAC concentrations due to either construction or operation and impacts would be less than significant.

Health Impacts of Carbon Monoxide

Mobile-source impacts occur on two basic scales of motion. Regionally, project-related travel would add to regional trip generation and increase the VMT within the local airshed and the SCCAB. Locally, project-related traffic would be added to the City's roadway system. If such traffic occurs during periods of poor atmospheric ventilation, consists of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and operates on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in mobile emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCCAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. Due to the relatively low background ambient CO levels in Santa Barbara County, localized CO impacts associated with project traffic alone are not expected to exceed the CO health-related air quality standards. Therefore, CO hotspot analyses are not required anymore (SBCAPCD 2017). Therefore, a CO hotspot analysis is not needed and the proposed project would have a **less than significant** impact.

Health Impacts of Other Criteria Air Pollutants

Construction and operation of the proposed project would not result in emissions that exceed the SBCAPCD's emission thresholds for any criteria air pollutants. Regarding VOCs, some VOCs are associated with motor vehicles and construction equipment, while others are associated with architectural coatings, the emissions of which would not result in the exceedances of the SBCAPCD's thresholds. Generally, the VOCs in architectural coatings are of relatively low toxicity. There are no architectural coatings anticipated for the project during construction or operation; the light standards will be prefabricated at the vendor plant, including application of coatings.

In addition, VOCs and NO_x are precursors to O_3, for which the SCCAB is designated as attainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung

function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O_3 ambient air quality standards tend to occur between April and October when solar radiation is highest.

Regarding NO_2, according to the construction emissions analysis, construction of the proposed project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. Health impacts from exposure to NO_2 and NO_x are associated with respiratory irritation, which may be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, these operations would be relatively short term. Additionally, off-road construction equipment would operate at various portions of the site and would not be concentrated in one portion of the site at any one time. Construction of the proposed project would not require any stationary emission sources that would create substantial, localized NO_x impacts. Therefore, health impacts would be considered **less than significant**.

The VOC and NO_x emissions, as described previously, would minimally contribute to regional O_3 concentrations and its associated health effects. In addition to O_3, NO_x emissions would not contribute to potential exceedances of the NAAQS and CAAQS for NO_2. Thus, it is not expected that the proposed project would result in exceedances of the NO_2 standards or contribute to the associated health effects. CO tends to be a localized impact associated with congested intersections. The associated CO hotspots were discussed previously as a less-than-significant impact. Thus, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant. Likewise, PM_{10} and $PM_{2.5}$ would not contribute to potential exceedances of the NAAQS and CAAQS for particulate matter, would not obstruct the SCCAB from coming into attainment for these pollutants, and would not contribute to significant health effects associated with particulates. Based on the preceding considerations, health impacts associated with criteria air pollutants would be **less than significant**.

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

Less Than Significant. The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be **less than significant**.

Land uses and industrial operations associated with odor complaints include fast food restaurants, bakeries, coffee roasting facilities, agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities (SBCAPCD 2017). The project would not create any new sources of odor during operation. Therefore, project operations would result in an odor impact that is **less than significant**.

3.4 Biological Resources

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

Regulatory Background

The US Fish & Wildlife Service (USFWS) is responsible for protection of wildlife species and the habitat that supports them (including wetlands); the Migratory Bird Treaty Act is enforced by USFWS. The California Department of Fish and Wildlife (CDFW) is responsible for the protection of wildlife species and their habitats, as well as native plant communities, at the State level; CDFW enforces the State Fish and Game Code. The Conservation Element of the Santa Barbara County Comprehensive Plan contains goals, policies, standards, and implementation measures for the conservation of natural resources, including forests, soils, and rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources (County of Santa Barbara 2010).

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

Less than Significant. The Project will take place completely within an existing developed baseball field, that is characterized by lawn turf (which is regularly maintained by mowing) and lacking shrubs, trees, or other native plant species or natural habitat features. The closest specimen trees to the project site are located approximately 115 feet to the south and consist of an isolated windrow of five (5) *Podocarpus Macrophyllus.* The school campus and residential neighborhood exist to the north of the Project site, while a residential neighborhood is immediately adjacent to the eastern boundary of the Project site. To the south and west of the Project site, undeveloped open space is occupied by Burton Mesa chaparral, a local native plant community with distribution limited to one portion of northern Santa Barbara County. Burton Mesa chaparral includes four endemic plant species: two manzanitas (*Arctostaphylos purissima* and *Arctostaphylos rudis)*, Mesa horkelia (*Horkelia cuneata ssp. Puberula*), and Southern curly-leaved dune mint (*Monardella sinuata ssp. Sinuate*). These four plant species are listed as endangered by the CDFW. The Project site is separated from the current boundary of this native plant community by a minimum distance of approximately 150 feet; this area of separation is occupied by a paved road and parking area for two community baseball fields (to the south of the high school campus).

The Project would not encroach into the boundary of the adjacent Burton Mesa chapparal, nor remove any native plant species, nor remove any shrubs or trees. The Project would therefore not have direct or indirect impacts upon sensitive or special-status plants. The mowed lawn area and baseball field do not provide habitat for sensitive or special status wildlife species, and thus no direct impacts are anticipated from the Project upon wildlife. Short-term construction would not be anticipated to affect nesting or roosting bird species in the vicinity, because the baseball fields are regularly maintained by a tractor-mounted mower, which produces noise levels similar to the equipment anticipated for trenching and light pole installation; thus bird species that elect to nest in the area would already be acclimated to similar noise levels from field maintenance activities..

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

No Impact. As described above, the Project site is located within an existing baseball field at the Cabrillo High School campus and no native habitat is present immediate adjacent to the Project. The nearest mapped Environmentally Sensitive Habitat (ESH) is located approximately 150 feet to the southwest, consisting of Burton Mesa Chaparral, and separated from the Project site by a road and parking area. The closest natural water feature is a blue-line creek approximately 1,585 feet to the south of the Project site boundary. Due to the distance from the Project site to native habitat and mapped ESH, no direct or indirect impacts are expected to occur, and no mitigation is proposed.

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

Less than Significant with Mitigation Incorporated. The literature review included a search of federally maintained sources for information regarding the potential presence of aquatic resources, including the

National Wetland Inventory (NWI; USFWS 2021), and the U.S. Geological Survey (USGS) 7.5-minute Lompoc quadrangle map (2018). A formal delineation of jurisdictional aquatic resources was not conducted; however, based on the results of the literature review and Project site walk-over, no hydrologic features potentially regulated by the U.S. Army Corps of Engineers (USACE) acting under Section 404 of the CWA; the Regional Water Quality Control Board (RWQCB) acting under Section 401 of the CWA and the Porter-Cologne Act; the California Department of Fish and Wildlife (CDFW) acting under Sections 1600-1607 of the California Fish and Game Code; and the County *Environmental Thresholds and Guidance* (County of Santa Barbara 2008) are located within the Project site.

Short-term indirect impacts to potential off-site jurisdictional aquatic resources may include accidental pollutant (i.e. sediment) and/or chemical discharge that may enter waterways via stormwater runoff should Project activities take place during the typical rainy season (November 1 through May 31). These short-term indirect impacts may occur during active construction, prior to electrical trench backfilling and re-seeding with grass. Long-term indirect impacts to off-site jurisdictional aquatic resources are not anticipated to occur due to the nature of the Project. Following installation of the light standards and electrical conduit, the excavation will be backfilled and the ground surface will be restored to pre-project conditions (i.e., lawn). No on-going indirect impacts will occur as a result of the Project. Implementation of **MM BIO-1** includes standard construction Best Management Practices (BMPs), which will prevent short-term indirect impacts to adjacent jurisdictional aquatic resources during construction, thus reducing these potential impacts to a level below significance.

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

No Impact. The Project site is situated within a high school campus that lacks the constituent elements of a wildlife corridor or habitat linkage, namely linear or patchy habitat connecting adjacent larger patches of habitat. The school campus is abutted by extensive residential neighborhoods to the north and east; natural open space habitat area exists to the south and west of the school, which is already a continuous corridor that allows wildlife movement around the perimeter of the campus.

Although the Project site is composed of currently developed areas associated with residential development, there is a potential for small, highly mobile species to traverse the Project site and surrounding area. In particular, bird species are anticipated to migrate through the Project site and possibly nest in the adjacent vegetation. The Project site does not serve as a significant wildlife corridor or habitat linkage in this region, and the introduction of eight light standards would not directly block existing travel rotes for smaller wildlife, including birds. Therefore, the Project would not substantially interfere with the movement to wildlife across the region and no direct or indirect impacts to wildlife corridors or habitat linkages is expected.

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

No Impact. Environmentally Sensitive Habitat (ESH) is protected through policies and development standards detailed in the Conservation Element (County of Santa Barbara 2010), which identifies local policies, development standards, and guidelines regulating sensitive biological resources. However, no development standards are directly applicable to the Project. As noted above, the nearest mapped ESH is

located approximately 150-feet to the southwest and is comprised of Burton Mesa chaparral habitat. The project would not encroach into this ESH, nor remove any native vegetation. The project would therefore not conflict with local policies or ordinances protecting biological resources.

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

No Impact. The Project site is not located within the boundaries of a Habitat Conservation Plan (HCP), a Natural Communities Conservation Plan (NCCP) area, or any other natural resources management or conservation plan. Therefore, no direct or indirect impacts would occur.

Required Mitigation Measures

MM BIO-1 **Erosion and Sediment Control Plan.** Best available erosion and sediment control measures shall be implemented and maintained during grading and construction. Best available erosion and sediment control measures may include, but are not limited to use of sediment basins, gravel bags, silt fences, geo-bags or gravel and geotextile fabric berms, erosion control blankets, coir rolls, jute net and straw bales. Construction access points shall be stabilized using gravel beds, rumble plates or other measures to prevent sediment from being tracked onto adjacent roadways. Any sediment or other materials tracked offsite shall be removed the same day as they are tracked using dry cleaning methods.

Plan Requirements and Timing: Erosion and sediment control devices and techniques shall be designed and implemented to address erosion and sediment control during all phases of development of the site**.** Erosion control specifications for the Project shall be included in civil engineering improvement plans submitted to the Division of State Architect (DSA) for review and approval. **Monitoring:** The construction management firm or LUSD facilities management staff shall perform site inspections throughout construction to confirm the designed erosion control methods and techniques are employed.

Residual Impacts

With incorporation of **MM BIO-1**, residual impacts to biological resources resulting from potential soil erosion and sedimentation during construction of the project would be less than significant.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Existing Conditions

Dudek conducted a Phase 1 cultural resources investigation in support of the IS/MND for the proposed project. The cultural resources investigation included a cultural resources site records and literature search at the Central Coast Information Center (CCIC), University of Santa Barbara, California, a review of the California Native American Heritage Commission's (NAHC) Sacred Lands File, background research, and an intensive-level surface survey of the proposed project site.

Background Research

CCIC Records Search

On August 9, 2021, staff at the CCIC provided the results of a California Historical Resources Information System (CHRIS) records search for the proposed project site and a 1-mile radius. The CHRIS records search results provided by the CCIC included their digitized collections of mapped prehistoric and historic archaeological resources and historic built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Dudek reviewed the SCCIC records to determine whether the implementation of the proposed project would have the potential to impact known and unknown cultural resources.

Previously Recorded Cultural Resources

CCIC records indicate that a total of 11 previously recorded cultural resources fall within 1-mile of the proposed project site (Table 3.5-1). Of these, five are prehistoric archaeological sites, two are historic period archaeological sites, one is a historic district, one is a multi-component site consisting both prehistoric and historic period resources, and two are prehistoric isolates. None of these 11 previously recorded cultural resources intersect or overlap the proposed project site.

Table 3.5-1. Previously Recorded Cultural Resources Within 1-Mile of Project Site

CCIC Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Proximity to Proposed Project Site
CA-SBA-001743 (P-42-001743)	Prehistoric site	1982 (Sean O'Halloran); 1986 (K. O'Connell); 2008 (Moratto)	2: Determined eligible	Outside
CA-SBA-001896 (P-42-001896)	Prehistoric site	1984 (R. Gibson, J. Centeno, B. Schuyler); 1986 (Miller, O'Connell)	2: Determined eligible	Outside
CA-SBA-001991 (P-42-001991)	Historic Site	1985 (H. MacFarlane, J. Hudson, URS, 111 E. Micheltorena, Santa Barbara 93101); 1986 (E. Wade, Science Applications International Corp., 121 Gray Avenue, Santa Barbara)	No formal record of evaluation provided within related records.	Outside
CA-SBA-001993 (P-42-001993)	Prehistoric Site	1984 (R. Gibson, J. Centeno, Box 102, Paso Robles); 1985 (J. Hudson; H. MacFarlane, URS, 111 Micheltorena, Santa Barbara 93101); 1986 (J. Miller, K. O'Connell, Science Applications International Corp., 121 Gray Avenue, Santa Barbara)	No formal record of evaluation provided within related records	Outside
CA-SBA-002263 (P-42-002263)	Prehistoric Site	1986 (R. Dugger, J. Miller, URS Consultants. Inc., 1421 Chapal, Santa Barbara, CA 93101)	No formal record of evaluation provided within related records	Outside
CA-SBA-002265 (P-42-002265)	Prehistoric Site	1986 (K. O'Connell, J. Miller, URS Consultants. Inc., 1421 Chapala St. Santa Barbara CA 93101)	No formal record of evaluation provided within related records	Outside

Table 3.5-1. Previously Recorded Cultural Resources Within 1-Mile of Project Site

CCIC Designation	Resource Description	Recorded By	CRHP/NRHP Eligibility	Proximity to Proposed Project Site
CA-SBA-003088 (P-42-003088)	Multicomponent site	1995 (T. Kennedy, Chambers Group, Inc., 16700 Aston Street. P.O. Box 57002. Irvine. CA 92619-7002)	No formal record of evaluation provided within related records	Outside
CA-SBA-003526 (P-42-003526)	Historic Site	1999 (Kevin (Lex) Palmer/Dan Reeves, Archaeology and Architecture Associates, 2126 Castillo St. #5 Santa Barbara, CA 93105)	7: Not Evaluated	Outside
P-42-003865	Historic District	2006 (A. Munns, N. Stevens, Applied EarthWorks, Inc.)	3S: Appears eligible for listing in National Register as a separate property	Outside
P-42-038929	Prehistoric Isolate	2014 (Eric Nocerino, Applied EarthWorks)	No formal record of evaluation provided within related records	Outside
P-42-038930	Prehistoric Isolate	2014 (Eric Nocerino, Applied EarthWorks)	No formal record of evaluation provided within related records	Outside

Previously Conducted Cultural Resource Studies

Results of the cultural resources records search indicated that 34 previous cultural resources studies have been conducted within 1-mile of the proposed project site between 1974 and 2017. Of these, four (4) reports: SR-00343, -00773, -01232, -03103, overlap the proposed Project site. Table 3.5-2, below, summarizes all 34 previous studies within the records search area.

Table 3.5-2. Previous Technical Studies Within a 1-Mile of the Project Site

CCIC Report No.	Authors	Year	Title	Proximity to Proposed Project Site
SL-01645	Larson, D. and Coombs, G.	1987	A Literature Review, Records Search, and Preliminary Background Study for the Proposed Coastal Aqueduct, Kern, San Luis Obispo, and Santa Barbara Counties	Outside
SR-00272	Colten, R.	1983	Archaeological Sensitivity for the Proposed Union Oil Company, Santa Maria Basin Pipeline, Santa Barbara County, California	Outside
SR-00280	O'Halloran, Sean	1984	Phase I Archaeological Survey of a Proposed Union Oil Pipeline and Processing Facility in Northern Santa Barbara County	Outside
SR-00285	Spanne, L.	1977	Archaeological Component of the Cabrillo Oaks Environmental Impact Report, County of Santa Barbara	Outside
SR-00343	Van Horn, David M.	1979	An Overview of Potential Impacts to Cultural Resources Resulting from Proposed Alternative Transmission Lines Serving the LNG Facility at Point Conception, California.	Outside
SR-00773	**Sawyer, W.**	**1988**	**Archaeological Surface Reconnaissance of the 373 Acre Unocal Parcels, Vandenberg Village and Mission Hills, Lompoc, California**	**Overlaps**
SR-00945	Waldron, W.	1988	Negative Archaeological Survey Report: Caltrans Proposal to Widen and Rehabilitate the Pavement on Highway 1 from Vandenburg Road to Constellation Road, 4 miles Northwest of Lompoc in Santa Barbara County, California. PM 23.3/29.9	Outside
SR-00954	Spanne, L.W.	1989	Phase I Archaeological Survey Report for Vandenberg Village Park, Vandenberg Village, CA	Outside
SR-01008	Jermann, Jerry and Woodman, Craig F.	1986	Historic Properties Treatment Program: Union Oil Company of California Platform Irene/Santa Maria Basin project, Onshore Pipeline from Landfall to Orcutt, Northern Santa Barbara County, CA	Outside
SR-01012	Little, A.	1985	Union Oil Project / Exxon Project Shamrock and Central Santa Maria Basin Area Study EIS/EIR	Outside
SR-01216	Spanne, L.	1991	Phase I Archaeological Survey Report for Assessor's Parcel Number 97-310-10, Vandenberg Village, California, County of Santa Barbara	Outside
SR-01232	**Peter, K., Dondero, S., and Woodman, Craig F et al**	**1991**	**Western Chumash Prehistory: Resource Use and Settlement in the Santa Ynez River Valley, Site Summaries and Technical Appendices**	**Overlaps**
SR-01256	Erlandson, J.	1984	A Summary of Phase I Cultural Resource Investigations Conducted in Support of the Proposed Union Oil Santa Maria Basin Pipeline, Santa Barbara County, California	Outside
SR-01965	Spanne, Laurance W.	1997	Phase 1 Archaeological Survey Report for Vandenburg Village-Clubhouse Area Project, Vesting Tentative Map, APN 097-370-08, Lompoc Area, County of Santa Barbara, California	Outside

Table 3.5-2. Previous Technical Studies Within a 1-Mile of the Project Site

CCIC Report No.	Authors	Year	Title	Proximity to Proposed Project Site
SR-02299	Gibson, Robert	1997	Results of Archaeological Subsurface Testing at SBA-1772 and SBA-1773, For the Clubhouse Estates Project, North of the City of Lompoc, Santa Barbara County, CA	Outside
SR-02559	Wlodarski, Robert	2000	A Phase I Archaeological Study, Proposed Water Line Alternatives for the Providence Landing Project, Santa Barbara County, CA	Outside
SR-03103	**Osland, Karen and Schuyler, Betty Jo**	**1993**	**An Archaeological Survey Report for the Draft Burton Mesa Management Plan, Santa Barbara County**	**Overlaps**
SR-03332	Spanne, L.	2004	Phase I Archaeological Survey Report for the Fuelbreaks on the Burton Mesa Ecological Reserve, Vandenberg Village and Mission Hills Vicinity	Outside
SR-03651	Neff, Hector	1982	Final Report, Vandenberg Air Force Base, CA 1982 Fuels Management Program, Cultural Resources Survey/Evaluation	Outside
SR-03653	Spanne, Laurence W.	1974	Archaeological Survey of Vandenberg Air Force Base, Santa Barbara County, California, 1971 to 1973	Outside
SR-03677	Arthur D. Little, Inc.	1985	Union Oil Project/Exxon Project Shamrock and Central Santa Maria Basin Area Study EIS/EIR	Outside
SR-03757	Bergin, K.	1989	The Survey and Inventory of Archaeological Properties for the Backbone Fiber-Optic Transmission System Project, Vandenberg Air Force Base Santa Barbara County, California	Outside
SR-03896	Waldron, Wendy	1988	Caltrans Proposes to Widen and Rehabilitate the Pavement on Highway 1 from Vandenberg Road to Constellation Road	Outside
SR-03915	Charles Hodges, Clayton Lebow, and Rebecca McKim	2000	Final Archaeological Survey of the Azalea and Halloween Wildfire Areas on North Vandenberg Air Force Base Santa Barbara County, California	Outside
SR-03925	Palmer, Kevin (Lex)	2000	Results of an Inventory and Evaluation of Historic Sites, Buildings, and Structures, Vandenberg Air Force Base, California	Outside
SR-03926	Palmer, Kevin (Lex)	1999	Central Coast Continuum--From Ranchos to Rockets: A Historic Overview for an Inventory and Evaluation of Historic Sites, Buildings and Structures, Vandenberg Air Force Base, California	Outside
SR-04024	Singer, Clay	2007	Archaeological Monitoring and Impact Mitigation for the Clubhouse Estates Project at Vandenberg Village, Santa Barbara County, California: Two Dates from CA-SBA-1772 and Data From CA-SBA-3846.	Outside

Table 3.5-2. Previous Technical Studies Within a 1-Mile of the Project Site

CCIC Report No.	Authors	Year	Title	Proximity to Proposed Project Site
SR-04546	Michael J. Moratto, Erin A. Enright, Robert R. Peterson Jr., Leeann G. Haslouer, Clayton G. Lebow, Douglas R. Harro, and Ann M. Munns	2009	Archaeological Investigations in 2008-2009 for the CONS-Firebreaks and Access Roads, Vandenberg Air Force Base, Santa Barbara County, California	Outside
SR-04859	Hatoff, Brian	2010	New Tower ("NT") Submission Packet, Verizon Wireless - Vandenberg Village, 170 Vulcan Dr, Lompoc, CA	Outside
SR-05081	Denardo, Carole, Lang, Jennifer, and McCarthy-Reid, Amy	2007	Final Site Condition Assessment Summaries for Historic Buildings and Structures on VAFB: Sudden Ranch Complex, USCG Lifeboat Station Facility, Marshallia Adobe, and Four Adobe Ruins at Vandenberg Air Force Base	Outside
	Stone, David	2007	Appendix A: Site Condition Assessment Forms	Outside
	Denardo, Carol, Lang, Jennifer, and McCarthy-Reid, Amy	2007	Appendix B: Photographs of Historic Buildings, Structures, and Ruins	Outside
SR-05344	Stone, David and McDaniel, Heather	2016	Extended Phase 1 Archaeological Investigation Oak Hills Estates Project, Vandenberg Village	Outside
	Heather McDaniel, Tny Elowskey, and Andrew Mendoza	2017	Trench Forms, Personal Communication	Outside
SR-05367	David Stone and Heather McDaniel	2016	Archaeological Site Distribution Analysis Oak Hills Estates Project, Vandenberg Village, CA	Outside
SR-05368	David Stone and Heather McDaniel	2015	Oak Hills Estates Residential Project Archaeological Resources Report APN-097-371-010 Vandenberg Village, Santa Barbara County, California	Outside
	Jessika Akmenlalns	2015	Archaeological Records Search Central Coast Information Center University of California, Santa Barbara	Outside
SR-05370	David Stone	2014	Archaeological Resources Assessment Existing Site 3 Road Maintenance Grading Slippery Rock Ranch, Santa Barbara, CA Case No. 13ZEV-00000-00083 and Proposed Land Use Plan APN-153-170-094	Outside
	Julia G. Costello and M. Darcangelo	1999	Primary Record for P-42-002728	Outside

NAHC Sacred Lands File Search

Dudek requested a search of the Sacred Lands File (SLF) on August 9, 2021 to determine the presence of any Native American cultural resources within the proposed project site as listed in the SLF that is maintained by the NAHC. Andrew Green, Cultural Services Analyst, provided the SLF search results on September 2, 2021. The NAHC SLF records search results were negative for known Native American heritage resources within the project site.

Field Survey

An intensive-level archaeological pedestrian surface survey of the proposed project site was completed on September 8, 2021. The survey was conducted utilizing parallel transects, spaced no more than 3 meters apart (approximately 10 feet), where feasible. The proposed project site includes the Cabrillo High School baseball field, located in Vandenberg Village in Lompoc, CA. The ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historical artifacts (e.g., metal, glass, ceramics, building materials). Careful attention was given to barren ground including at the base of trees and bushes, within paths/trails and any subsurface soils exposed by burrowing animals. Ground surface visibility within the proposed project site was variable and as such, in areas of dense ground coverage, surface scrapes were occasionally implemented, when necessary, to enhance detection of archaeological materials that mat have been obscured on the surface.

The proposed project site is actively in use as a baseball field, equipped with a set of concrete dugouts, bleachers, an electronic scoreboard, practice batting cages, dirt baseball diamond, manicured lawn, and the appropriate fences associated with a baseball field. The grass lawn accounted for approximately 80 percent of the proposed project site and provided poor to good ground surface visibility (30 to 70 percent). The baseball diamond accounted for approximately 10 percent of the proposed project site and provided excellent ground surface visibility (100 percent). The structural components (dugouts, bleachers, and batting cages) accounted for approximately 5 percent of the proposed project site and provided zero ground surface visibility (0 percent). Disturbances include consistent use as a recreational baseball field, post hole installation around the perimeter, and a low scatter of modern debris. No cultural resources were observed in situ, or within intact soils, as a result of the survey.

The majority of soils observed throughout the proposed project site appear consistent with the United States Department of Agriculture's description of Marina sand (USDA 2020). Soils within the baseball diamond differ from the remainder of the proposed project site. They consist of red coarse-grain loamy sand consistent with the description of 'infield mix,' a common soil type imported for use in baseball diamonds. No cultural resources or materials were observed during the pedestrian survey.

Prehistoric Context

California has one of the best studied archaeological records in the world, and the Santa Barbara Channel is among the most studied regions of California. The basic regional culture historical patterns (i.e. what life was like at different points in time) have been articulated for many decades, and in spite of the ever increasing intensity of archaeological work in the region, our understanding (or at least our definition) of these general patterns has changed only slightly in part because our understanding of how to distinguish them has been compromised by conflicting data and interpretations; notable exceptions include our understanding of the earliest inhabitants, which keeps getting earlier and better defined (Erlandson et al. 2011; Erlandson, Rick, et al. 2007), and our perspectives on the late prehistoric

evolution of socio-political complexity, which have matured and expanded rapidly since the late 1980s (e.g. Erlandson and Jones 2002; Arnold 2001, 2004).

The cultural history of the Santa Barbara Channel has seen many iterations, and much of our understanding of change through time is based on foundational research by Rogers (1929) and Warren (1968), both of whom conducted substantial primary research on the mainland coast. Higher resolution periodization was later established by King (1990) who used a combination of stylistic change in shell beads and absolute ages from radiocarbon dates. This bead-based chronology dovetails well with a more recent chronology based on lower-resolution changes in human behavior and material culture (Arnold 1992), and this has been further refined with a larger set of absolute age estimates pegged to a background of regional environmental change matched with more accurate radiocarbon calibration (Kennett 2005).[6] Note that the temporal span of each period in the sequence is approximate, and naming conventions for them vary across different authors; the cultural patterns (e.g., subsistence and settlement) and temporal markers (shell bead styles, for example) used to define them, also vary across temporal boundaries by region.

Paleoindian/Paleocoastal Period (The Earliest Inhabitants): 13,000 – 11,000 BP

Though the earliest appearance of people in the New World is a contentious issue with new data generating new ideas every few years about who they were and how they got here, the evidence from the California Bight is relatively straightforward: cultural deposits and human remains from a series of sites on Santa Rosa and San Miguel islands date from 13,000-11,500 years ago and suggest that people at the time were well-adapted to life on the sea but also had connections to people who lived much further east, deep in the American continent (Erlandson et al. 2011). While this isn't the earliest evidence of human activity in the New World (which, at most is somewhere between 16,000 and 15,000 years old, see Williams and Madsen 2020), this early evidence from the West Coast gives credit to the idea that (at least some of) its earliest inhabitants were a marine-adapted people able to move skillfully and quickly between islands and near-shore environments across the southern landmass of the (now submerged) continent of Beringia, down the entire Pacific Coast of North America, and eventually to the southern tip of South America in only a few thousand years (Erlandson, Graham, et al. 2007; Fladmark 1979; Dixon 2001). Though these "Paleocoastal" sites from the islands are the earliest we know of, we may never find evidence for the earliest coastal inhabitants because global, post-glacial rise in sea-level has submerged the shorelines upon which they used to live under as much as 100 m of water (Masters and Aiello 2007; ICF 2013; McLaren et al. 2020). Indeed, sites of this antiquity are unknown on the mainland, though the occasional isolated – and undated – fluted projectile point (for example from Gaviota State Park, CA-SBA-1951) may be suggestive (Erlandson, Cooley, and Carrico 1987).

Early Holocene / Milling Stone Horizon: 11,000 – 5500 BP

Many scholars of North American archaeology separate the Paleoindian / Paleocoastal period from the succeeding Archaic period on the rough (and now debatable) observation that the earlier people were more focused on large game while the later people exploited a broader range of resources and required a different set of tools to do so.

[6] Note that all dates provided herein are rounded and drawn from the literature. We attempt to maintain consistency by using calendar, calibrated, years before present (cal BP) which are essentially the same as saying "years ago." However, most authors prior to the mid-1990s (e.g., Glassow 1996) typically report in uncalibrated radiocarbon years before present, uncorrected for marine reservoir offsets, therefore their cultural chronologies can differ from current age estimates for the same site (or cultural period) by 200 – 1500 years, depending on the age and material dated. This is a general problem for the interpretation of California culture history as even current authors use a mixture of differently reported dates. We've tried to account for this, as much as possible, herein, but it further suggests the need to maintain a large, fully vetted, and corrected radiocarbon database, preferably shared across multiple research teams and authors.

On a continent-wide scale, the Archaic therefore sits in the middle of a trajectory of increasing technological and social intensity, somewhere between big-game hunting and fully-fledged farming; in California, this crude trajectory has little value as farming was never part of the pre-Columbian picture, yet use of the term "Archaic" persists (cf. Meighan 1959). Colloquially, it applies to everything from the Early Holocene to the end of the Middle-Late Period transition (ca. 11,000 – 1000 years ago), distinguished only by the late prehistoric intensification of economy, technology, population, and political complexity (though see Glassow 1992a for a slightly different interpretation). Here, the division between Paleoindian and Early Archaic is somewhat arbitrary, but follows current convention; likewise, we combine the earliest known settlements on the mainland coast in this period with those of the more well-documented Milling Stone Horizon because they exist in many of the same places, show evidence for the intensive use of shellfish, use many of the same tools (albeit in different proportions), and overlap in time.

One of the reasons these sites are so visible, stratified, and well-preserved is they contain the remains of shellfish, leading many to suggest that this early Holocene occupation of the region was heavily oriented towards the intensive and persistent exploitation of marine resources. The material remains (and perhaps adaptations) of these earliest Holocene [7] inhabitants of the mainland occasionally differ however, from their predecessors on the islands, but also from their successors on the mainland. However, some of these early sites also differ from the later coastal (and Coast Range interior) occupants as they do not contain millingstones, which become increasingly common after about 8500 years ago. However, it's important not to overstate the differences, as there are clearly sites dating to the early Holocene where groundstone dominates the formal lithic assemblage, both on the coast (Fitzgerald 2000) and deep into the interior (McGuire 1993). Contemporaneous variability in site types and artifact assemblages may point to variability in mobile foraging strategies or reveal that very different groups exploited an otherwise sparsely inhabited coastal region at slightly different times. These alternatives demand interrogation, as do the relationships between the evidence for human activity on the coast and that of the California interior and the more distant Desert West (Koerper, Langenwalter, and Schroth 1991).

While the emergence of an adaptation tuned to marine resources seems beyond question (particularly if the first people to come to coastal California brought this ability with them from somewhere else), the emergence of a processing technology centered on the use of groundstone slabs and handstones (i.e. the hallmarks of the Milling Stone Horizon) has been the focus of investigation for decades (see Warren 1968; Basgall and True 1985). Like shell middens, grinding tools, especially in high frequencies, are highly visible in the archaeological record and at face value can bias (indeed have biased) interpretation of their relative economic importance (see Nelson and Lippmeier 1993). Recent efforts to understand the highly visible "Milling Stone" sites focus on patterns of groundstone manufacture and use. Following Basgall and True (1985), Hale (2001) analyzed groundstone (millingstones and handstones) and battered stone (scraper planes, cobble tools, etc.) tools from well-known Milling Stone sites across southern California, including CA-SBA-142 (Glen Annie Canyon) on the Santa Barbara mainland, and found that Milling Stone sites were places that people visited repeatedly, over hundreds to thousands of years to conduct similar economic activities, perhaps for only short periods of time. The large numbers of reused or expedient groundstone tools at these sites speak to food processing. Indeed, regular use of milling tools for processing seeds and other plant foods, such as roots and tubers, does not preclude using them to process rodents, reptiles, and other animals (which might be more easily cooked or dried with less costly tools). Costs associated with acquiring and transporting raw materials suitable for milling, and investments in shaping them to accomplish specific tasks may be modest (depending on local geology), but significant enough to suggest they were essential for survival; investing in them would make them available for use in less essential tasks, like pulverizing non-essential foods or pigments, that might otherwise be processed in other ways. Therefore, while millingstones may have been used for many things, their prominence indexes their

[7] Note that the Holocene is set at the end of the Younger Dryas, ca. 11,500 years ago (+/-).

importance to a specific adaptive strategy, and archaeological research should be geared towards understanding that relationship.

Hale (2001) interprets Milling Stone sites as places of seasonal occupation for intensive processing, but not as sedentary villages as Wallace (1955) and others envision. Large, well-used assemblages in single locations (as is typical of the classic Milling Stone identity) result from recurrent seasonal visits to specific locations for food processing over multiple years. The milling equipment in these kinds of sites are typically made from locally abundant stone (encountered either in its raw form or as previously discarded tools). Therefore, analysis of tool shaping and maintenance as well as use-wear reveal much about the nature and intensity of occupation and activity.

Hale (2001) also laments the rarity of other kinds of sites linked both temporally and socioeconomically to those of the Milling Stone period, as they would help to illustrate the full picture of the Archaic in California, and help us to move beyond simple definitions of it as a period marked by economic drudgery imposed by marginalizing climatic regimes (e.g. the Altithermal - see Antevs 1948). Herein lies an important research avenue: assembling well-dated archaeological site data across broad regions to better understand socioeconomic nuance during the Archaic and abandon the site-specific interpretation of the Milling Stone period that is itself an artifact of early archaeological research.

Generally speaking, adaptations attributed to the Archaic (including the Milling Stone phenomenon) involved small groups of people who moved regularly throughout the year to exploit a broad range of resources using a very flexible tool kit that could be made relatively easily or expediently and applied to a wide range of scenarios (Hale 2001; Fitzgerald and Jones 1999; Lantis 1938; Basgall and True 1985). Here, and elsewhere throughout the California Bight and central coast, the full suite of material attributes aligned with the classic Milling Stone horizon is found in a relatively small number of archaeological sites; together with evidence for somewhat different activities at other kinds of sites, presumably within the spatial catchment of annual, or even generational human activity, the Milling Stone pattern reveals a "highly successful strategy of mobility, flexibility, and emphasis on low-risk, moderate-return resources, such as small game, shellfish, and certain plants… (that) seems downright practical" for the environmental and cultural context of the age (Stevens 2013: 54).

The Early Period: 5500 – 2500 BP

The identity of the California "Early Period" in Santa Barbara (in both definition and timing) differs from that of other parts of California. The problem is really about the naming conventions assigned to trends (i.e. the "Periods") in the production and use of shell beads which vary around the state (Bennyhoff and Hughes 1987; Groza 2002; Groza et al. 2011) rather than local conditions or broader patterns of behavior.[8] Instead, here it helps to imagine the shift in quasi-adaptive terms, initially characterized by both Rogers (1929) and Greenwood (1972) as a "Hunting" people or period, marked quite notably by an increase in the abundance of projectile points and a decline in the relative abundance of millingstones. On the central coast, Jones and colleagues (Jones 1992; Jones and Codding 2019; Jones et al. 2007) put the division somewhere between 5500 and 5100 BP, though others (Glassow et al. 2007; Lebow and Moratto 2005) see this transition happening around the northern California Bight at 7500-7000 BP; yet the use of millingstones continues here, and elsewhere in California, into the late Holocene (Erlandson 1997a, 1997b; Sutton, Schneider, and Yohe II 1993).

Beyond the bead-based periodization, temporal distinctions are hazy, as identification of the Early Period as a clear-cut behavioral or cultural shift at a specific point in time is less obvious. In the literature from the mainland of the California Bight, some authors identify change in patterns of settlement, specifically a shift away from a practice of

[8] By contrast, archaeologists in other parts of the state have abandoned this confusion in favor of chronologies based on a broader range of material culture anchored to absolute dates (Rosenthal 2011; Rosenthal et al., 2007) Either way, these names and boundaries are all somewhat arbitrary, imprecise, and/or artificial.

relocating the entire residential settlement multiple times throughout the year (i.e. a "residentially mobile" pattern), to a pattern the entails moving the residential base only a few times a year (i.e. a "logistically mobile" pattern). For example, Glassow (1990, 1996) saw this shift happening at approximately 8500 years ago for the broader region (prior to the dates he uses for the end of the Milling Stone Horizon) while research from the far northern end of the California Bight puts this shift much later, at approximately 3000 years ago (Lebow et al. 2006). Unfortunately, the differences in interpretation make it difficult to identify or define temporal periods for the region on the basis of cultural behavior alone.

Use of milling equipment persists through this period, though the form and variety of the manos and metates change (Gamble and King 1997), while mortars and pestles were "added to the milling repertoire" around 6000 years ago (Glassow et al. 2007:197). Whether any of these things point to a change in diet is still an open question. Importantly, mortars are costly to make and signal an investment in processing technology much greater than the use of millingstones (Hale 2001, 2010). Such an investment was likely made to increase processing efficiency of pulpy nut meat such as acorns (Hale 2009). Glassow (1997) suggests that they could have been used to process bulrush and other estuarine resources, though millingstones would have offered similar efficiency in processing such things. It is certain, however, that the addition of mortars marks a socioeconomic shift that placed emphasis on intensive resource extraction and/or processing beyond that which could be accomplished using a basined millingstone. Perhaps this is the economic shift that identifies the onset of the Early Period. The extent to which this change in economy reflects change in the density and distribution of subsistence resources as a function of regional environmental change at the end of the Mid-Holocene warm period, or "Altithermal" (Glassow 1997; Rick and Glassow 1999; Glassow, Wilcoxon, and Erlandson 1988), along with a decline in marine productivity associated with warming sea-surface temperatures (Kennett et al. 2007) is an important but unresolved issue.

A broad range of evidence regarding subsistence diversification, increasing sedentism, status differentiation, ritual activity, rock art, and population growth have all been marshalled to suggest that the second half of this interval (after 4000 years ago, or what Lebow and Moratto call the "Late Early Period") contains some of the earliest evidence for the evolution of cultural complexity in the region (Glassow et al. 2007; Erlandson 2002), though dramatic, fundamental change did not happen until the end of the Middle Period and into the Late Period.

The Middle Period: 2500 – 800 BP

Glassow (1996: 22) suggests that the defining feature of this period is the elevated importance of fish and marine mammals in the subsistence budget. Appearance of the single-piece shell fishhook around 2900 BP, along with increasing importance of notched stone sinkers corroborate this and may have been essential to the intensification of the marine-based economy on the mainland as well as on the islands (Rick et al. 2002; Erlandson 1997b). Indeed, intertidal resources (namely shellfish) remained important to everyone living within walking distance of the coast. And though it seems clear that people in some places acquired more of their protein from large terrestrial and marine mammals during the Middle Period than did people in earlier periods (Lebow et al. 2007) shellfish was still the dominant source of protein throughout the region (Glassow 1992).

During this time, the old groundstone food processing slabs of the early and middle Holocene are mostly absent throughout the region, while mortars become more common, and with increasing effort invested in their production (Glassow 1996; Hale 2009). Whether or not this shift from millingstones to mortars points to the rising importance of the acorn to the subsistence economy, as it is thought to do elsewhere in California (Hale 2010; Basgall 1987), is a question that demands further attention. Answering it depends, in part, on establishing a solid understanding of the distribution of different kinds of oak trees in different parts of the region. For example, oak trees are rare, or entirely absent from the landscape within about 10 km of the coastline throughout the northern end of the California

Bight (see Glassow 1996: 6). Where oak trees were scarce, mortars were either used for processing other things, or acorns were transported from considerable distance – a pattern well documented from other parts of California (Morgan 2007).

Land use patterns observed to the northwest, in the Vandenberg region (Lebow et al. 2006), suggest that these changes in resource use were accompanied by a shift in settlement patterns: though the shift to a logistical pattern of residence began around 3000 years ago, it was fully in place throughout the Middle Period. If the patterns observed from the compilation of radiocarbon dates, both from Vandenberg (Lebow et al. 2010; Lebow et al. 2011) and the surrounding region (Glassow 1996) can be used to evaluate change in human population, then the Middle Period is the first episode of measurable and sustained demographic increase in the history of the region, increasing noticeably approximately 2800-1800 years ago, and then dramatically after that. Thereafter, life across the Channel on the Islands starts to change markedly: the number of settlements starts to increase and people start to live in those settlements for longer periods of time while commanding more rigid territories and controlling the natural resources within them; at the same time, the incidence of inter-personal violence increases while human health and stature start to decline (Kennett 2005; Lambert and Walker 1991; Lambert 1997, 2002; Walker 1989). Together, these things mark the beginning of a trend that continues into the Late Period where it intensifies dramatically. The extent to which these patterns obtained on the mainland and the adjacent interior, or how people in any given area were affected by the dramatic change on the Islands, are open questions.

The Late Period: 800 B.P. – European colonization (ca. A.D. 1780)

For most of this periodization, the exact starting and ending dates are mostly inconsequential, but the Late Period is different, in part because the bead-based chronology is more precise, the archaeological record is better preserved, change in that record is more pronounced, and because change in the cultural record seems to match dramatic change in well-dated, high-resolution paleo-environmental archives from the Santa Barbara Basin that are also reflected in written records from other parts of the world (Kennett and Kennett 2000; Kennett 2005; Raab and Larson 1997; Jones and Kennett 1999; Arnold, Colten, and Pletka 1997). Setting it at 800 B.P. follows King's (1990) bead-based chronology and includes the period of dramatic environmental change (ca. 800-650 BP) along with its purported role in rapid Late Period cultural change. However, one could easily define this cultural period by everything that happens after that environmental change, as Arnold (1992) does, or alternatively by putting it at 1300 BP – the beginning of Lebow and Moratto's (2005) Late Middle Period – by which time many of the material hallmarks of Late Period cultural complexity (the sewn-plank canoe, the bow and arrow, exotic raw materials, intensive fishing, standardized *Olivella* shell beads, status differentiation, skeletal evidence for interpersonal violence, stable primary villages) were all in place, and the pace of cultural change began to increase (Kennett 2005).

Hale (2010) argues that the rate-limiting factors on cultural evolution are socioeconomic, rather than techno-environmental. Therefore, the archaeological signatures of culture change (namely, the types and uses of artifacts, including food remains) that appear to be more rapid during the Late Period are more important when viewed in the light of major socioeconomic shifts, rather than seeing them simply as a rapid accumulation of variability. More to the point, a time-limited strategy would actively resist change while an energy-limited strategy would actively pursue it, and would accumulate material representation in the archaeological record accordingly simply through technological improvements to make tools more efficient or specialized, and in specialized subsistence (Bettinger 1999). The causal relationship between the archaeologically visible increase in material diversity over shorter periods of time, and socioeconomic strategy (i.e. time- or energy-limited) on the one hand, or demographic increase on the other, merits further investigation throughout the region (particularly at sites with rich artifact assemblages).

Since the mid-1980s an enormous body of literature has accumulated on the origins of cultural, social, and political complexity in the Santa Barbara Channel. Much of this has been dedicated to the Late Period and most of that has been done on the Islands. The archaeology of this is spectacular, and dovetails dramatically with the written accounts of European explorers, Mission colonists, and 20th century ethnographers. In addition to basic archaeological reconnaissance, there has been focused attention on understanding subsistence (e.g. Bernard 2004; Martin and Popper 2001), the context of shell bead money production (Arnold and Munns 1994), the production of tools (i.e. microlithic drills) used to manufacture that money (Arnold 1987, 2001), the differential access to exotic goods (Arnold and Graesch 2001), the presence of trade centers (Arnold 2001; Gamble 2008), the production and control of sea-worthy watercraft (Gamble 2002; Arnold 1995), and established patterns of exchange (Arnold 1995; Fauvelle 2011).

By 650 BP the full suite of attributes that early European chroniclers noticed of the Chumash were in place on the Islands: sedentary villages of permanent semi-subterranean architecture, high dietary diversity that also included prestige items like pelagic fish, a monetized market economy, specialized craft production, inter-village and island-mainland exchange networks, political control of natural resources, numerous forms of personal adornment, and an unequal distribution of wealth. Presumably, these things also index the social order documented of the Chumash, including elite offices, formal religious systems, hereditary power and prestige (i.e. the "Dynasty of Nobility"), a ranked social order, institutional inequality, and chiefly control (e.g. Blackburn 1976; Gamble 2008; Harrington 1942; Hollimon 2004; Johnson 1988).

Historic Context

The historic occupation of the project vicinity can be divided into three settlement periods: the Mission Period (A.D. 1769–1830), the Rancho Period (ca. A.D. 1830–1865), and the American Period (ca. A.D. 1865–1915). The earliest European exploration of California was by sea approximately one generation following the Spanish conquest of the Indigenous groups in what is now Mexico. In 1542, ships under the command of former conquistador Juan Rodríguez Cabrillo explored the coast perhaps as far north as Mendocino. The expedition spent time ashore on the mainland and islands of the Santa Barbara Channel, long enough to record various attributes of Chumash social and political life, and noted that the region along the mainland coast from approximately Point Mugu to Point Conception was heavily populated. That said, the Cabrillo expedition only report going ashore here to visit settlements at *Pueblo de las Canoas* (interpreted variously as either Ventura, Mugu, or Malibu Lagoon), *Pueblo de las Sardinas* (perhaps at Mission Creek near downtown Santa Barbara), and *Xexo* (likely Cojo Anchorage at Point Concepcion). Inhabitants from these settlements, as well as those from Dos Pueblos, Goleta Lagoon, and perhaps Carpinteria likely paddled out to encounter, and board, the European sailing vessels (Gamble 2008; McDaniel McDevitt 2013; Johnson 1982; Rindge 1985; Heizer 1972; Wagner 1928). The Cabrillo expedition also anchored and landed at various points on the islands, including on their return trip south, where Juan Rodríguez Cabrillo died under conflicting accounts, perhaps on San Miguel Island (Heizer 1972).

Spanish ships engaged in the Manila Galleon trade regularly sailed south along the California coast beginning in 1565. This resulted in a least two known instances of contact with indigenous groups in California. One instance occurred when Pedro de Unamuno entered Morro Bay in 1587 and traveled inland perhaps as far as what is now the city of San Luis Obispo and made claim to the land in the name of the King of Spain. Later, Sebastian Cermeño visited San Luis Obispo Bay in 1595 in a small boat following the loss of his ship further north at Point Reyes (Greenwood 1978). These voyages did little to strengthen the Spanish presence in the remote province of Alta California. In 1602, Sebastián Vizcaíno sailed north through the Santa Barbara channel long enough to grant one of the islands (and therefore the region) the name "Santa Barbara." While in the region the expedition encountered several Chumash who had come out by canoe to greet and inspect them (Wagner 1929). Vizcaíno's cosmographer,

Jerónimo Martín Palacios, may have paid a return visit to the mainland long enough to comment on the size of the settlements and the quality of its natural resources, though this remains uncertain (Brown 1967).

Spanish Mission Period (A.D. 1786–1834)

Following the earliest boat-based exploratory visits to the Santa Barbara Channel, and the subsequent, irregular, and largely undocumented contacts through the Manila Galleon trade, the Spanish Period in the California Bight began with the A.D. 1769 overland expedition led by Captain Gaspar de Portolá in an effort to establish a system of missions and fortifications in Alta California. The goal of the Portolá expedition was to establish a mission in Monterey, the second mission in Alta California following the mission in San Diego, and to reconnoiter the region for colonization.

Diaries from the Portolá expedition provide the most detailed accounts of the mainland around Santa Barbara, where they made elaborate descriptions of Chumash generosity, ceremony, performance, cuisine, village size, population, and even politics (Bolton 1967; Priestley 1937; Smith and Teggart 1909; Teggart 1909). Notably, the village names recorded by the Portolá expedition did not match those recorded by Cabrillo 227 years earlier, perhaps revealing something about the long term stability and tenure of village locations in the area, possibly associated (at least during the protohistoric era) with shifting socioeconomic interests and political allegiances (C.D. King 1978; Johnson 1982).

On their journey north, the Portolá expedition camped near the mouth of the Santa Ynez River on August of 1769. Local lore contends that members of the expedition provided the river with its current name, though the Crespí diaries suggest otherwise (Bolton 1927). Expedition members extolled the suitability of the valley for irrigated agriculture and remarked effusively on the generosity and hospitality of the local inhabitants. At a lagoon along what is most likely San Antonio Creek, the expedition stayed in what must have been a temporary settlement (for there were no houses), and observed for the first time, choreography that involved women. Thusly, one of the names they applied to the place was, *El Baile de las Indias* (Bolton 1927: 179). For the most part however, the Portolá expedition only observed the western end of the Santa Ynez Valley, and therefore made little mention of the abundant settlements recorded by later Spanish chroniclers.

With the establishment of Mission San Luis Obispo (1772), Mission San Buenaventura (1782), the Presidio of Santa Barbara (1782), and later Mission Santa Barbara (1786), Mission La Purísima (1787), and Mission Santa Ynéz (1804), life changed profoundly for the Indigenous inhabitants of the region. The root cause of change was Spanish religious and political hegemony brought by the Franciscan missionaries and enforcement of their assumed authority by the Spanish military. Religious conversion, adoption of farming and ranching practices, forced labor, capital and corporal punishment, virulent exotic disease, and intermarriage with other groups also contributed to the rapid dissipation or modification of many aspects of traditional tribal culture. The effect of the early Spanish Period on the Native population was dramatic. By 1805, the vast majority of pre-existing Chumash villages had been abandoned as their inhabitants either relocated to the Mission districts to assimilate with communities there, or moved further inland to the periphery of traditional Chumash territory and beyond (McLendon and Johnson 1999; Byrd and DeArmond 2018; Byrd, DeArmond, and Engbring 2018).

By the time the Spanish started to establish missions along the Santa Ynez River, prominent Chumash villages (or rancherias) near the Project Area included *Saqsiyol* (Sacciol), *Soxtonokmu'* (Sotonocmu), *Xonxon'ata* (Jonjonata), *Lompo'* (Lompoc), *Shipuk* (Sipuc), *Sh'ahuchu* (Sajuchu), *Kalawashaq'* (Calahuasa), *Teqepsh* (Tequeps). Of these, *Soxtonokmu'* was the largest, and likely served as a regional center or "capitol" (Johnson 1988: 119). A little further

east, up the Santa Ynez River, *Kalawashaq'* was the second largest at the time, and may have also been a regional center (C.D. King 1975).

Mission records pertaining to the baptisms and marriages of the people who came from these settlements reveal the importance of the connections between the Santa Ynez Valley, the Gaviota Coast, and the Channels Islands. For example, the people of *Soxtonokmu'* were deeply connected to people at both *Qasil* (at Refugio Beach), as well as to Santa Cruz Island. Indeed, Fernando Librado (a Chumash scholar who had grown up in Ventura, had lived in Lompoc, and had family connections to the Islands), noted that the settlement of *Shawa* (meaning "stranger") on the southwest coast of Santa Cruz Island near Morse Point was occupied by a group of people originally from *Qasil*. Eventually, the people *Shawa* eventually returned to the mainland to establish the town of *Soxtonokmu'* north of the Santa Ynez River (McLendon and Johnson 1999; Johnson 1982). In a similar vein, mission records reveal that many people from *Kalawashaq'* (east of the Santa Ynez mission) regularly intermarried with people from *Qasil*, and there is also evidence of chiefly connections between them (Johnson 1988:285).

The extent to which the armed Chumash resistance of 1824, and the subsequent response by both Spanish and Chumash (Sandos 1985) affected the lifeways, residences, and genealogical histories of people originally tied to the villages of Santa Ynez Valley and the Santa Barbara coast is an ongoing and important avenue of research, perhaps answerable only through a combination of documentary records, oral history, and thoughtful, ongoing consultation and collaboration (Ranch 2012). That the initial conflict began at Mission Santa Ynéz, but also involved La Purísima and Santa Barbara, descendants of families from *Soxtonokmu' Kalawashaq', Teqepsh,* and *Xonxon'ata* (along with many others) were almost certainly involved or affected. One has to wonder if any people from these communities were part of the large group of refuges known to have fled across the mountains, and beyond the *tulare*s of the Central Valley, to establish a new community at Walker Pass, on the Sierra Crest at the western extent of the Mojave Desert (see Sandos 1985).

Rancho Period (ca. A.D. 1830–1865)

In August of 1833, the Mexican government secularized all mission lands equaling approximately one million acres per mission. Secularization of lands and a focus on cattle raising marked the Rancho Period, where large land grants of mission lands were ceded to wealthy, prominent Spanish families and to retired soldiers as an incentive to remain in the area and promote continued Spanish influence. Although Native Americans were no longer within the Mission System, they continued to work as laborers on the same lands that had transitioned to ranchos. The established ranchos within the Project area included Rancho los Alamos, Rancho la Purisima and Rancho Todos Santos y San Antonio and were primarily devoted to cattle and sheep raising. The end of the Mexican War of Independence in 1822 marked the end of 300 years of Spanish colonial influence. Although cattle had been primarily raised for hides and tallow, the end of Mexican control in the 1840s changed the affluence of rancheros in California. The shift of cattle use from byproducts to a main source of food was ushered in by the demand of tens of thousands of miners and other settlers to California in search of prosperity in the new state. However, this prosperity was short-lived due to ownership disputes and the extended droughts of the 1860s.

American Period (ca. A.D. 1865–1915).

With California statehood in 1850 and the advent of the American Period, farming and more intensive land uses steadily replaced cattle stock raising. The Project site is surrounded by Los Alamos to the north; Buelton to the southeast; Lompoc to the southwest and Vandenberg Space Force Base, formerly Camp Cooke, to the west.

Settlement in what would become Los Alamos began in 1839 when Jose Antonio de la Guerra was granted a Spanish land grant of 43,000 acres named Rancho Los Alamos. This land was eventually patented by the US government in 1872 and a portion of the land, now occupied by Los Alamos, was sold to Thomas Bell, a banker from San Francisco, for himself and his son, John Bell. By 1874, the stagecoach route was moved to run right through Bell's land and he began to establish a town with a stable, restaurants, a hotel and parceled land for purchase by prospective settlers. In 1882, the Pacific Coast Railway transformed the town into a shipping hub for agriculture, but when the railway was extended to Los Olivos, the influence of Los Alamos in the area steadily diminished (Contreras 1921).

Lompoc began as a temperance colony established in 1874 with a purchase of 43,000 acres by the Lompoc Land Company; the City of Lompoc was incorporated in 1874. The town also served as an agricultural shipping hub but it wasn't until 1901 when the railroad running from Los Angeles to San Francisco added an extension to Lompoc that growth increased greatly. In 1941, Camp Cooke was established as a training base for the US Army and would eventually be renamed and repurposed as Vandenberg Air Force Base (Lompoc, City of 2021).

Buellton was established in 1920, but began with its namesake, the Buell Ranch, in 1875. R.T. Buell was a settler from the east coast in 1853 and was drawn by the promise of prosperity from the California gold rush. Although Buell would travel to California to me a miner, he returned to his roots of farming and established a dairy in Monterey County. R.T. would soon be joined by his brother Alonzo and together they would purchase approximately 26,000 acres of land in the 1860s. The professional relationship between the two brothers would be dissolved and R.T. became well-known for dairy farming and eventually establish a general store, a post office, bunkhouses, blacksmith shop and family homes. Buellton eventually became a mecca for Danish settlers in the turn of the 20th century who came to farm and start local businesses (Lotz 2021).

The Lompoc Oil Field was discovered in 1903 in the Purisima Hills only two years after the Orcutt Oil Field. The California oil boom began in the late 19th century and by 1903 California lead the US in oil production. With the success of oil production in the Los Angeles basin, oil companies began to travel up the coast prospecting for oil. The Lompoc Oil Field began producing in 1903 and would not hit its peak of production until 1951. The oil boom and population growth in the region are directly correlated, Lompoc particularly experienced growth exponentially as a result of the oil industry.

Regulatory Background

State

California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR, enumerated as follows, were developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated as follows. According to Public Resources Code (PRC), Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity" and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.
(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history.

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

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

California Environmental Quality Act

The following California Environmental Quality Act (CEQA) statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

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

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

PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.

PRC Section 21074(a) defines "tribal cultural resources."

PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant

archaeological sites because it maintains the relationship between artifacts and the archaeological context and may help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5(b)). If a site is listed or eligible for listing in the CRHR, included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(c)), it is an "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of an historical resource is materially impaired when a project does any of the following (14 CCR 15064.5(b)(2)):

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

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

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

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a)–(c)). Impacts on non-unique archaeological resources are generally not considered significant environmental impacts (PRC Section 21083.2(a); 14 CCR 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as a tribal cultural resource (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed in PRC Section 5097.98.

California Health and Safety Code Section 7050.5

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

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Less-than-Significant Impact. As part of the Phase I cultural resources investigation conducted for the proposed project (Confidential Appendix C), Dudek reviewed the CHRIS records search results provided by the CCIC for the proposed project site and a 1-mile radius on August 29, 2021. Dudek reviewed the CCIC records to determine whether the implementation of the proposed project would have the potential to impact known and unknown cultural resources. In addition, a pedestrian survey of the proposed project site was conducted on September 8, 2021. No historical resources were identified within the proposed project site or immediate vicinity as a result of the CHRIS records search or intensive pedestrian survey. Moreover, there are no buildings or structures within the proposed project site that are considered to be historical resources for the purposes of CEQA. As such, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 and impacts would be less than significant. No Mitigation measures required

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

Less than Significant with Mitigation Incorporated. As part of the Phase I cultural resources investigation conducted for the proposed project (Confidential Appendix X), Dudek reviewed the CHRIS records search results provided by the CCIC for the proposed project site and a 1-mile radius on August 29, 2021. Dudek reviewed the CCIC records to determine whether the implementation of the proposed project would have the potential to impact known and unknown cultural resources. In addition, a pedestrian survey of the proposed project site was conducted on September 8, 2021. No cultural resources were identified within the proposed project site or immediate vicinity as a result of the CHRIS records search or intensive pedestrian survey and 11 cultural resources were identified within 1-mile radius of the proposed Project site the closest located approximately 900 meters (approximately 2952 feet) northeast from the proposed Project site. Additionally, 34 cultural resource investigations have been conducted within 1-mile of the proposed Project site at least three (3) of which address portions of the proposed Project site and several address the immediately surrounding area. Considering the lack of general archaeological sensitivity, the fact that portions of and the areas surrounding the proposed Project site have been studied with negative results, that the proposed project site has been subject to considerable ground disturbance and that the

proposed disturbances are minimal, the potential for inadvertently encountering cultural resources during ground disturbing activities is unlikely. However, there is always potential for inadvertently encountering unknown cultural resources and in the event a cultural resource is encountered, impacts to the resource may be significant. Therefore, **MM CUL-1** and **MM CUL-2** should be implemented to reduce potential impacts to unanticipated archaeological resources, thus reducing these potential impacts to a level below significance.

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

Less-than-Significant Impact. No prehistoric or historic burials were identified within the proposed project site as a result of the CHRIS records search, NAHC SLF search, or pedestrian survey. In the event that human remains are inadvertently encountered during construction activities, such resources would be treated in accordance with state and local regulations that provide requirements with regard to the accidental discovery of human remains, including California Health and Safety Code Section 7050.5, California Public Resources Code Section 5097.98, and the California Code of Regulations Section 15064.5(e). In accordance with these regulations, if human remains are found, the County Coroner must be immediately notified of the discovery. No further excavation or disturbance of the project site or any nearby area reasonably suspected to overlie adjacent remains can occur until the County Coroner has determined, within two working days of notification of the discovery, if the remains are potentially human in origin. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she is required to notify the NAHC within 24 hours. The NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant must then complete their inspection within 48 hours of being granted access to the site. The most likely descendant would then determine, in consultation with the property owner, the disposition of the human remains. Compliance with these regulations would ensure that impacts to human remains resulting from the proposed project would be less than significant.

Required Mitigation Measures

MM CUL-1: WEAP Training: All construction personnel and monitors who are not trained archaeologists shall be briefed regarding inadvertent discoveries prior to the start of construction activities. A basic presentation and handout or pamphlet shall be prepared, by a qualified archaeologist meeting the Secretary of Interior's Standards, in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness Program (WEAP) training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.

Plan Requirements and Timing: Prior to commencement of project construction, LUSD shall contract with a County-qualified archaeologist to prepare materials and deliver WEAP training to construction workers engaged in trenching and light pole foundation excavation; the requirement for WEAP training shall be included on grading or civil improvement plan sheets. The WEAP training shall be completed before ground disturbing activities begin. Monitoring: The construction management firm or LUSD facilities management staff will verify workers receive the WEAP training prior to construction start.

MM CUL 2: Inadvertent Discoveries/Spot Monitoring: A qualified archaeologist, meeting the Secretary of Interior's Standards, shall be retained and on-call to conduct spot monitoring and respond to and address any inadvertent discoveries identified during ground disturbing activities whether within disturbed, imported or native soils. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material. The archaeological monitor shall be responsible for maintaining daily monitoring logs for those days monitoring occurs.

In the event that potential prehistoric or historic-era archaeological resources (sites, features, or artifacts) are exposed during construction activities for the project, all construction work occurring within 50 feet of the find shall immediately stop and a qualified archaeologist must be notified immediately to assess the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under the California Environmental Quality Act, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work (e.g., preparation of an archaeological treatment plan, testing, or data recovery) may be warranted. If Native American resources are discovered or are suspected, each of the consulting tribes for the Project will be notified and as dictated by California Health and Safety Code Section 7050.5, PRC Section 5097.98, and the California Code of Regulations (CCR) Section 15064.5(e).

If monitoring is conducted, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance and submitted to the Lompoc Unified School District for review. This report shall document compliance with approved mitigation, document the monitoring efforts, and include an appendix with daily monitoring logs. The final report shall be submitted to the Central Coast Information Center and interested consulting tribes.

Plan Requirements and Timing: Prior to commencement of construction, LUSD shall contract with a County-qualified archaeologist and Native American observer to monitor initial ground disturbance activities in accordance with the above criteria. **Monitoring:** The contracted archaeologist and Native American observer shall provide monitoring of initial ground disturbance activities in accordance with the above criteria, assembling field documentation describing each day of monitoring, construction activity occurring during the monitoring, and observed soil profile conditions related to the potential for presence of archaeological resources.

Residual Impacts

Implementation of **MM CUL-1** and **MM CUL-2** would reduce potential impacts pertaining to the inadvertent discovery of archaeological resources to a **less than significant level.**

3.6 Energy

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Energy – Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Regulatory Background

The Energy Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures to encourage energy efficiency and alternative energies in Santa Barbara County (County of Santa Barbara 2009).

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

The short-term construction and long-term operation of the proposed project will require the consumption of energy resources in several forms at the project site and within the project area. Construction and operational energy consumption are evaluated in detail below.

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside any temporary construction trailers would be provided by Southern California Edison (SCE). The electricity used for such activities would be temporary and would have a negligible contribution to the project's overall energy consumption. **No impact** would occur.

Operational Use

Project operation would require electricity for powering the lighting. It was assumed that the project would conservatively operate up to 5 hours per day, 365 days per year. The project has an anticipated load of up to 52.88 kilowatts (kW). The lighting would thus consume approximately 96,506 kilowatt hours per year (kWh/yr) of electricity (Appendix B). For comparison, non-residential electricity demand for Santa Barbara County in 2019 was 1,989 million kWh (CEC 2021). The proposed project would result in a negligible increase in electricity consumption. Impacts related to operational electricity use would therefore be **less than significant.**

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the proposed project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the "petroleum" subsection. Any minor amounts of natural gas that may be consumed as a result of project construction would have a negligible contribution to the project's overall energy consumption. **No impact** would occur.

Operational Use

Natural gas would not be consumed during project operation. As such, **no impacts** related to operational natural gas use would occur.

Petroleum

Construction Use

Heavy-duty construction equipment associated with construction activities would rely on diesel fuel, as would haul and vendor trucks involved in delivery of materials to the project site. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered light-duty vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. Appendix B lists the assumed equipment usage for each phase of construction. Fuel consumption from construction equipment was estimated by converting the total carbon dioxide (CO_2) emissions from each construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2021). The estimated diesel fuel usage from construction equipment is shown in Table 3.6-1, Construction Equipment Diesel Demand.

Table 3.6-1. Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	Kg CO_2/Gallon	Gallons
Utility Trenching	4	12.53	10.21	1,227.24
Light Fixture Installation	6	27.58	10.21	2,701.15
			Total	**3,928.38**

Sources: Pieces of equipment and equipment CO_2 (Appendix C); kg CO_2/Gallon (The Climate Registry 2021).
Notes: CO_2 = carbon dioxide; MT = metric ton; kg = kilogram.

Fuel estimates for total worker and vendor truck fuel consumption are provided in Table 3.6-2, Construction Worker and Vendor Truck Petroleum Demand.

Table 3.6-2. Construction Worker and Vendor Truck Petroleum Demand

Phase	Trips	Vehicle MT CO_2	Kg CO_2/Gallon	Gallons
Worker Vehicles (Gasoline)				
Utility Trenching	220	0.55	8.78	62.60
Light Fixture Installation	410	0.99	8.78	113.25
			Total	**175.84**
Vendor Trucks (Diesel)				
Utility Trenching	44	0.42	10.21	41.52
Light Fixture Installation	0	0.00	10.21	0.00
			Total	**41.52**

Sources: Trips and vehicle CO_2 (Appendix C); kg CO_2/Gallon (The Climate Registry 2021).
Notes: MT = metric ton; CO_2 = carbon dioxide; kg = kilogram.

In summary, construction of the project is conservatively anticipated to consume approximately 176 gallons of gasoline and 3,970 gallons of diesel over a period of approximately 3 months. For comparison, approximately 5.2 billion gallons of petroleum will likely be consumed in California over the course of the proposed project's construction phase, based on the California daily petroleum consumption estimate of approximately 78.6 million gallons per day (EIA 2017). Overall, because petroleum use during construction would be temporary, and would not be wasteful or inefficient, impacts would be **less than significant**.

Operational Use

The project would not result in additional trips or petroleum use during operation. No impacts would occur.

In summary, although the project would increase energy use, the use would be a small fraction of the statewide use and due to efficiency increases, is expected to diminish over time (particularly with respect to petroleum). Given these considerations, energy consumption associated with the project would not be considered inefficient or wasteful and would result in a **less than significant** impact.

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

Less than Significant. The proposed project would be subject to state regulations for energy efficiency, namely, California's Building Energy Efficiency Standards and CALGreen, both of which are set forth in the California Code of Regulations, Title 24. California's Building Energy Efficiency Standards were established in 1978 and serve to enhance and regulate California's building standards. These standards include regulations for residential and nonresidential buildings constructed in California to reduce energy demand and consumption. The Building Energy Efficiency Standards are updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The 2019 standards became effective on January 1, 2020. The proposed project would meet Building Energy Efficiency Standards and CALGreen standards to reduce energy demand and increase energy efficiency.

At a regional level, the proposed project would be subject to the policies set forth in SBCAG's 2040 RTP/SCS. The RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Central Coast California region pursuant to Senate Bill (SB) 375. In addition to demonstrating the region's ability to attain and exceed the GHG emission-reduction

targets set forth by CARB, the 2040 RTP/SCS outlines a series of actions and strategies for integrating the transportation network with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. Thus, successful implementation of the 2040 RTP/SCS would result in more complete communities with a variety of transportation and housing choices, while reducing automobile use. With regard to individual developments, such as the project, the strategies and policies set forth in the 2040 RTP/SCS include improved energy efficiency. The 2040 RTP/SCS goal is to actively encourage and create incentives for energy efficiency, where possible. The proposed project would be consistent with the SBCAG 2040 RTP/SCS.

The proposed project would follow applicable energy standards and regulations during construction. In addition, the proposed project would be built and operated in accordance with all existing, applicable regulations at the time of construction. As such, the proposed project would not conflict with existing energy standards and regulations.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Regulatory Background

The California Department of Conservation, California Geologic Survey, is responsible for mapping the distribution of geologic resources in the State, including earthquake faults, geologic units, and soils. The CGS implements the requirements of the Alquist-Priolo Earthquake Fault Zoning Act, among other state regulations. Locally, the Seismic Safety and Safety Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the avoidance of risks associated with geologic-related hazards within the County (County of Santa Barbara 2010). Likewise, the Conservation Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the conservation, development, and use of natural resources, including soils (County of Santa Barbara 2010).

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impacts. Surface fault rupture occurs when movement on a fault deep within the earth breaks through the surface. Fault rupture can cause structural damage and safety risks on and near the rupture. Fault rupture beneath a light pole could cause failure of the pole foundation, fault rupture across buried electrical lines could interrupt electrical service to the lighting system; either of these failures could present safety hazards for people in the area (e.g., falling light standards or exposure to electrical wires).

The "Alquist-Priolo Earthquake Fault Zoning Act" is a state law that requires the identification of earthquake faults with the greatest potential for damage, and also regulates development projects near active faults to mitigate the hazard of surface fault rupture. The proposed Project alignment is not located within an Alquist-Priolo fault zone, meaning that the state has not mapped any surface traces of active faults along the alignment (CGS 2021). In addition, no known faults traverse the Project site. As such, the risk of fault rupture within the proposed Project is considered low. Furthermore, the Project would not directly or indirectly cause or exacerbate existing fault rupture risks from the construction of the proposed improvements on the Project site. As a result, no impacts related to surface rupture of a known earthquake fault would occur and no mitigation is required.

ii) Strong seismic ground shaking?

Less than Significant Impact. The Project is located in a seismically active region that is known for its many active faults and historic seismicity. The Lompoc Terrace Fault is located approximately 6 miles to the southwest of the Project (Santa Barbara County 2010). Ground shaking from this fault and others throughout the region resulting from an earthquake could impact the proposed Project. The degree of ground shaking that is felt at a given site depends on the distance from the earthquake source (epicenter), the magnitude of the earthquake, the type of subsurface material on which the site is situated, and topography. Ground shaking could result in severe damage to the proposed light standards if they are subjected to strong horizontal movement that exceeds the design standards, which in turn could result in failure and collapse of the light standards. However, the proposed Project would be constructed in accordance with the California Building Code, which would minimize the potential for seismically induced damage to the lighting standards. In addition, Project construction and operation would not increase or exacerbate the potential for strong seismic ground shaking to occur. Therefore, the Project would not directly or indirectly cause potential adverse effects involving seismically induced ground shaking and impacts would be **less than significant**.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Seismic-related ground failure can include hazards such as liquefaction, earthquake-induced landslides, and seismically induced settlement (landslides are addressed below in Section 3.7(a)(iv)). According to both the California Geological Survey (CGS 2021) and the County of Santa Barbara Seismic Safety and Safety Element Liquefaction Map, the Project site is located within a zone of low liquefaction (County of Santa Barbara 2010). In the event of liquefaction beneath the light standards, the standards could collapse, resulting in property damage or a safety risk to users of the baseball field. Nevertheless, the Project would be constructed in compliance with earthquake resistance standards, as required by the California Building Code. With appropriate design precautions, the potential for liquefaction, seismically induced settlement, or other seismic-related ground failure to adversely affect the new water main would be minimized. Furthermore, the Project would not increase or exacerbate the potential for seismic-related ground failure to occur. Therefore, the proposed Project would not directly or indirectly cause potential adverse effects involving seismically induced ground failure and impacts would be **less than significant.**

iv) Landslides?

Less than Significant Impact. The Project site is characterized by flat terrain, as it has been developed as a baseball field. According to both the California Geological Survey (CGS 2021) and the County of Santa Barbara Seismic Safety and Safety Element Slope Failure Hazard Zones, the Project site is located in a region with a low potential for landslides (County of Santa Barbara 2010). Additionally, the proposed improvements would be accomplished on flat ground, away from any hillslopes. As such, grading and excavation required for the proposed Project would not likely increase or exacerbate the potential for landslides to occur. Therefore, the Project would not directly or indirectly cause potential adverse effects involving landslides and impacts would be **less than significant**.

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

Less than Significant with Mitigation Incorporated. The proposed Project would be located within previously developed or disturbed areas, consisting of planted turf for the baseball outfields. Construction activities including minor excavation for light standard foundations and open trenching for electrical conduit would produce exposed soils that could be susceptible to erosion as a result of rain, windy conditions, and/or construction vehicles traveling over exposed soils. As such, implementation of **MM BIO-1** would include standard construction BMPs, which would reduce soil erosion and loss during construction, and would reduce these potential impacts to a less than significant level. Following completion of backfill, the area would be replanted with grass and no soil erosion would occur thereafter. As a result, the proposed Project impacts would be considered **less than significant with mitigation incorporated**.

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

Less than Significant Impact. As previously discussed, the Project is within a zone of low liquefaction potential and is not located within an area susceptible to landslides. In addition, according to the County of Santa Barbara Seismic Safety and Safety Element (2010), the project site has low potential for the occurrence of compressible/collapsible soils. Lastly, the proposed improvements would be constructed in compliance with the California Building Code, which includes provisions that mandate structural foundations on compacted, competent soils, as well as measures to prevent soil collapse of saturated sediments (e.g., temporary shoring). With incorporation of standard building practices in accordance with the California Building Code, impacts would be **less than significant**.

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

Less than Significant Impact. According to the County of Santa Barbara Seismic Safety and Safety Element (2010), the project site has low potential for the presence of expansive soils. In addition, the proposed improvements would be constructed to comply with the California Building Code, which includes provisions that mandate structural foundations on competent soils. With incorporation of standard building practices in accordance with the California Building Code, impacts would be **less than significant.**

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

No Impact. No septic tanks or alternative wastewater disposal systems are proposed. Therefore, no impact associated with the use of such systems would occur.

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

No Impact. No unique paleontological resource or site or unique geologic feature is anticipated to be directly or indirectly destroyed as a result of proposed ground disturbances. Ground disturbance activities proposed for this project do not extend into soils below modern alluvial deposits, which are too young to produce significant paleontological resources. Therefore, no impact to a unique paleontological resource or site or unique geologic feature would occur.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Regulatory Background

GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include CO_2, CH_4, nitrous oxide (N_2O), O_3, and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California. Average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO2 equivalent (CO2e). The CO2e for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons (MT) of CO2e = (MT of a GHG) × (GWP of the GHG). CalEEMod assumes that the GWP for CH4 is 25, which means that emissions of 1 MT of CH4 are equivalent to emissions of 25 MT of CO2, and the GWP for N20 is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

The significance criteria used to evaluate the project's GHG emissions impacts are based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this GHG emissions analysis, the project would have a significant environmental impact if it would (14 CCR 15000 et seq.):

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

As stated in CEQA Guidelines Section 15064.4(b)(1)-(3),

> a lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment: (1) the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether project emissions exceed a threshold of significance that the lead agency determines applies to the project; and, (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions.

Section 15064(h)(3) of the CEQA Guidelines also states that

> [a] lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific quantitative thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009).

The OPR Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review* states that

> public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact. (OPR 2008)

Furthermore, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice."

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established quantitative thresholds for assessing whether the GHG emissions of a project, such as the project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated on a project-level under CEQA.

As the LUSD has not adopted a significance threshold for GHGs or a qualified GHG reduction plan, the County of Santa Barbara has adopted an interim screening threshold of 300 MT CO_2e per year for non-industrial projects for which the County is lead agency or a responsible agency in their *Environmental Thresholds and Guidelines Manual* (County of Santa Barbara 2021). As such, this screening threshold is applied to the project to determine significance.

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

Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor and haul trucks, and worker vehicles. Additionally, the construction GHG emissions are shown annualized over 30 years. Therefore, the total construction GHG emissions were calculated, amortized over 30 years, added to the operational emissions, and then compared to the County operational GHG significance threshold of 300 MT CO_2e per year.

CalEEMod was used to estimate GHG emissions during construction as described in Section 3.3. Construction of the project is anticipated to last up to 3 months. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (haul trucks, vendor trucks, and worker vehicles). Table 3.8-1 presents construction GHG emissions for the project from on-site and off-site emission sources.

Table 3.8-1 Estimated Annual Construction Greenhouse Gas Emissions

	CO2	CH4	N2O	CO2e
Year	Metric Tons			
2021	13.50	0.00	0.00	13.63
2022	28.57	0.01	0.00	28.80
			Total	42.43
			Annualized emissions over 30 years (metric tons per year)	*1.41*

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
Construction emissions were annualized over 30 years.
See Appendix B for complete results.

As shown in Table 3.8-1, the estimated total GHG emissions during construction of the project would be approximately 42 MT CO_2e. Estimated project-generated construction emissions amortized over 30 years would be approximately 1 MT CO_2e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is determined by adding the amortized construction emissions to the operational emissions and comparing them to the operational threshold.

Operational Emissions

CalEEMod was used to estimate potential project-generated operational GHG emissions from energy sources (electricity) from operating the lighting. It was conservatively assumed that the lights would operate up to 5 hours per day, 365 days per year. Operational year 2022 was assumed as the first full year of operation. Table 3.8-2 presents the GHG emissions of the project during operation.

Table 3.8-2 Estimated Annual Operation Plus Amortized Construction Greenhouse Gas Emissions

Emissions Source	CO2	CH4	N2O	CO2e
	Metric Tons per Year			
Energy	17.11	0.00	0.00	17.20
			Amortized construction emissions	1.41
			Total	**18.61**
			County Threshold	*300*
			Threshold Exceeded?	No

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; County = Santa Barbara County.
See Appendix B for complete results.

As shown in Table 3.8-2, the estimated total GHG emissions during operation of the project would be approximately 19 MT CO_2e, including amortized construction emissions. The project would not exceed the County threshold of 300 MT CO_2e per year. Projects below this significance criterion have a minimal contribution to global emissions and are considered to have less-than-significant impacts. Therefore, operational impacts associated with directly or indirectly generating a significant quantity of GHG emissions would be **less than significant**.

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

The County Board of Supervisors adopted the ECAP in 2015 as the County's GHG emission reduction plan. The County has been implementing the ECAP since 2016 but is not projected to meet the plan's 2020 GHG emission reduction goals, according to the 2016 GHG Emissions Inventory Update and Forecast and the 2017 ECAP Progress Report. The final ECAP progress report will be released in 2021, using data through 2020. Until the 2030 CAP is adopted, the County considered projects or plans that have emissions below interim thresholds to be consistent with County GHG emission reduction plans. The interim thresholds are part of the County's GHG emissions reduction strategy and were informed by the County's 2030 target. The interim thresholds provide a pathway for projects and plans to show compliance with County goals. State GHG Reduction Plans, Policies, and Regulations The Board's 2030 GHG emission reduction goal (50% reduction from 2007 levels by the year 2030) is consistent with the state's direction under Senate Bill 32 as codified in the California Health and Safety Code, Division 25.5, Part 4, Section 38566 (40% reduction below 1990 levels by 2030). CARB's 2017 Scoping Plan (CARB 2017) describes the state's strategy for achieving California's 2030 GHG emission reduction target. The 2017 Scoping Plan does not prescribe or require specific actions by local government agencies; rather, the Scoping Plan provides guidance to local agencies and CARB supports programs that assist local agencies. Local government efforts to reduce emissions within their jurisdiction are critical to achieving the state's long term GHG goals, and can also provide important co-benefits, such as improved air quality, local economic benefits, more sustainable communities, and an improved quality of life. CARB recommends statewide targets of no more than 6 MT CO_2e per capita by 2030, and no more than 2 MT CO_2e per capita by 2050. The statewide per capita targets account for all emissions sectors in the state, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer-term state emissions reduction goal of 80% below 1990 levels by 2050. This limit represents California's and these other governments' recognition of their "fair share" to reduce GHG emissions to the scientifically based levels to limit global warming below 2°C.

CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the state's sustainable development objectives and develop plans to achieve the local goals. The County's interim GHG emission efficiency threshold is considerably lower than the state's 2030 per capita target. Therefore, analysts can apply the County's interim threshold with confidence that it aids the state in achieving its target, as well. As shown, the emissions would be less than the County's bright-line threshold of 300 MT CO_2e per year. Therefore, the project would have a **less than significant** impact.

3.9 Hazards and Hazardous Materials

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

Regulatory Background

The Hazardous Waste Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the proper handling, storage, and disposal of hazardous wastes, as well as the remediation of contaminated properties within the County (County of Santa Barbara 2009). Likewise, the Santa Barbara County Multi-jurisdictional Hazard Mitigation Plan (County of Santa Barbara 2017) contains goals, policies, standards, and implementation measures for the management of hazards and response to disasters and other emergencies.

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

No Impact. The project does not include any transportation, use or disposal of hazardous materials.

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

No Impact. The Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment because the Project would only involve the installation and operation of lighting fixtures.

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

No Impact. The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school because the Project would only involve the installation and operation of lighting fixtures.

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

No Impact. The Project is not located on a site included on a list of hazardous materials sites compiled pursuant to California Government Code, Section 65962.5.

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

No Impact. According to the Lompoc Airport Land Use Compatibility Plan (SBCAG 2019), Cabrillo High School is located outside of each of the Safety Zones established for the Lompoc Airport. The Project site is also located outside the boundary of the 60 dB CNEL contour for the Lompoc Airport (SBCAG 2019). As such, the Project would not have the potential to create an airport-related safety hazard, nor to expose persons to elevated noise levels from airport operations.

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

No Impact. The Project consists of the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus; no off-site improvements, construction or physical alterations are proposed, and the lighting standards would not be located within an area of the campus that supports vehicle access. The Project would therefore not have the potential to impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

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

No Impact. The Project consists of the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. The light poles would be constructed of steel, which is not combustible. The baseball field area is planted in grass, which is periodically mowed, therefore minimizing fire risk. The addition of lighting to the existing baseball field would not introduce new student or resident population to the vicinity. Therefore, the Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Regulatory Background

The Conservation Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the conservation, development, and use of natural resources, including water and its hydraulic force, forests, soils, and rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources (County of Santa Barbara 2010).

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

Less than Significant with Mitigation Incorporated. The Project does not propose any activities that would result in direct impacts to water quality. However, construction of the Project would result in temporary ground-disturbing activities that have the potential to indirectly impact water quality in off-site waterways. An unnamed blue-line creek (USGS 2018) is located approximately 0.3 miles to the south of the project site, which is tributary to the Santa Ynez River (2.6 miles to the south). As noted in the Biological Resources section above, short-term indirect impacts to potential off-site jurisdictional aquatic resources may include accidental pollutant (i.e. sediment) and/or chemical discharge that may enter waterways via stormwater runoff should Project activities take place during the typical rainy season (November 1 through May 31). These short-term indirect impacts may occur during active construction, prior to backfilling and replanting of grass turf. Long-term indirect impacts to off-site jurisdictional aquatic resources are not anticipated to occur due to the nature of the Project. Following installation of the light standards and buried electrical conduit, the excavation will be backfilled, and the ground surface will be restored to pre-project conditions. No on-going indirect impacts will occur as a result of the Project. Implementation of **MM BIO-1** includes standard construction BMPs, which will prevent short-term indirect impacts to adjacent jurisdictional aquatic resources during construction, would reduce these potential impacts to a level below significance.

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

No Impact. The Project would not involve changes to groundwater supplies. No groundwater removal is proposed and the amount of new impervious surface (associated with eight light standard foundations) will be negligible as a result of the Project implementation. As such, there would be no impact.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site?

Less than Significant with Mitigation Incorporated. As noted above, temporary ground-disturbing activities have the potential to result in erosion and siltation that may indirectly impact water quality in off-site waterways including an unnamed blue-line creek that is tributary to the Santa Ynez River (USGS 2018). Following completion of the ground-disturbance, the existing grass turf groundcover will be replaced and no long-term impacts due to erosion and siltation would occur as a result of the Project. Implementation of **MM BIO-1** includes standard construction BMPs, which will prevent erosion and siltation off-site, reducing these potential impacts to a level below significance.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

No Impact. The Project would result in temporary ground disturbance but no alterations to the local topography and only negligible changes in total impervious surfaces would occur from Project implementation. There would be no alteration to the existing drainage pattern of the site, including the course of a stream or river. Moreover, there would also be no substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on or off site.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. The Project would result in only temporary ground-disturbing activities and negligible changes in total impervious surfaces (associated with eight light standard foundations; therefore, there would be no appreciable creation or contribution to runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff..

iv) Impede or redirect flood flows?

No Impact. The Project is not located within a Federal Emergency Management Agency (FEMA) flood zone (FEMA 2021) and is located approximately 1,575 feet from the closest natural waterway (an unnamed blue-line creek which is tributary to the Santa Ynez River). The Project does not propose any alterations that would alter floodwaters; therefore, there would be no impediments or redirection of flood flows as a result of the Project.

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

No Impact. As noted above, the Project is not located within a Federal Emergency Management Agency (FEMA) flood zone (FEMA 2019) and there is no known tsunami inundation or seiche zone hazard within or in the immediate vicinity of the Project area (California Department of Conservation 2009). Therefore, there is no risk of pollutant release as a result of Project inundation.

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

Less than Significant with Mitigation Incorporated. The Water Quality Control Plan for the Central Coastal Basin (Basin Plan) lists the various beneficial uses associated with each waterway, describes the water quality that must be maintained to allow those uses, includes an implementation plan that describes the programs, plans, and actions necessary to achieve the standards established in the plan, and describes statewide and regional surveillance and monitoring programs (CCRWQCB 2019). Based on the distance from the Project to the closest waterway (an unnamed blue-line creek not individually identified in the Basin Plan), the temporary nature of the impacts, and with the implementation of **MM BIO-1**, the Project would not obstruct the implementation of the Basin Plan. Additionally, the Project would have no effect on groundwater and would in no way conflict with or obstruct any sustainable groundwater management plan.

3.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

a) Would the project physically divide an established community?

No Impact. The Project would install outdoor lighting within an existing baseball field on the Cabrillo High School campus. The installation of the proposed lighting would have no potential to divide an established community.

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

No Impact. The Project would install outdoor lighting within an existing baseball field on the Cabrillo High School campus. The installation of the proposed lighting in relation to an athletic field at an existing public high school designated under the comprehensive plan land use element as "Education Facility" would not conflict with any land use plan, policy, or regulation.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Regulatory Background

The Conservation Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the conservation, development, and use of natural resources, including water and its hydraulic force, forests, soils, and rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources (County of Santa Barbara 2009).

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

No impact. According to the California Department of Conservation, California Geologic Survey, there are no mapped mineral resource zones (MRZ) of state importance within or adjacent to the Cabrillo High School (CDC 2021). The Project would therefore not result in the loss of availability of a known mineral resource that would be of value to the region or to the residents of the state.

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

No impact. According to the Santa Barbara County Comprehensive Plan Conservation Element, there are no mapped mineral resources within or adjacent to the Cabrillo High School (County of Santa Barbara 2009). The Project would therefore not result in the loss of availability of a known mineral resource recovery site.

3.13 Noise

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

Environmental Setting / Regulatory Background

Noise Characteristics

Pressure fluctuations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 20,000 Hz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is used for typical environmental sound levels which de-emphasizes the low frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is also often referred to as the "noise level" and is referenced in units of dBA (refer to *Attachment A* for definitions of acoustical terms). Table 3.13-1 provides examples of A-weighted noise levels from common sound sources.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically noticed by the human ear (Caltrans 2013). Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA increase is readily noticeable. The human ear perceives a 10 dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

Table 3.13-1 Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
—	110	Rock band
Jet flyover at 1,000 feet	100	—
Gas lawn mower at 3 feet	90	—
Diesel truck at 50 feet, at 50 mph	80	Food blender at 3 feet Garbage disposal at 3 feet
Noisy urban area, daytime gas lawn mower at 100 feet	70	Vacuum cleaner at 10 feet
Commercial area Heavy traffic at 300 feet	60	Normal speech at 3 feet
Quiet urban daytime	50	Large business office Dishwasher, next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural night time	20	Bedroom at night, concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.
Notes: mph = miles per hour

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. The equivalent noise level L_{eq}, also referred to as the average sound level, is a single-number representing the fluctuating sound level in decibels (dB) over a specified period of time. It is a sound-energy average of the fluctuating level and is equal to a constant unchanging sound of that dB level. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver.

Vibration Characteristics

In contrast to airborne noise, groundborne vibration is not a common environmental problem. Some common sources of groundborne vibration are construction activities such as blasting, pile driving, and operating heavy earth-moving equipment. Trains and similar rail vehicles can also produce vibration. It is unusual for vibration from sources such as buses and trucks to be perceptible. In quantifying vibration, the peak particle velocity (ppv) is most frequently used to describe vibration impacts and is typically measured in inches per second (in/sec). Caltrans employs a vibration damage threshold of 0.2 PPV in/sec for wood frame structures including residences, and a vibration annoyance threshold for humans of 01. PPV in/sec (Caltrans 2020).

Existing Noise Conditions

The Cabrillo High School campus is situated along the south side of Constellation Road; this roadway represents the principal noise source affecting the project vicinity. Sirius Avenue is located to the southeast of the campus and represents a secondary noise source for residences located immediately adjacent to the southeast boundary of the Project site. Noise sensitive land uses in the Project vicinity consist of existing single-family residences that are located immediately adjacent to the existing baseball-field right-outfield fence line (i.e., along Sirius Avenue) and to the north of campus along the north side of Constellation Way. Residences are also located along both sides of Constellation Way to Burton Mesa Boulevard, which would be the route used for construction vehicle access.

Dudek conducted noise measurements in the project vicinity in August 2021 to characterize the existing noise environment. The daytime, short-term (1 hour or less) attended sound level measurements were taken with a SoftdB Piccolo II model sound-level meter. This sound-level meter meets the current American National Standards Institute (ANSI) standard for a Type 2 general purpose sound-level meter. The calibration of the sound level meter was verified before and after the measurements were taken, and the measurements were conducted with the microphone positioned approximately five feet above the ground.

Dudek selected three noise measurement locations (ST1–ST3) along roadways and immediately adjacent to the project site to characterize noise levels from important transportation sources in the area, as well as to establish ambient noise levels for comparison against noise levels from construction of the Project. The measurement locations are shown in Figure 3.13-1, and the measured average noise levels and manual traffic count data are presented in Table 3.13-2. Noise measurement data is also included in Appendix D. As shown in Table 3.13-2, the measured sound levels ranged from approximately 65 dBA L_{eq} at ST1 to approximately 67 dBA L_{eq} at ST2 and ST3.

Table 3.13-2 Measured Average Traffic Sound Level and Manual Traffic Count Results

Site	Traffic Noise Source	Date	Time	L_{EQ}[1]	Cars	MT[2]
ST1	Constellation Road	8/10/2021	9:28 – 9:43 AM	**57 dBA**	58	3
ST2	Sirius Avenue		8:58 – 9:13 AM	**50 dBA**	6	1
ST3	N/A [3]		10:10 – 10:25 AM	**40 dBA**	N/A	N/A

Notes:
[1] Equivalent Continuous Sound Level
[2] Medium Trucks
[3] Not Applicable

General Notes: Temperature 70 degrees, 62% relative humidity, sunny, 2 mph southwesterly wind.

INTENTIONALLY LEFT BLANK

SOURCE: County of Santa Barbara 2020

DUDEK

0 100 200 Feet

FIGURE 3.13-1

Noise Measurment Locations

Cabrillo High School Baseball Field Lighting

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Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, and guest lodging are considered noise-sensitive. Sensitive receptors near the Proposed project site include the following:

- Single-family residential land uses located along the southeast border of the Project site, with a minimum separation of 40 feet from the construction zone boundary. Single-family residences along Constellation Way are adjacent to the route for construction vehicle access.

The above sensitive receptors represent the nearest residential land uses with the potential to be impacted by construction and operation of the proposed project. Additional sensitive receptors are located farther from the project site in the surrounding community and would be less impacted by noise and vibration levels from the proposed project.

Regulatory Setting

County of Santa Barbara Comprehensive Plan Noise Element

The Noise Element of the Comprehensive Plan identifies the major sources of noise in the County, documents ambient noise levels in each region of the County, and contains goals, policies, standards, and implementation measures for the management of noise exposure throughout the County (County of Santa Barbara 2009).

County of Santa Barbara Code of Ordinances

Sec. 40-2 Nighttime Noise Restrictions – Noises Prohibited

It shall be unlawful within the unincorporated area of the County of Santa Barbara to make, assist in making, permit, continue, create, or cause to be made, any loud and unreasonable noise, music, percussion or other sound which is broadcast outside of any residence or building by means of any amplified musical instrument, drum, or similar device, or by means of any radio, loudspeaker, sound amplifier or phonograph, or by means of or employing any similar device which amplifies and produces, reproduces or broadcasts sound, during any of the following periods of time:

(a) The night and following morning of any Sunday, Monday, Tuesday, Wednesday, or Thursday between the hours of 10:00 P.M. of such day and 7:00 A.M. the following morning; or,

(b) The morning hours after midnight of any Friday or Saturday, between twelve midnight, following such day, and 7:00 A.M. the following morning.

Within such time periods, and for the purposes of this chapter, a loud and unreasonable sound shall include any sound created by means prohibited above which is clearly discernable at a distance of one hundred feet from the property line of the property upon which it is broadcast or which is at any level of sound in excess of sixty decibels at the edge of the property line of the property upon which the sound is broadcast, as such sound would be measured on a sound measuring instrument meeting American National Standard Institute's Standard SI.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which provide equivalent data. Enforcement of a violation under this chapter shall not require the use of a sound level meter.

Sec. 28-48 Construction noise, dust and debris.

Each permittee shall conduct and carry out work permitted hereunder in such manner as to avoid unnecessary inconvenience and annoyance to the general public and occupants of neighboring property. The permittee shall take appropriate measures to reduce to the fullest extent practicable in the performance of the work, noise, dust and unsightly debris. During the hours of 10:00 P.M. to 7:00 A.M. the permittee shall not use, except with the express written permission of the commissioner or in case of an emergency as herein otherwise provided, any tool, appliance or equipment producing noise of sufficient volume to disturb the sleep or repose of occupants of the neighboring property.

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

Less than Significant. On-site noise-generating activities associated with the proposed project would include short-term construction as well as a slight shift in the time of day occurrence for crowd noise associated with on-going baseball games. The proposed project would also generate short-term construction-related off-site traffic noise along various roadways in the area. These potential impacts are discussed below.

Construction Noise (Short-Term Impacts)

Construction noise and vibration are temporary phenomena. Noise impacts from construction activities are a function of the noise generated by construction equipment, equipment location, noise-sensitivity of nearby land uses, and timing and duration of the construction activities. The nearest sensitive receptors are single-family homes adjacent to the southeastern side of the Project site and along the westerly side of Sirius Avenue.

Construction noise is difficult to quantify because of the many variables involved, including the specific equipment types, size of equipment used, percentage of time, condition of each piece of equipment, and number of pieces of equipment that will actually operate on site. The range of maximum noise levels for various types of construction equipment at a distance of 50 feet is depicted in Table 3.13-4. The noise values represent maximum noise generation, or full-power operation of the equipment. As one increases the distance between equipment, and/or the separation of areas with simultaneous construction activity, dispersion and distance attenuation reduce the effects of separate noise sources added together. In addition, typical operating cycles may involve two minutes of full-power operation, followed by three or four minutes at lower levels. The average noise level during construction activity is lower, since maximum noise generation generally occurs less than 50% of the time. Noise levels from construction operations decrease at a rate of approximately 6 dBA per doubling of distance from the source to a receiver point.

Table 3.13-3 Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Backhoe	80
Air compressor	81
Generator	81
Compactor	82

Table 3.13-3 Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Concrete pump	82
Crane, mobile	83
Concrete mixer	85
Dozer	85
Grader	85
Loader	85
Pneumatic tool	85
Truck	88

Source: FHWA 2008

The nearest point of construction activities to the closest noise-sensitive receivers (single-family residences located to the east/southeast) would be approximately 40 feet; the furthest distance from construction activity to these closest residences would be approximately 135 feet. However, these separation distances would not be representative of more typical construction noise, because in general the construction activities would not take place either at the nearest or at the farthest portions of the project site, but somewhere in between. Thus, in order to provide information on typical construction noise levels, the distance from the nearest receivers to the project's "acoustic center" was also analyzed. The acoustic center represents the idealized point from which the energy sum of all construction activity noise, near and far, would be centered. The acoustic center is derived by taking the square root of the product of the nearest and the farthest distances. For this project, the acoustic center was found to be 71 feet from the nearest noise sensitive receivers located to the east/southeast. Given the overall size of the project site, and the relatively equal distribution of proposed lighting locations across the property, noise levels derived from the acoustic center of construction activity would provide a better representation of average noise level exposure across the entire construction process for a given off-site receiver, than using the minimum distance worst-case method.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at these closest noise-sensitive land uses. Although the model was developed by the FHWA, RCNM is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are also used to construct other project types. Input variables for RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of each hour the equipment typically works per day), and the distance from the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling of construction noise (i.e., the receivers are modelled with no obstacles to the travel of sound between the construction activity and receiver location, a worst-case assumption). The noise levels from the proposed construction activities are summarized in Table 3.13-5. The complete set of RCNM input and output data for construction noise is provided in Appendix D. As shown, at the nearest residences, noise levels would range from approximately 85 to 87 dBA L_{eq} when construction is taking place at or near the eastern project site boundary.

Table 3.13-4 Construction Noise Model Results Summary

Construction Phase	Construction Noise at Representative Receiver Distance (dBA L_{eq})	
	Nearest Construction Work (approximately 40 feet from residences)	Acoustic Center of Construction (approximately 71 feet from residences)
Trenching	85	79
Lighting Installation	87	81

Notes: L_{eq} = equivalent continuous sound level

As presented in Table 3.13-5, the average noise levels experienced at the adjacent residences during construction would range from 79 to 81 dBA L_{eq} using the acoustic center distance (which is considered a more reasonable characterization of construction noise from activity occurring across the construction site). These temporary construction noise levels at outdoor areas adjacent to the nearest residences would be similar to the noise levels from a food blender or garbage disposal; residential buildings typically reduce exterior noise levels by 25 dBA in indoor spaces (with windows closed), and therefore residential interior noise levels would not be anticipated to exceed approximately 60 dBA L_{eq} during construction, which would not interfere with normal conversation. As such, while construction noise would be noticeable, it would not have significant effects during the daytime.

The County regulates construction noise by restricting the allowable hours of construction for sites that are close to existing residences. Sec. 28-48 and 40-2 of Santa Barbara County Code prohibits the generation of loud noise between 10 p.m. and 7 a.m. of the following day. The Project would be required to comply with County Code, thereby avoiding nighttime noise disturbances. Therefore, temporary construction-related noise impacts for the Project would be less than significant. No mitigation is required.

Operational Noise (Long-Term Impacts)

The Project includes the addition of lighting to an existing baseball field at Cabrillo High School. Capacity of the associated spectator stands would not be increased with the Project, and therefore the number of spectators would remain the same and noise levels associated with spectator activities would be unchanged. The additional of field lighting would permit the shifting of some game schedules to occur in the evening period, with games anticipated to extend no later than 9 p.m. This shift in game events from a dusk end time to an end time no later than 9 p.m. would not result in alterations to the overall 24-hour average noise levels associated with the baseball field. An end time of no later than approximately 9 p.m. would also avoid the potential for sleep disturbance from game-related noise levels at the closest residences.

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

Less Than Significant. Construction activities that might expose persons to excessive ground-borne vibration or ground-borne noise could cause a potentially significant impact. Ground-borne vibration information related to construction activities has been collected by the California Department of Transportation (Caltrans 2020). Information from Caltrans indicates that continuous vibrations with a peak particle velocity (PPV) of approximately 0.1 in/sec begin to annoy people, while structural damage to modern buildings can begin at 0.2 in/sec PPV. Heavier pieces of construction equipment, such as bulldozers, generate vibration of approximately 0.089 in/sec PPV or less at a distance of 25 feet, while

heavy loaded trucks (including concrete mixing trucks) generate vibration of approximately 0.076 in/sec at 25 feet (Caltrans 2020). Ground-borne vibration is typically attenuated over short distances. The nearest residential building to construction on the Project site is separated by a minimum of 40 feet; at 40 feet, vibration from heavy construction equipment would be reduced to no greater than 0.016 inch/second PPV. This vibration level would be well below both the 0.2 inch/sec PPV structural damage and 0.1 inch/sec human annoyance threshold. Vibration is very subjective, and some people may be annoyed at continuous vibration levels near the level of perception (or approximately 0.01 inch/second PPV). However, this level of sensitivity is unlikely to exist where exposure would be during the day and for a relatively short duration while site preparation activities are occurring for the Project. Project vibration impacts would therefore be less than significant.

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

No Impact. According to the Lompoc Airport Land Use Compatibility Plan (SBCAG 2019), Cabrillo High School is located outside the boundary of the 60 dB CNEL contour for the Lompoc Airport. As such, the Project would not have the potential to expose persons to elevated noise levels from airport operations.

3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Regulatory Background

The Housing Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for the development and preservation of housing stock to accommodate residents of all income levels within the County (County of Santa Barbara 2009).

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Project would include the installation and operation of exterior lighting at an existing baseball field within the Cabrillo High School campus. Construction of the small-scale improvements would likely be able to draw upon a locally available workforce; due to the limited scale and duration of the construction effort, even if a non-local contractor were retained, long-term construction employment opportunities would not result from the project. Consequently, the Project would not be anticipated to induce construction workers to relocate to the region. The lighting project would neither increase the enrollment capacity of Cabrillo High School, nor lead to an expansion of the existing athletic program at the school. As such, the Project would not be growth inducing, either directly or indirectly.

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

No Impact. The Project would include the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. There would be no displacement of any population, and the Project would not necessitate the construction of replacement housing. There would be no impact on either temporary or permanent populations.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Regulatory Background

The Santa Barbara County Comprehensive Plan Seismic Safety and Safety Element establishes policies to protect the community from natural and manmade hazards and identifies standards for fire and sheriff staffing levels on a population basis. In addition, the Land Use Element lays out the general patterns of development throughout the County, including the distribution of open space and agricultural land, mineral resources, recreational facilities, schools, and waste facilities. Lastly, the Open Space Element details plans and measures for preserving open space for natural resources, outdoor recreation, public health and safety, and agriculture.

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

Fire protection?

No Impact. The Project consists of the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. The light poles would be constructed of steel, which is not combustible. The baseball field area is planted in grass, which is periodically mowed, therefore minimizing fire risk. The addition of lighting to the existing baseball field would not introduce new student or resident population to the vicinity. Therefore, the Project would not increase the demand for fire protection services. The County of Santa Barbara Fire Department would continue to serve the Cabrillo High School campus with existing equipment and personnel.

Police protection?

No Impact. The Project would include the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. Resident population in this region of the County would not be increased by the Project, and the lighting equipment would not be expected to represent a target for vandalism. The Santa Barbara County Sheriff's Department would continue to provide police protection to the Cabrillo High School campus and the Project would not result in any increase in the demand for police protection services; No new Sheriff personnel would be required.

Schools?

No Impact. The Project would include the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. The addition of lighting to the existing baseball field would not introduce new student or resident population to the vicinity. Therefore, the Project would not increase the demand upon school resources. The addition of lighting to the baseball field would have no effect upon enrollment capacity of the school or participation capacity of athletic programs at Cabrillo High School. However, the lighting would increase programming schedule flexibility for baseball practices and games, a beneficial impact.

Parks?

No Impact. The Project would include the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. The addition of lighting to the existing baseball field would not introduce new resident population to the vicinity. Therefore, the Project would not result in an increase in demand for park resources or the need for more parks.

Other public facilities?

No Impact. The Project would include the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus. No off-campus construction would occur, and the vicinity residential population would not be increased by the Project; therefore, no public facilities would be impacted.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Regulatory Background

The Open Space Element of the Comprehensive Plan contains goals, policies, standards, and implementation measures for preserving open space for natural resources, outdoor recreation, public health and safety, and agriculture.

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

No Impact. The Project would include the installation and operation of exterior lighting at an existing baseball field within the Cabrillo High School campus. Resident population in this region of Santa Barbara County would not be increased as a result of the Project; therefore, there would be no increase in the use of existing neighborhood and regional parks or other recreational facilities, and no Project-resultant physical deterioration of these existing recreation facilities would occur or be accelerated.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. The Project would include the installation of lighting to an existing baseball field at Cabrillo High School. In terms of recreation, providing lighting at the field would increase spectator opportunities in the evening, raising the recreational value of the facility. No new recreational facilities would be constructed in the community. The environmental effects of the construction and operation of the proposed lighting addition are described in each section of this document.

3.17 Transportation

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

Regulatory Background

The Comprehensive Plan Circulation Element identifies the general location and extent of existing and proposed major roads, transit routes, terminals, and public utilities and facilities and includes policies and implementing actions to develop and maintain circulation facilities for the efficient conveyance of residents and goods throughout the County consistent with the Land Use Element.

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

Less than Significant Impact. The proposed Project would generate construction-related traffic during trenching and light pole installation, estimated to be no greater than 10 construction worker and 2 vendor trips per day. The routing for construction vehicle access would be via State Route 1, Burton Mesa Boulevard, Constellation Road, Sirius Avenue, and Albireo Avenue.

Based on construction phasing and schedule, the construction effort would consist of two phases with a total duration not exceeding three months. The construction activities would occur in one shift of approximately 8 hours between 7:00 am and 4:00 pm over the weekdays, Monday through Friday.

Construction-related traffic would be short-term and would cause a nominal increase in vehicle trips associated with workers commuting to and from the site and trucks delivering material or equipment. Once the Project is constructed, daily traffic associated with baseball field is not expected to materially increase, although some trips may occur later in the day as a result of being able to hold practices or games after dark (which is not feasible currently).

The proposed Project would not make any changes to the circulation system, would not decrease roadway capacity, would not generate appreciable additional traffic or change traffic patterns that could cause an impact to the circulation system including transit, roadway, bicycle, and pedestrian facilities. Therefore, the

proposed Project would not conflict with adopted policies, plans, or programs regarding transit, bicycle, and pedestrian facilities, and impacts would be less than significant.

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

Less than Significant Impact. CEQA Guidelines Section 15064.3, subdivision (b), focuses on specific criteria (vehicle miles traveled (VMT)), for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. The proposed Project is the addition of lighting to an existing baseball filed at Cabrillo High School that would generate temporary construction-related traffic and no increases in operational traffic associated with the campus. This project would be categorized under subdivision (b)(3), qualitative analysis. Subdivision (b)(3) recognizes that lead agencies may not be able to quantitatively estimate VMT for every project type. In those circumstances, this subdivision encourages lead agencies to evaluate factors such as the availability of transit, proximity to other destinations, and other factors that may affect the amount of driving required by the Project.

As described previously, construction of the proposed Project would result in a nominal increase in local traffic as a result of construction-related worker traffic, material and equipment deliveries, and construction activities. VMT generated from construction-related traffic would cease once construction is completed, and VMT levels would return to pre-project conditions. Therefore, vehicle miles generated from construction traffic would be temporary and short term. The proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Impacts would be less than significant.

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

No Impact: The proposed Project would not include any off-site construction or improvements; the Project would therefore not result in new roadway design features, new geometric design features, new sharp curves, or new dangerous intersections. Therefore, the proposed Project would not increase hazards due to a roadway design feature or incompatible uses.

d) Would the project result in inadequate emergency access?

No Impact. The Project consists of the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus; no off-site improvements, construction or physical alterations are proposed, and the lighting standards would not be located within an area of the campus that supports vehicle access. Emergency response vehicles have direct access adjacent to the spectator areas of the baseball field from Albireo Avenue, which is located along the southern side of the baseball field. No increase in spectator capacity is proposed under the Project that could result in an increase in the demand for emergency response related to accidents or medical condition incidents. The Project would therefore not result in inadequate emergency access.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

The evaluation of potential impacts to Tribal Cultural Resources is based on the findings resulting from tribal outreach and consultation conducted by LUSD, as the lead agency, as well as the findings of the Phase I Cultural Resources study conducted by Dudek in 2021 (Confidential Appendix C). Background research conducted to inform this analyses and provide data upon request of interested Native American representatives included a Native American Heritage Commission (NAHC) Sacred Land Files (SLF) search, ethnographic research, archival research and California Historical resources Information System (CHRIS) database records search all of which are briefly provided in this section.

Existing Setting - Ethnohistoric

Immediately prior to the arrival of the Spanish in AD 1542, the people living in the Santa Barbara region collectively known today as the Chumash, consisted of set of related ethnolinguistic groups occupying a territory that spanned from Morro Bay in the north, south to Malibu on the coast, and inland to encompass the interior South Coast Range and the northwest Transverse Range, including the Carrizo Plain, the Cuyama Valley, and the San Emigdio Hills. The language these people spoke is considered an isolate (Goddard 1996), distinct from the languages spoken by their neighbors, the Salinan, Yokuts, Kitanemuk, Tataviam, and Gabrielino (Tongva). Internally there is considerable diversity, such that not all of the regional dialects were mutually intelligible. Today, the names for these different ethnolinguistic groups come mainly from their associations with different Mission territories: the Obispeño in the north were notably distinct from a group called the Central Chumash, which consisted of the Purisimeño, Ynezeño, Barbareño, and Ventureño. Both of these groups (Obispeño and Central Chumash) spoke languages that were in turn distinct from those spoken on the northern Channel Islands, typically grouped together under the heading of

Island Chumash. Linguistics mask some of the historically documented internal diversity that would include regional dialectic differences such as the Emigdiano, Castec, Matilija, Mugu, and Malibu of the Central Chumash, and the Cruzeño, Roseño, and Migueleño of the Island Chumash (see Golla 2011; Grant 1978a, 1978b; Kroeber 1925).

What we know of these people comes, in part, from the rich written accounts of a variety of sources, the earliest of which are those of the Spanish explorers to the Santa Barbara Channel and mainland, namely Cabrillo in 1542 and Vizcaíno in 1602 (Brown 1967; Wagner 1929). These observations were expanded by the accounts written during early efforts to establish evangelical Missions (and therefore Royal territory) in Alta California, namely by Portolá in 1769, de Anza in 1776, and to a lesser degree, Garcés in 1776 (Coues 1900; Bolton 1927; Gamble 2008; Priestley 1937). These accounts were further expanded by the observations and managerial records of the Mission administrators for a period of about 60 years (Geiger 1969; Geiger and Meighan 1976; Johnson 1982, 1988). After that, Euroamerican interest in Native American life made it possible for the Native views of their own history and culture to enter into the written record, primarily in this case through ethno-historic documentation of Chumash beliefs, folk tales, music, customs, and lifeways (e.g., Blackburn 1975; Harrington 1942; Hudson, et al. 1981). This forms perhaps the richest body of information that we have about the Chumash; further development of this understanding continues today.

These written records and accounts of Chumash life reveal a variety of things that have been of paramount importance to archaeologists for many decades. This includes accounts of what people ate and how they acquired it, how they made various elements of material culture, and how they used it (e.g., Hudson and Blackburn 1979, 1983, 1985, 1986). It also includes ideas about the landscape, knowledge of the plants and animals that live in it, and of how to manage that landscape, as well as accounts of how social life was structured, how hierarchy and power were perceived, imagined and negotiated by individuals. The ethnohistories also contain a rich account of the structure of hierarchy within Chumash life, including ideas about how money, exchange, and territory, along with the management and manipulation of those elements, fed into the structures of social power.

It is this body of knowledge that has commanded the lion-share of archaeological attention, certainly since the 1980s. Of particular importance to archaeologists of the Santa Barbara Channel has been the effort to explain the evolution of the kinds of social and political complexity revealed in the rich ethno-historic records of the Chumash (King 1976; King 1969). Attention paid to how people acquired and controlled resources, and how resources from different environments (namely the Islands, the mainland coast, and the interior) were moved across different boundaries and networks, has been extremely important. This involves a detailed understanding of how goods and services were transported not only between different aspects of the Chumash cultural sphere, but also between the Chumash and the people of the Central Valley, the Sierra, the South Coast, and the Desert Interior. Considerable ethnographic detail exists about the nature of market-based exchange, the use of shell-bead money, conscious control of inflation, the role of intermediaries in between-group exchange, trading parties from distant lands, and the kinds of goods transported from different areas, all of which has played a significant role in both the interpretation of the archaeological record, and the design of archaeological research. Indeed, synthetic accounts of the ethnographic record occasionally offer insights about the archaeological patterns one might expect of the Chumash interaction sphere (Gamble 2008; Johnson 1982, 1988; King 1976).

Interests in the evolution of complex society in the Chumash world have therefore played a disproportionate role in the collective efforts of archaeologists over the past many decades. Therefore, it is not surprising that the majority of archaeological research has been focused mainly on the late prehistoric record and on understanding the evolution of the many things the Europeans were able to observe or record of Chumash life. However, as with any interpretation of the past informed by ethnohistoric observation, interpreters of the Chumash and their ancestors must be cautious about ethnographer's interpretive agency, conscious or not (Haley and Wilcoxon 1997, 1999). Contemporary re-

analysis of historic observations may stimulate novel insights that engender novel directions in archaeological research.

Existing Setting – Native American Heritage Commission Sacred Land Files Search Results

A search of the NAHC SLF was requested on August 9, 2021 and conducted by Cultural Services Analyst Andrew Green on September 2, 2021 to determine the presence of any reported Native American cultural resources within the Project site as listed in the NAHC maintained SLF (Confidential Appendix C). The NAHC SLF records search result was negative. The NAHC identified nine (9) Native American individuals who would potentially have specific knowledge as to whether or not Native American cultural resources are identified within the Project site that could be at-risk. To date, Dudek has not initiated contact with the individuals on the NAHC's contact list, in regard to the Project site. Note: Sacred Land Files maintained by the NAHC represent a curation of "ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California" (nahc.gov 2021) provided by Tribal entities and Native American representatives. For various reasons, Tribal entities and Native American representatives do no not always report sacred lands or TCRs to the NAHC; as such, the NAHC's SLF is not necessarily a comprehensive list of known TCRs and searches of the SLF must be considered in concert with other research and not used as a sole source of information regarding the presence of TCRs. Additionally, results of the SLF provided relate to the general regional area within and surrounding the proposed project site and don't necessarily equate to the existence of resources within the specific area occupied by the proposed project site.

Regulatory Background

Assembly Bill 52

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

- On the CRHR or a local historic register;
- Eligible for the CRHR or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1.

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native

American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

Assembly Bill 52 Outreach/Consultation

The project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process, and that the lead agency provide tribes who have requested notification with early notice of the proposed project and, if requested, consultation to inform the CEQA process with respect to TCRs. No California Native American tribes have requested notification for projects within the LUSD's jurisdiction. As such, no notification letters pursuant to AB 52 were sent and no TCRs were identified as a result of the AB 52 tribal outreach/consultation process.

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

Less-Than-Significant Impact. Based on the CHRIS and NAHC SLF records searches, including background research as summarized above, no previously recorded archaeological resources of Native American origin or tribal cultural resources (TCRs) listed in the CRHR or a local register or in any other of the records reviewed were identified within the proposed project site. Therefore, impacts would be less than significant. No Mitigation Measures are required.

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

Less-Than-Significant Impact. Assembly Bill 52 requires lead agencies to provide tribes who have requested notification with early notice of the proposed project and, if requested, consultation to inform the CEQA process with respect to TCRs. No California Native American tribes have requested notification for projects within the LUSD's jurisdiction. As such, the District has not been provided information that would assist in identifying any TCRs within the proposed project site that would warrant discretionary designation of a resource as a TCR. Therefore, the proposed project would not cause a substantial adverse change in the significance of a TCR, as defined in Public Resources Code Section 21074, and impacts would be less than significant. No Mitigation Measures are required.

3.19 Utilities and Service Systems

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

Regulatory Background

The Santa Barbara County Comprehensive Plan Land Use Element lays out the general patterns of development throughout the County, including the distribution of open space and agricultural land, mineral resources, recreational facilities, schools, and waste facilities. In addition, the Conservation Element establishes policies and implementation strategies for the conservation, development, and use of natural resources including water, forests, soils, rivers, and mineral deposits.

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

Less than Significant. The Project would include the installation and operation of exterior lighting at an existing baseball field within the Cabrillo High School campus. Operation of the lighting system during practices or games would not result in direct or indirect increases in the demand for potable water,

wastewater treatment, stormwater conveyance, natural gas, or telecommunications. As discussed in 3.6 Energy, the operation of the lighting system would result in modest electrical consumption below all applicable thresholds and would not lead to the need for construction of new electrical generation facilities.

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

No Impact. The Project would include the installation and operation of lighting systems at an existing baseball field. The lighting system would not have direct or indirect effects upon water supplies or demands.

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

No Impact. The Project would include the installation and operation of lighting systems at an existing baseball field within the Cabrillo High School campus. No alterations to existing restrooms or locker rooms are proposed, and the existing spectator capacity at the baseball field will also not be increased. Therefore, the lighting system project would not have direct or indirect effects upon wastewater generation or treatment demand capacity.

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

No Impact. The Project would include the installation and operation of exterior lighting at an existing baseball field within the Cabrillo High School campus. No demolition is required in order to install the lighting, and the lighting standards will be prefabricated; therefore, construction-related wastes are not anticipated. Spectator capacity at the baseball field will not be increased under the Project, and therefore no increases in solid waste generation associated with the campus are anticipated as a result of the Project.

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

No Impact. The Project would include the installation and operation of exterior lighting at an existing baseball field within the Cabrillo High School campus. No increases in solid waste generation associated with the campus are anticipated as a result of the Project. Consequently, the Project would be in compliance with solid waste regulations.

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3.20 Wildfire

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

Regulatory Background

The Santa Barbara County Comprehensive Plan Seismic Safety and Safety Element establishes policies to protect the community from natural and manmade hazards (e.g. seismic, geologic, flood, wildfire, and toxic materials hazards).

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The Project consists of the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus; no off-site improvements, construction or physical alterations are proposed, and the lighting standards would not be located within an area of the campus that supports vehicle access. No increase in spectator capacity is proposed under the Project that could result in an increase in the demand for emergency response or evacuation. The Project would therefore not result in impairment of adopted emergency response or evacuation plans.

b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The Project would include the installation and operation of a lighting system within an existing baseball field; the lighting system is neither combustible nor represents an ignition source. Based on the 2017 Santa Barbara County Multi-Jurisdictional Hazard Mitigation Plan (County of Santa Barbara 2017), the Project area is located within the wildland-urban interface zone. Due to the location of the Project in a school /residential neighborhood setting, and the absence of combustible Project components, the Project will not exacerbate wildfire risks or the uncontrolled spread of wildfire.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The Project would include the installation of a lighting system within an existing baseball field. No additional infrastructure will be constructed in association with the Project, nor would improvements be necessary to any existing infrastructure system to serve the demands of the Project.

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The Project consists of the installation and operation of lighting within an existing baseball field at the Cabrillo High School campus, no structures are proposed with the Project. Further, no increase in spectator capacity is proposed under the Project that could result in exposure of a greater number of people to existing wildfire risks.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of other current and probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on humans, either directly or indirectly?	☐	☐	☒	☐

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

Less than Significant with Mitigation Incorporated. As described above, the Project will take place completely within an existing baseball field at Cabrillo High School; direct impacts will be limited to excavation within planted lawn area. No native habitat is present within or in the immediate vicinity of the Project site. Potential impacts to state or federally protected wetlands and waterways, including impacts to water quality, may occur as a result of erosion during active construction; however, **MM BIO-1** includes standard construction BMPs, which will prevent erosion and siltation from impacting off-site waters, reducing these potential impacts to a level below significance. Potential impacts to California history or prehistory have been identified. However, with the implementation of Mitigation Measures **MM CUL-1** and **MM CUL-2,** the residual level will be reduced to less than significant. If unanticipated discoveries were encountered, impacts to encountered resources could be potentially significant. In order to ensure that all Project personnel are aware of the cultural sensitivity of the Project site, a workers environmental awareness program (WEAP) training will be required to be implemented under **MM-CUL-1** to ensure early identification and response to inadvertent prehistoric and historical-era resources. In order to further ensure that impacts to unanticipated archaeological resources area appropriately avoided, archaeological monitoring under **MM-CUL-2** will occur in all areas with potential to encounter archaeological resources.

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

No Impact. The Project would not result in any cumulatively considerable impacts.

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

No Impact. The Project would not cause substantial adverse effects on humans, either indirectly or directly.

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4.2 List of Preparers

Dudek

Jonathan Leech, Project Manager
Paul Caliguiri, Visual Simulation Specialist
Linda Cry, Archaeologist
Heather McDevitt, Archaeologist
Adam Poll, Air Quality Specialist
David Ortega, Analyst

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Appendix A
Lighting Design Details

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Cabrillo High School Baseball

Lompoc, CA.

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1	70'	70'	4	TLC-LED-1200	4.68 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		70'	1	TLC-LED-400	0.40 kW	C
A2	70'	70'	4	TLC-LED-1200	4.68 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		70'	2	TLC-LED-400	0.80 kW	C
B1	80'	80'	6	TLC-LED-1500	8.58 kW	A
		80'	2	TLC-LED-900	1.78 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		60'	1	TLC-LED-600	0.58 kW	C
B2	80'	80'	6	TLC-LED-1500	8.58 kW	A
		80'	2	TLC-LED-900	1.78 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		60'	1	TLC-LED-400	0.40 kW	C
		60'	2	TLC-LED-900	1.78 kW	B
C1-C2, D1-D2	70'	70'	4	TLC-LED-900	3.56 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
8			*55*		*52.88 kW*	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Baseball	48.92 kW	48
B	Bullpen	1.78 kW	2
C	Egress	2.18 kW	5

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1200	LED 5700K - 75 CRI	1170W	135,000	>120,000	>120,000	>120,000	8
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	22
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	1
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	12
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	4
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	8

Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Baseball (Infield)	Horizontal Illuminance	51.6	41	67	1.64	1.26	A	48
Baseball (Outfield)	Horizontal Illuminance	31	20	45	2.23	1.55	A	48
Bullpen	Horizontal	31.4	21	41	2.00	1.49	A,B	50
Egress	Horizontal	4.25	1	16	15.11	4.25	C	5
Far Street Spill	Horizontal Illuminance	0	0	0	0.00		A,B	50
Far Street Spill	Max Candela Metric	62	0.13	460	3605.62	476.92	A,B	50
Far Street Spill	Max Vertical Illuminance Metric	0	0	0	0.00		A,B	50
Fence Line Spill	Horizontal Illuminance	2.22	0.01	8.84	967.90	222.00	A,B	50
Fence Line Spill	Max Candela Metric	27953	7798	46463	5.96	3.58	A,B	50
Fence Line Spill	Max Vertical Illuminance Metric	2.73	0.05	9.42	182.13	54.63	A,B	50
LTW	Horizontal	0.10	0	0.46	0.00		A	48
LTW	Max Candela (by Fixture)	4347	150	13758	91.75	28.99	A	48
LTW	Max Vertical Illuminance Metric	0.17	0	0.61	895.96		A	48

From Hometown to Professional

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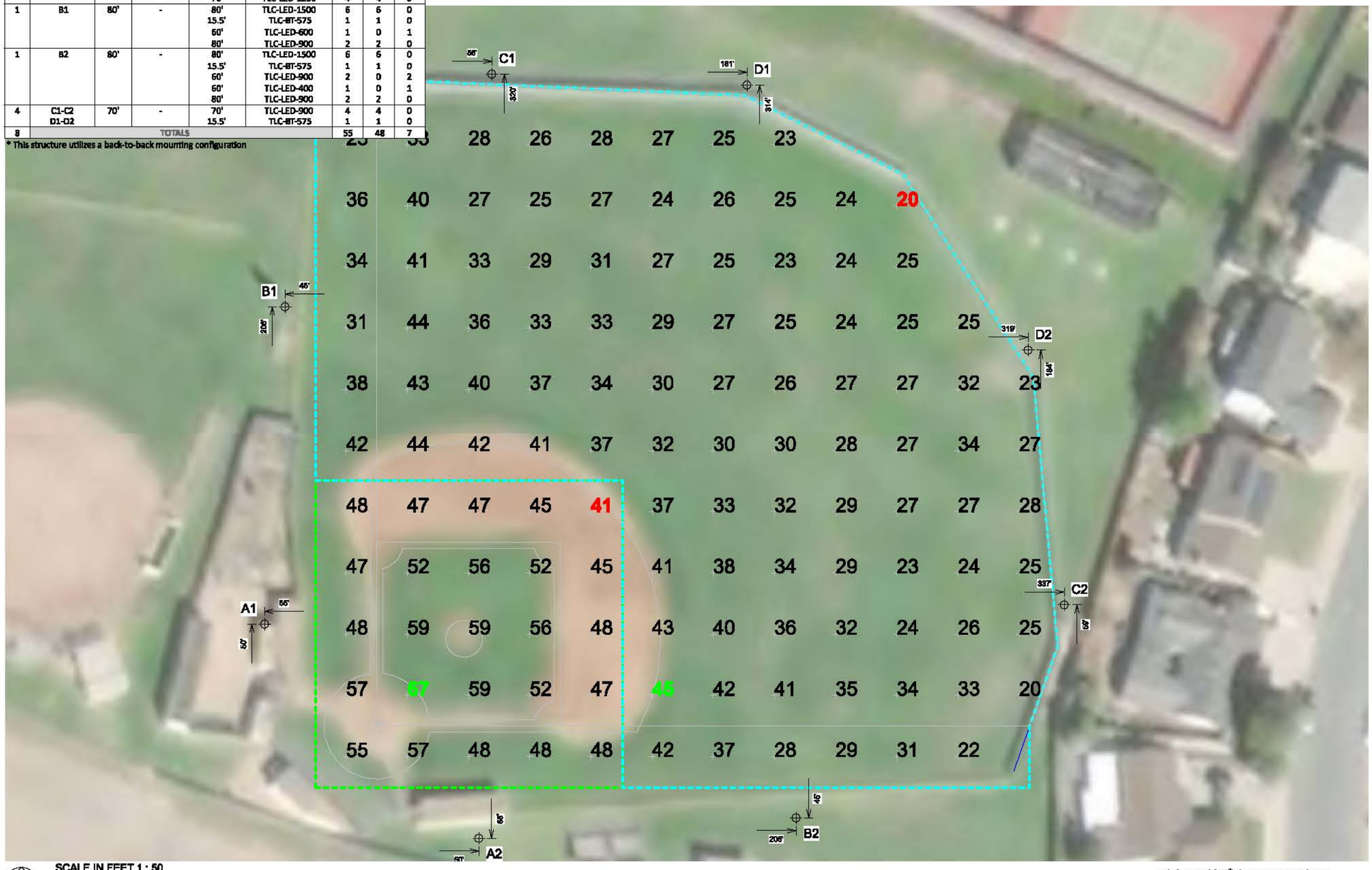
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-400	1*	0	1
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	A2	70'	-	70'	TLC-LED-400	2*	0	2
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	B1	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-600	1	0	1
				80'	TLC-LED-900	2	2	0
1	B2	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	0	2
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	2	2	0
4	C1-C2	70'	-	70'	TLC-LED-900	4	4	0
	D1-D2			15.5'	TLC-BT-575	1	1	0
8	TOTALS					55	48	7

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 50

0' 50' 100'

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

Cabrillo High School Baseball

Lompoc, CA.

GRID SUMMARY

Name:	**Baseball**
Size:	Irregular 317' / 372' / 320'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	51.56	30.98
Maximum:	67	45
Minimum:	41	20
Avg / Min:	1.26	1.55
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.64	2.23
UG (adjacent pts):	1.23	1.60
CU:	0.75	
No. of Points:	25	97

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	**48**
Total Load:	48.92 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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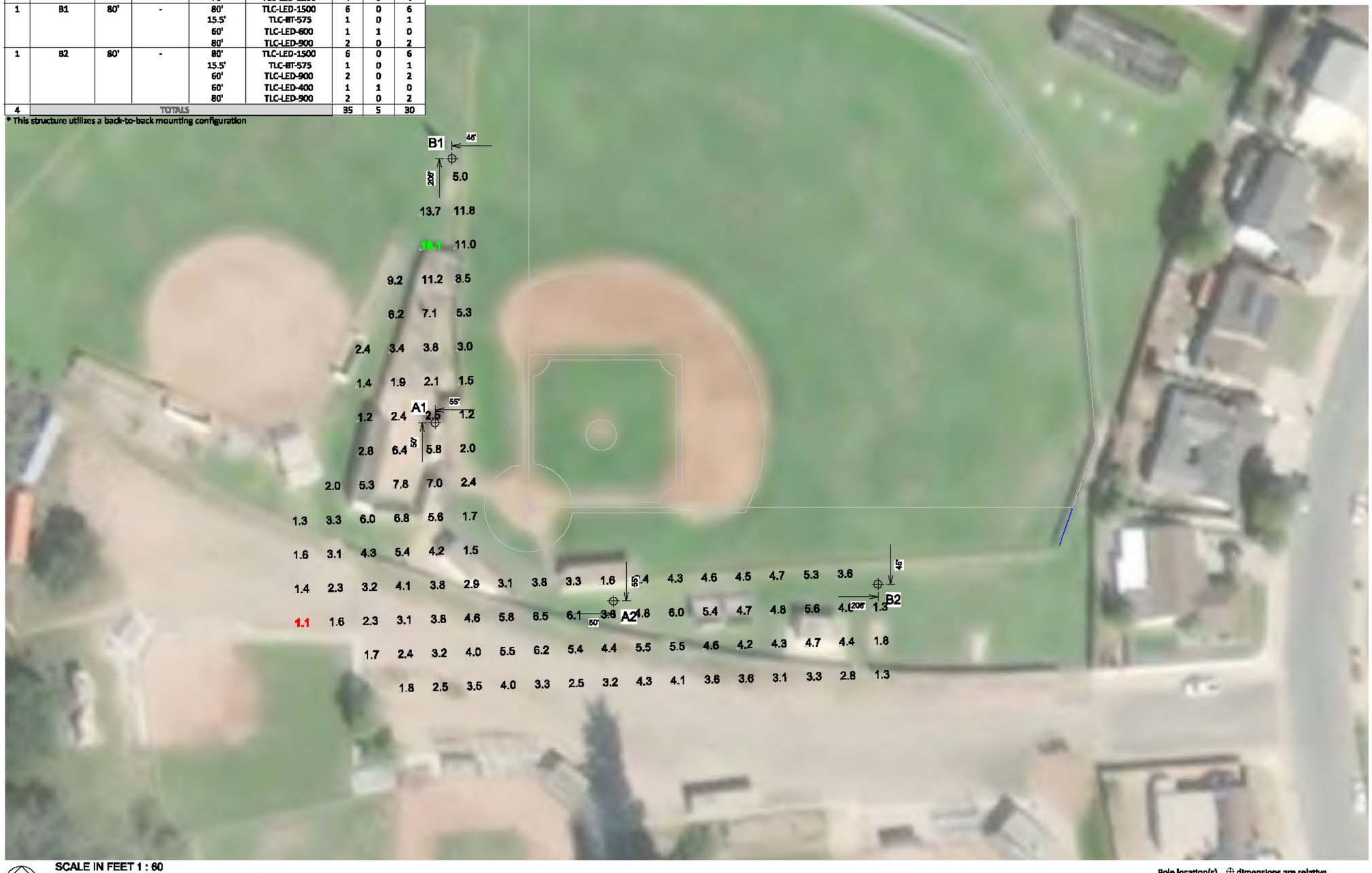
EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-400	1*	1	0
				15.5'	TLC-BT-575	1	0	1
				70'	TLC-LED-1200	4	0	4
1	A2	70'	-	70'	TLC-LED-400	2*	2	0
				15.5'	TLC-BT-575	1	0	1
				70'	TLC-LED-1200	4	0	4
1	B1	80'	-	80'	TLC-LED-1500	6	0	6
				15.5'	TLC-BT-575	1	0	1
				60'	TLC-LED-600	1	1	0
				80'	TLC-LED-900	2	0	2
1	B2	80'	-	80'	TLC-LED-1500	6	0	6
				15.5'	TLC-BT-575	1	0	1
				60'	TLC-LED-900	2	0	2
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-900	2	0	2
4	TOTALS					35	5	30

* This structure utilizes a back-to-back mounting configuration



SCALE IN FEET 1 : 60

0' 60' 120'

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Cabrillo High School Baseball

Lompoc, CA.

GRID SUMMARY

Name:	Egress
Size:	Irregular 317' / 372' / 320'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	4.25
Maximum:	16
Minimum:	1
Avg / Min:	4.00
Max / Min:	15.11
UG (adjacent pts):	3.68
CU:	0.75
No. of Points:	110

LUMINAIRE INFORMATION

Applied Circuits:	C
No. of Luminaires:	5
Total Load:	2.18 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "**Musco Control System Summary**" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-400	1*	0	1
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	A2	70'	-	70'	TLC-LED-400	2*	0	2
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	B1	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-600	1	0	1
				80'	TLC-LED-900	2	2	0
1	B2	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	2	2	0
4	C1-C2 D1-D2	70'	-	70'	TLC-LED-900	4	4	0
				15.5'	TLC-BT-575	1	1	0
8	TOTALS					55	50	5

* This structure utilizes a back-to-back mounting configuration

SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

Cabrillo High School Baseball

Lompoc, CA.

GRID SUMMARY

Name:	**Bullpen**
Size:	Irregular 317' / 372' / 320'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES	Entire Grid
Scan Average:	**31.37**
Maximum:	**41**
Minimum:	**21**
Avg / Min:	**1.52**
Max / Min:	**2.00**
UG (adjacent pts):	**1.24**
CU:	**0.01**
No. of Points:	**14**
LUMINAIRE INFORMATION	
Applied Circuits:	A, B
No. of Luminaires:	**50**
Total Load:	50.7 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-400	1*	0	1
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	A2	70'	-	70'	TLC-LED-400	2*	0	2
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	B1	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-600	1	0	1
				80'	TLC-LED-900	2	2	0
1	B2	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	2	2	0
4	C1-C2	70'	-	70'	TLC-LED-900	4	4	0
	D1-D2			15.5'	TLC-BT-575	1	1	0
8	TOTALS					55	50	5

* This structure utilizes a back-to-back mounting configuration

SCALE IN FEET 1 : 150

0' 150' 300'

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

Cabrillo High School Baseball

Lompoc, CA.

GRID SUMMARY

Name:	Fence Line Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	2.7314
Maximum:	9.42
Minimum:	0.05
No. of Points:	14

LUMINAIRE INFORMATION

Applied Circuits:	A, B
No. of Luminaires:	50
Total Load:	50.7 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-400	1*	0	1
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	A2	70'	-	70'	TLC-LED-400	2*	0	2
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	B1	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-600	1	0	1
				80'	TLC-LED-900	2	2	0
1	B2	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	0	2
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	2	2	0
4	C1-C2	70'	-	70'	TLC-LED-900	4	4	0
	D1-D2			15.5'	TLC-BT-575	1	1	0
8	TOTALS					55	48	7

* This structure utilizes a back-to-back mounting configuration

SCALE IN FEET 1 : 150

0' 150' 300'

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

Cabrillo High School Baseball

Lompoc, CA.

GRID SUMMARY

Name:	LTW
Spacing:	30.0'
Height:	5.0' above grade

ILLUMINATION SUMMARY

MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	0.1737
Maximum:	0.61
Minimum:	0.00
No. of Points:	25

LUMINAIRE INFORMATION

Applied Circuits:	A
No. of Luminaires:	48
Total Load:	48.92 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-400	1*	0	1
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	A2	70'	-	70'	TLC-LED-400	2*	0	2
				15.5'	TLC-BT-575	1	1	0
				70'	TLC-LED-1200	4	4	0
1	B1	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-600	1	0	1
				80'	TLC-LED-900	2	2	0
1	B2	80'	-	80'	TLC-LED-1500	6	6	0
				15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-900	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	2	2	0
4	C1-C2	70'	-	70'	TLC-LED-900	4	4	0
	D1-D2			15.5'	TLC-BT-575	1	1	0
8	TOTALS					55	50	5

* This structure utilizes a back-to-back mounting configuration

SCALE IN FEET 1 : 150

0' 150' 300'

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Cabrillo High School Baseball

Lompoc, CA.

GRID SUMMARY

Name:	Far Street Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	0.0001
Maximum:	0.00
Minimum:	0.00
No. of Points:	42

LUMINAIRE INFORMATION

Applied Circuits:	A, B
No. of Luminaires:	50
Total Load:	50.7 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Cabrillo High School Baseball

Lompoc, CA.

EQUIPMENT LAYOUT

INCLUDES:
· Baseball

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	A1	70'	-	70'	TLC-LED-400	1*
				15.5'	TLC-BT-575	1
				70'	TLC-LED-1200	4
1	A2	70'	-	70'	TLC-LED-400	2*
				15.5'	TLC-BT-575	1
				70'	TLC-LED-1200	4
1	B1	80'	-	80'	TLC-LED-1500	6
				15.5'	TLC-BT-575	1
				60'	TLC-LED-600	1
				80'	TLC-LED-900	2
1	B2	80'	-	80'	TLC-LED-1500	6
				15.5'	TLC-BT-575	1
				60'	TLC-LED-900	2
				60'	TLC-LED-400	1
				80'	TLC-LED-900	2
4	C1-C2	70'	-	70'	TLC-LED-900	4
	D1-D2			15.5'	TLC-BT-575	1
8	TOTALS					55

* This structure utilizes a back-to-back mounting configuration

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (HO)	220 (HO)	240 (HO)	277 (SO)	347 (SO)	380 (SO)	480 (SO)
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5

SCALE IN FEET 1 : 120

0' 120' 240'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: · File #202333A · 21-Aug-20

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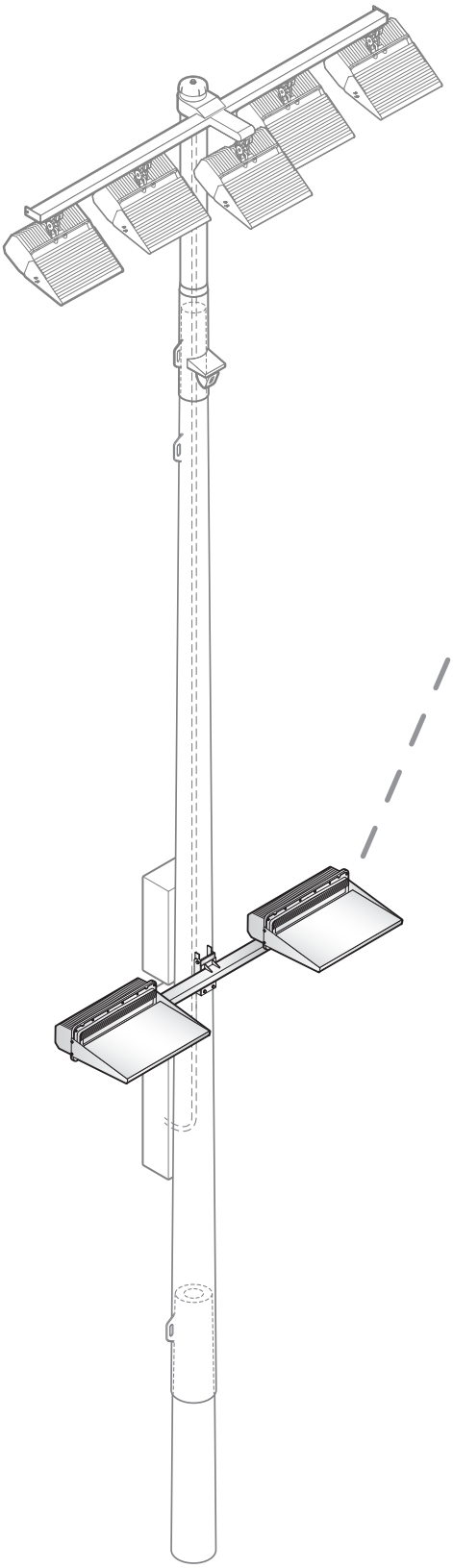
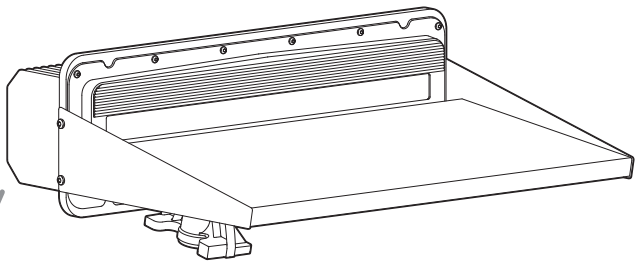
Luminaire and Driver Components – TLC-BT-575





Luminaire Data

Weight (luminaire)	34 lb (15 kg)
UL listing number	E338094
UL Listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
Ingress protection, luminaire	IP65
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)

Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
L90 (13.5k)	>81,000 h
L80 (13.5k)	>81,000 h
L70 (13.5k)	>81,000 h
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min
Lumens[1]	52,000

Footnotes:

1) Incorporates appropriate dirt depreciation factor for life of luminaire.

All components from foundation to poletop are designed to work together in Light-Structure System™ to ensure reliable, trouble-free operation.

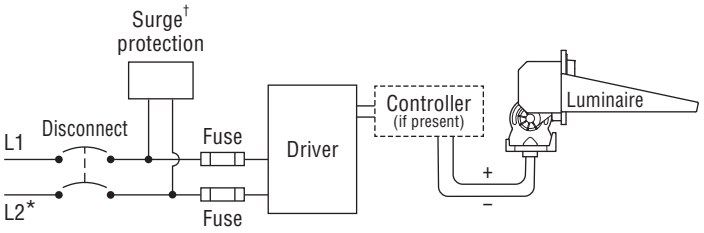
Luminaire and Driver Components – TLC-BT-575

Driver Data

Electrical Data

Rated wattage[1]	
Per driver	575 W
Per luminaire	575 W
Number of luminaires per driver	1
Starting (inrush) current	<40 A, 256 µs
Fuse rating	15 A
UL, IEC ambient temperature rating, electrical components enclosure	50°C (122°F)
Ingress protection, electrical components enclosure	IP54
Efficiency	95%

Typical Wiring



* If L2 (com) is neutral then not switched or fused.
† Not present if indoor installation.

	200 Vac 50/60 Hz	208 Vac 60 Hz	220 Vac 50/60 Hz	230 Vac 50 Hz	240 Vac 50/60 Hz	277 Vac 60 Hz	347 Vac 60 Hz	380 Vac 50/60 Hz	400 Vac 50 Hz	415 Vac 50 Hz	480 Vac 60 Hz
Max operating current[2] per luminaire	3.48 A	3.35 A	3.16 A	3.03 A	2.90 A	2.51 A	2.01 A	1.83 A	1.74 A	1.68 A	1.45 A

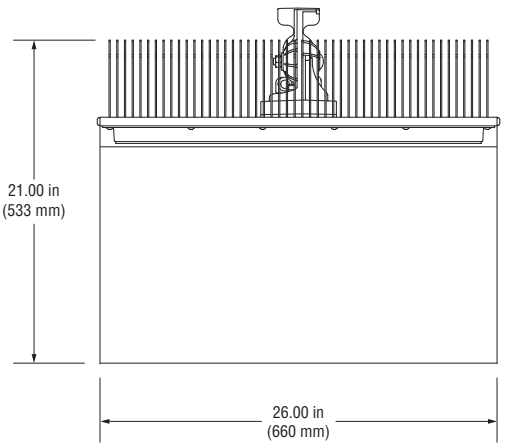
Footnotes:

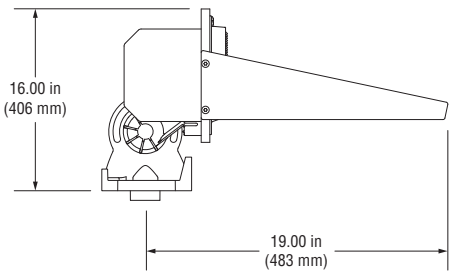
1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25˚C ambient temperature environment.

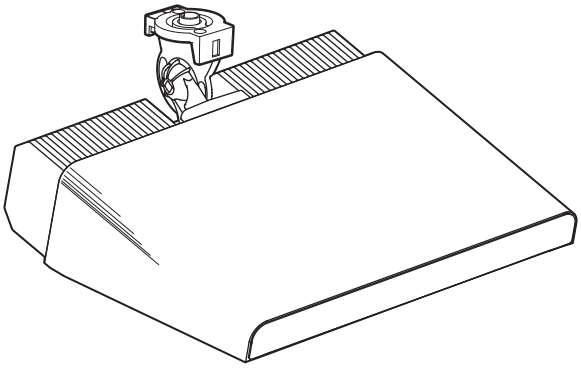
2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

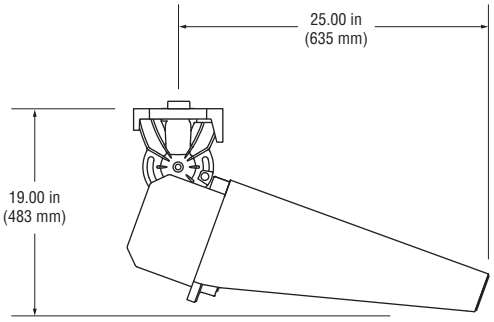
Notes

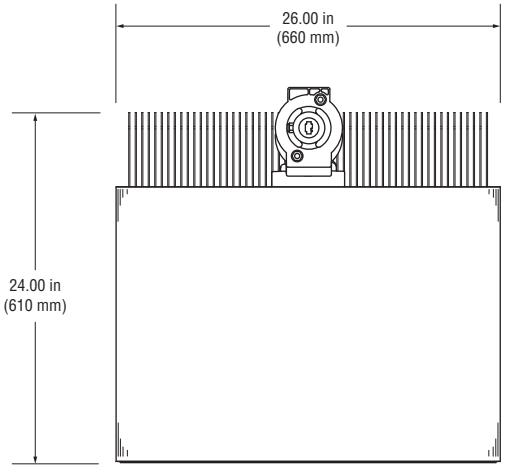
1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See Musco *Control System Summary* for circuit information.











Luminaire Data

Weight (luminaire)	45 lb (20 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL, IEC ambient temperature rating, luminaire	50°C (122°F)

Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
L90 (13.5k)	>81,000 h
L80 (13.5k)	>81,000 h
L70 (13.5k)	>81,000 h
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min
Lumens[1]	136,000

Footnotes:

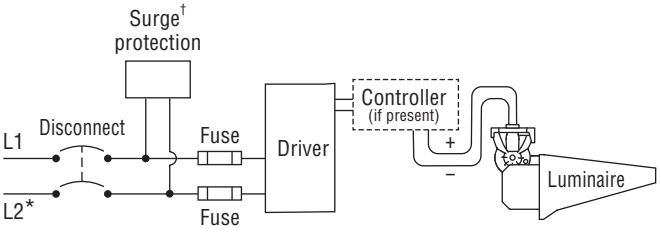
1) Incorporates appropriate dirt depreciation factor for life of luminaire.

Driver Data

Electrical Data

Rated wattage[1]	
Per driver	1170 W
Per luminaire	1170 W
Number of luminaires per driver	1
Starting (inrush) current	<40 A, 256 µs
Fuse rating	15 A
UL, IEC ambient temperature rating, electrical components enclosure	50°C (122°F)
Ingress protection, electrical components enclosure	IP54
Efficiency	95%
Dimming mode	optional
Range, energy consumption	14 – 100%
Range, light output	19 – 100%

Typical Wiring



* If L2 (com) is neutral then not switched or fused.
† Not present if indoor installation.

	200 Vac 50/60 Hz	208 Vac 60 Hz	220 Vac 50/60 Hz	230 Vac 50 Hz	240 Vac 50/60 Hz	277 Vac 60 Hz	347 Vac 60 Hz	380 Vac 50/60 Hz	400 Vac 50 Hz	415 Vac 50 Hz	480 Vac 60 Hz
Max operating current per luminaire[2]	7.26 A	6.98 A	6.60 A	6.31 A	6.05 A	5.24 A	4.18 A	3.82 A	3.63 A	3.50 A	3.03 A

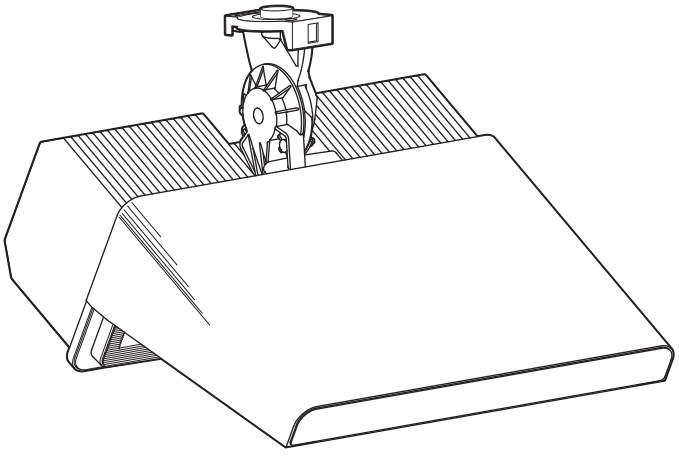
Footnotes:

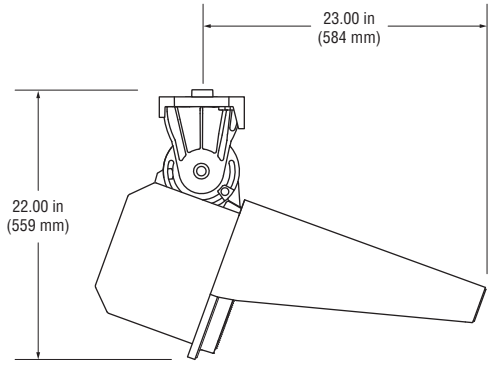
1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.

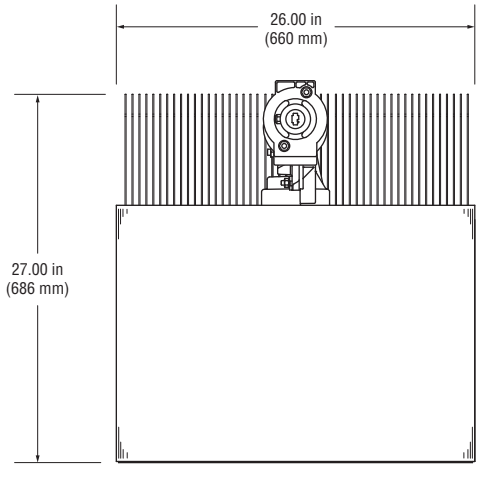
2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.







Luminaire Data

Weight (luminaire)	67 lb (30 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL, IEC ambient temperature rating, luminaire	50°C (122°F)

Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
L90 (13.5k)	>81,000 h
L80 (13.5k)	>81,000 h
L70 (13.5k)	>81,000 h
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min
Lumens[1]	160,000

Footnotes:

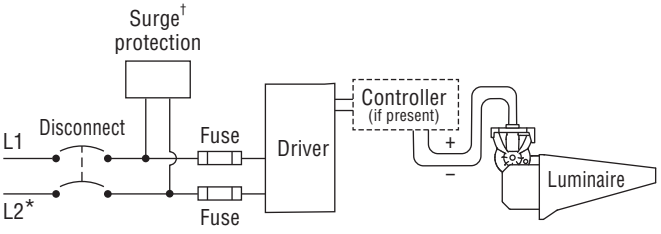
1) Incorporates appropriate dirt depreciation factor for life of luminaire.

Driver Data

Electrical Data

Rated wattage[1]	
Per driver	1430 W
Per luminaire	1430 W
Number of luminaires per driver	1
Starting (inrush) current	<40 A, 256 µs
Fuse rating	15 A
UL, IEC ambient temperature rating, electrical components enclosure	50°C (122°F)
Ingress protection, electrical components enclosure	IP54
Efficiency	95%
Dimming mode	optional
Range, energy consumption	12 – 100%
Range, light output	17 – 100%

Typical Wiring



* If L2 (com) is neutral then not switched or fused.
† Not present if indoor installation.

	200 Vac 50/60 Hz	208 Vac 60 Hz	220 Vac 50/60 Hz	230 Vac 50 Hz	240 Vac 50/60 Hz	277 Vac 60 Hz	347 Vac 60 Hz	380 Vac 50/60 Hz	400 Vac 50 Hz	415 Vac 50 Hz	480 Vac 60 Hz
Max operating current per luminaire[2]	8.86 A	8.52 A	8.06 A	7.71 A	7.39 A	6.40 A	5.11 A	4.67 A	4.43 A	4.27 A	3.70 A

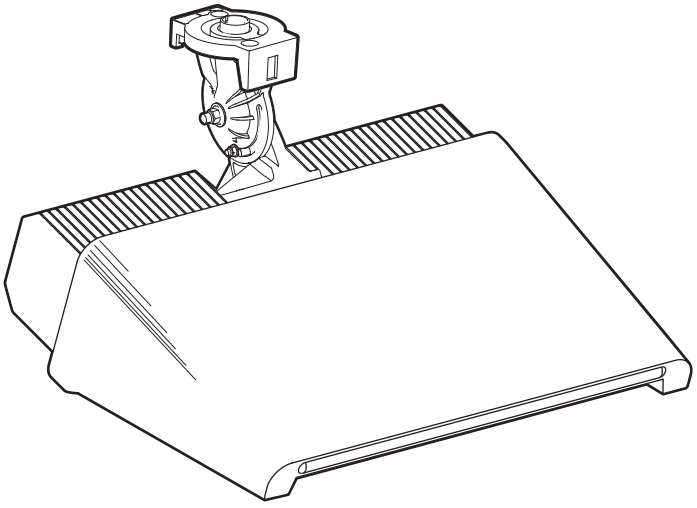
Footnotes:

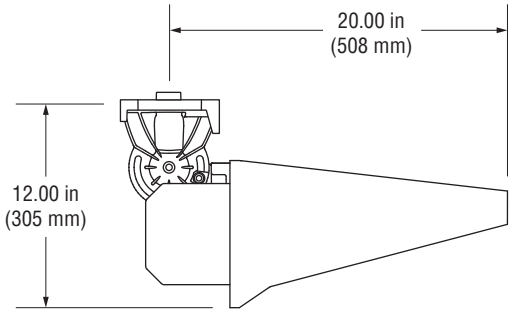
1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.

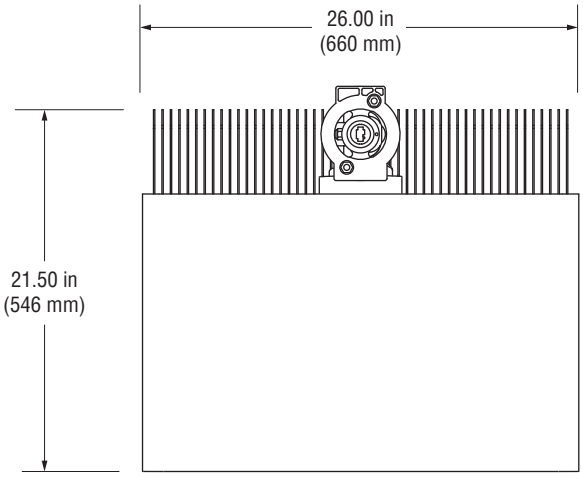
2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.







Luminaire Data

Weight (luminaire)	40 lb (18 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL, IEC ambient temperature rating, luminaire	50°C (122°F)

Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
L90 (13.5k)	>81,000 h
L80 (13.5k)	>81,000 h
L70 (13.5k)	>81,000 h
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min
Lumens[1]	89,600

Footnotes:

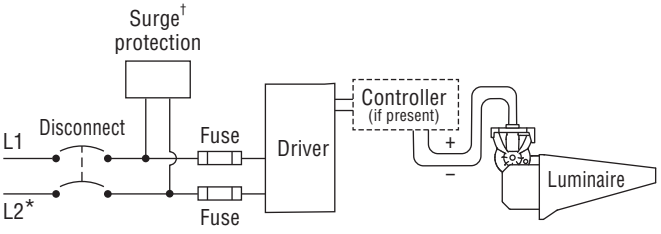
1) Incorporates appropriate dirt depreciation factor for life of luminaire.

Driver Data

Electrical Data

Rated wattage[1]	
Per driver	890 W
Per luminaire	890 W
Number of luminaires per driver	1
Starting (inrush) current	<40 A, 256 µs
Fuse rating	15 A
UL, IEC ambient temperature rating, electrical components enclosure	50°C (122°F)
Ingress protection, electrical components enclosure	IP54
Efficiency	95%
Dimming mode	optional
Range, energy consumption	25 – 100%
Range, light output	30 – 100%

Typical Wiring



* If L2 (com) is neutral then not switched or fused.
† Not present if indoor installation.

	200 Vac 50/60 Hz	208 Vac 60 Hz	220 Vac 50/60 Hz	230 Vac 50 Hz	240 Vac 50/60 Hz	277 Vac 60 Hz	347 Vac 60 Hz	380 Vac 50/60 Hz	400 Vac 50 Hz	415 Vac 50 Hz	480 Vac 60 Hz
Max operating current per luminaire[2]	5.50 A	5.29 A	5.00 A	4.78 A	4.58 A	3.97 A	3.17 A	2.90 A	2.75 A	2.65 A	2.29 A

Footnotes:

1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.

2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.

Appendix B

Modeling Data for Air Quality, Greenhouse Gas, Energy

Table of Contents

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Cabrillo High School Lighting Project

Santa Barbara County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	1.00	1000sqft	0.32	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	37
Climate Zone	4			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use as surrogate for construction and operational assumptions.

Construction Phase - Based on LUSD provided information.

Off-road Equipment - Based on LUSD provided information.

Off-road Equipment - Based on LUSD provided information.

Trips and VMT - CalEEMod defaults.

Vehicle Trips - No mobile trips during operation.

Consumer Products - No consumer products.

Area Coating - No architectural coatings

Landscape Equipment - No landscaping.

Energy Use - Based on using lights 5 hours per day, 365 days per year.

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water And Wastewater - No water use.

Solid Waste - No solid waste.

Construction Off-road Equipment Mitigation - In accordance with SBCAPCD Rule 345.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	500	0
tblAreaCoating	Area_Nonresidential_Interior	1500	0
tblConstructionPhase	NumDays	100.00	41.00
tblConstructionPhase	PhaseEndDate	5/6/2022	2/28/2022
tblConstructionPhase	PhaseStartDate	12/18/2021	1/1/2022
tblEnergyUse	LightingElect	3.08	96.51
tblEnergyUse	NT24E	3.70	0.00
tblEnergyUse	NT24NG	6.67	0.00
tblEnergyUse	T24E	1.32	0.00
tblEnergyUse	T24NG	19.51	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOnRoadDust	PhaseName	Building Construction	Light Fixture Installation
tblSolidWaste	SolidWasteGenerationRate	0.03	0.00
tblTripsAndVMT	PhaseName		Utility Trenching
tblTripsAndVMT	PhaseName	Building Construction	Light Fixture Installation
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	10.71	0.00
tblVehicleTrips	SU_TR	10.71	0.00
tblVehicleTrips	WD_TR	10.71	0.00
tblWater	IndoorWaterUseRate	430,770.12	0.00
tblWater	OutdoorWaterUseRate	27,495.96	0.00

2.0 Emissions Summary

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0129	0.1208	0.1101	1.5000e-004	8.1000e-004	8.0900e-003	8.9000e-003	2.2000e-004	7.4500e-003	7.6700e-003	0.0000	13.5036	13.5036	4.0900e-003	8.0000e-005	13.6308
2022	0.0177	0.1635	0.1949	3.3000e-004	1.2700e-003	7.8300e-003	9.1000e-003	3.4000e-004	7.2500e-003	7.5900e-003	0.0000	28.5730	28.5730	8.5500e-003	4.0000e-005	28.7975
Maximum	**0.0177**	**0.1635**	**0.1949**	**3.3000e-004**	**1.2700e-003**	**8.0900e-003**	**9.1000e-003**	**3.4000e-004**	**7.4500e-003**	**7.6700e-003**	**0.0000**	**28.5730**	**28.5730**	**8.5500e-003**	**8.0000e-005**	**28.7975**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0129	0.1208	0.1101	1.5000e-004	8.1000e-004	8.0900e-003	8.9000e-003	2.2000e-004	7.4500e-003	7.6700e-003	0.0000	13.5036	13.5036	4.0900e-003	8.0000e-005	13.6308
2022	0.0177	0.1635	0.1949	3.3000e-004	1.2700e-003	7.8300e-003	9.1000e-003	3.4000e-004	7.2500e-003	7.5900e-003	0.0000	28.5730	28.5730	8.5500e-003	4.0000e-005	28.7975
Maximum	**0.0177**	**0.1635**	**0.1949**	**3.3000e-004**	**1.2700e-003**	**8.0900e-003**	**9.1000e-003**	**3.4000e-004**	**7.4500e-003**	**7.6700e-003**	**0.0000**	**28.5730**	**28.5730**	**8.5500e-003**	**8.0000e-005**	**28.7975**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-1-2021**	**2-28-2022**	0.3166	0.3166
		Highest	0.3166	0.3166

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	17.1149	17.1149	1.4400e-003	1.8000e-004	17.2032
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.9100e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**17.1149**	**17.1149**	**1.4400e-003**	**1.8000e-004**	**17.2032**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	17.1149	17.1149	1.4400e-003	1.8000e-004	17.2032
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.9100e-003**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**17.1149**	**17.1149**	**1.4400e-003**	**1.8000e-004**	**17.2032**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Utility Trenching	Trenching	12/1/2021	12/30/2021	5	22	
2	Light Fixture Installation	Building Construction	1/1/2022	2/28/2022	5	41	

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Light Fixture Installation	Cement and Mortar Mixers	2	8.00	9	0.56
Light Fixture Installation	Excavators	1	8.00	158	0.38
Utility Trenching	Trenchers	2	8.00	78	0.50
Light Fixture Installation	Cranes	1	4.00	231	0.29
Light Fixture Installation	Forklifts	0	6.00	89	0.20
Utility Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Light Fixture Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Utility Trenching	4	10.00	2.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Light Fixture Installation	6	10.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Utility Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0125	0.1190	0.1071	1.4000e-004		8.0700e-003	8.0700e-003		7.4200e-003	7.4200e-003	0.0000	12.5301	12.5301	4.0500e-003	0.0000	12.6314
Total	**0.0125**	**0.1190**	**0.1071**	**1.4000e-004**		**8.0700e-003**	**8.0700e-003**		**7.4200e-003**	**7.4200e-003**	**0.0000**	**12.5301**	**12.5301**	**4.0500e-003**	**0.0000**	**12.6314**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	1.5100e-003	4.8000e-004	0.0000	1.3000e-004	2.0000e-005	1.5000e-004	4.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.4239	0.4239	2.0000e-005	6.0000e-005	0.4428
Worker	3.3000e-004	2.6000e-004	2.5400e-003	1.0000e-005	6.8000e-004	0.0000	6.8000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5496	0.5496	2.0000e-005	2.0000e-005	0.5566
Total	**4.0000e-004**	**1.7700e-003**	**3.0200e-003**	**1.0000e-005**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**2.2000e-004**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**0.9735**	**0.9735**	**4.0000e-005**	**8.0000e-005**	**0.9994**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Utility Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0125	0.1190	0.1071	1.4000e-004		8.0700e-003	8.0700e-003		7.4200e-003	7.4200e-003	0.0000	12.5301	12.5301	4.0500e-003	0.0000	12.6314
Total	**0.0125**	**0.1190**	**0.1071**	**1.4000e-004**		**8.0700e-003**	**8.0700e-003**		**7.4200e-003**	**7.4200e-003**	**0.0000**	**12.5301**	**12.5301**	**4.0500e-003**	**0.0000**	**12.6314**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	1.5100e-003	4.8000e-004	0.0000	1.3000e-004	2.0000e-005	1.5000e-004	4.0000e-005	2.0000e-005	6.0000e-005	0.0000	0.4239	0.4239	2.0000e-005	6.0000e-005	0.4428
Worker	3.3000e-004	2.6000e-004	2.5400e-003	1.0000e-005	6.8000e-004	0.0000	6.8000e-004	1.8000e-004	0.0000	1.8000e-004	0.0000	0.5496	0.5496	2.0000e-005	2.0000e-005	0.5566
Total	**4.0000e-004**	**1.7700e-003**	**3.0200e-003**	**1.0000e-005**	**8.1000e-004**	**2.0000e-005**	**8.3000e-004**	**2.2000e-004**	**2.0000e-005**	**2.4000e-004**	**0.0000**	**0.9735**	**0.9735**	**4.0000e-005**	**8.0000e-005**	**0.9994**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Light Fixture Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0171	0.1631	0.1905	3.2000e-004		7.8200e-003	7.8200e-003		7.2400e-003	7.2400e-003	0.0000	27.5787	27.5787	8.5100e-003	0.0000	27.7914
Total	**0.0171**	**0.1631**	**0.1905**	**3.2000e-004**		**7.8200e-003**	**7.8200e-003**		**7.2400e-003**	**7.2400e-003**	**0.0000**	**27.5787**	**27.5787**	**8.5100e-003**	**0.0000**	**27.7914**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.3000e-004	4.3500e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	0.9943	0.9943	4.0000e-005	4.0000e-005	1.0062
Total	**5.7000e-004**	**4.3000e-004**	**4.3500e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**0.9943**	**0.9943**	**4.0000e-005**	**4.0000e-005**	**1.0062**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Light Fixture Installation - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0171	0.1631	0.1905	3.2000e-004		7.8200e-003	7.8200e-003		7.2400e-003	7.2400e-003	0.0000	27.5787	27.5787	8.5100e-003	0.0000	27.7913
Total	**0.0171**	**0.1631**	**0.1905**	**3.2000e-004**		**7.8200e-003**	**7.8200e-003**		**7.2400e-003**	**7.2400e-003**	**0.0000**	**27.5787**	**27.5787**	**8.5100e-003**	**0.0000**	**27.7913**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7000e-004	4.3000e-004	4.3500e-003	1.0000e-005	1.2700e-003	1.0000e-005	1.2700e-003	3.4000e-004	1.0000e-005	3.4000e-004	0.0000	0.9943	0.9943	4.0000e-005	4.0000e-005	1.0062
Total	**5.7000e-004**	**4.3000e-004**	**4.3500e-003**	**1.0000e-005**	**1.2700e-003**	**1.0000e-005**	**1.2700e-003**	**3.4000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**0.9943**	**0.9943**	**4.0000e-005**	**4.0000e-005**	**1.0062**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	6.60	5.50	6.40	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.487868	0.051904	0.208483	0.155237	0.030766	0.007315	0.011402	0.006111	0.000989	0.000607	0.031259	0.003553	0.004508

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	17.1149	17.1149	1.4400e-003	1.8000e-004	17.2032
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	17.1149	17.1149	1.4400e-003	1.8000e-004	17.2032
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	96506	17.1149	1.4400e-003	1.8000e-004	17.2032
Total		**17.1149**	**1.4400e-003**	**1.8000e-004**	**17.2032**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	96506	17.1149	1.4400e-003	1.8000e-004	17.2032
Total		**17.1149**	**1.4400e-003**	**1.8000e-004**	**17.2032**

6.0 Area Detail

6.1 Mitigation Measures Area

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	3.9100e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**3.9100e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**3.9100e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Cabrillo High School Lighting Project

Santa Barbara County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	1.00	1000sqft	0.32	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	37
Climate Zone	4			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use as surrogate for construction and operational assumptions.

Construction Phase - Based on LUSD provided information.

Off-road Equipment - Based on LUSD provided information.

Off-road Equipment - Based on LUSD provided information.

Trips and VMT - CalEEMod defaults.

Vehicle Trips - No mobile trips during operation.

Consumer Products - No consumer products.

Area Coating - No architectural coatings

Landscape Equipment - No landscaping.

Energy Use - Based on using lights 5 hours per day, 365 days per year.

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water And Wastewater - No water use.

Solid Waste - No solid waste.

Construction Off-road Equipment Mitigation - In accordance with SBCAPCD Rule 345.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	500	0
tblAreaCoating	Area_Nonresidential_Interior	1500	0
tblConstructionPhase	NumDays	100.00	41.00
tblConstructionPhase	PhaseEndDate	5/6/2022	2/28/2022
tblConstructionPhase	PhaseStartDate	12/18/2021	1/1/2022
tblEnergyUse	LightingElect	3.08	96.51
tblEnergyUse	NT24E	3.70	0.00
tblEnergyUse	NT24NG	6.67	0.00
tblEnergyUse	T24E	1.32	0.00
tblEnergyUse	T24NG	19.51	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOnRoadDust	PhaseName	Building Construction	Light Fixture Installation
tblSolidWaste	SolidWasteGenerationRate	0.03	0.00
tblTripsAndVMT	PhaseName		Utility Trenching
tblTripsAndVMT	PhaseName	Building Construction	Light Fixture Installation
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	10.71	0.00
tblVehicleTrips	SU_TR	10.71	0.00
tblVehicleTrips	WD_TR	10.71	0.00
tblWater	IndoorWaterUseRate	430,770.12	0.00
tblWater	OutdoorWaterUseRate	27,495.96	0.00

2.0 Emissions Summary

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.1754	10.9699	10.0047	0.0139	0.0750	0.7359	0.8109	0.0202	0.6771	0.6973	0.0000	1,354.2916	1,354.2916	0.4101	8.2100e-003	1,366.9896
2022	0.8631	7.9754	9.5037	0.0162	0.0632	0.3820	0.4451	0.0168	0.3537	0.3705	0.0000	1,537.4663	1,537.4663	0.4595	1.8100e-003	1,549.4944
Maximum	**1.1754**	**10.9699**	**10.0047**	**0.0162**	**0.0750**	**0.7359**	**0.8109**	**0.0202**	**0.6771**	**0.6973**	**0.0000**	**1,537.4663**	**1,537.4663**	**0.4595**	**8.2100e-003**	**1,549.4944**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.1754	10.9699	10.0047	0.0139	0.0750	0.7359	0.8109	0.0202	0.6771	0.6973	0.0000	1,354.2916	1,354.2916	0.4101	8.2100e-003	1,366.9896
2022	0.8631	7.9754	9.5037	0.0162	0.0632	0.3820	0.4451	0.0168	0.3537	0.3705	0.0000	1,537.4663	1,537.4663	0.4595	1.8100e-003	1,549.4944
Maximum	**1.1754**	**10.9699**	**10.0047**	**0.0162**	**0.0750**	**0.7359**	**0.8109**	**0.0202**	**0.6771**	**0.6973**	**0.0000**	**1,537.4663**	**1,537.4663**	**0.4595**	**8.2100e-003**	**1,549.4944**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Utility Trenching	Trenching	12/1/2021	12/30/2021	5	22	
2	Light Fixture Installation	Building Construction	1/1/2022	2/28/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Light Fixture Installation	Cement and Mortar Mixers	2	8.00	9	0.56
Light Fixture Installation	Excavators	1	8.00	158	0.38
Utility Trenching	Trenchers	2	8.00	78	0.50
Light Fixture Installation	Cranes	1	4.00	231	0.29
Light Fixture Installation	Forklifts	0	6.00	89	0.20
Utility Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Light Fixture Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Utility Trenching	4	10.00	2.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Light Fixture Installation	6	10.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Utility Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749		1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**		**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Utility Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1330	0.0428	3.9000e-004	0.0119	1.9800e-003	0.0138	3.4100e-003	1.9000e-003	5.3100e-003		42.4729	42.4729	1.7000e-003	6.2400e-003	44.3737
Worker	0.0294	0.0212	0.2288	5.6000e-004	0.0632	3.5000e-004	0.0635	0.0168	3.2000e-004	0.0171		56.1736	56.1736	2.3300e-003	1.9700e-003	56.8182
Total	**0.0359**	**0.1541**	**0.2716**	**9.5000e-004**	**0.0750**	**2.3300e-003**	**0.0773**	**0.0202**	**2.2200e-003**	**0.0224**		**98.6465**	**98.6465**	**4.0300e-003**	**8.2100e-003**	**101.1919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749	0.0000	1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**	**0.0000**	**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Utility Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1330	0.0428	3.9000e-004	0.0119	1.9800e-003	0.0138	3.4100e-003	1.9000e-003	5.3100e-003		42.4729	42.4729	1.7000e-003	6.2400e-003	44.3737
Worker	0.0294	0.0212	0.2288	5.6000e-004	0.0632	3.5000e-004	0.0635	0.0168	3.2000e-004	0.0171		56.1736	56.1736	2.3300e-003	1.9700e-003	56.8182
Total	**0.0359**	**0.1541**	**0.2716**	**9.5000e-004**	**0.0750**	**2.3300e-003**	**0.0773**	**0.0202**	**2.2200e-003**	**0.0224**		**98.6465**	**98.6465**	**4.0300e-003**	**8.2100e-003**	**101.1919**

3.3 Light Fixture Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8358	7.9568	9.2941	0.0157		0.3816	0.3816		0.3534	0.3534		1,482.9410	1,482.9410	0.4574		1,494.3766
Total	**0.8358**	**7.9568**	**9.2941**	**0.0157**		**0.3816**	**0.3816**		**0.3534**	**0.3534**		**1,482.9410**	**1,482.9410**	**0.4574**		**1,494.3766**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Light Fixture Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0273	0.0187	0.2096	5.4000e-004	0.0632	3.3000e-004	0.0635	0.0168	3.0000e-004	0.0171		54.5253	54.5253	2.1000e-003	1.8100e-003	55.1178
Total	**0.0273**	**0.0187**	**0.2096**	**5.4000e-004**	**0.0632**	**3.3000e-004**	**0.0635**	**0.0168**	**3.0000e-004**	**0.0171**		**54.5253**	**54.5253**	**2.1000e-003**	**1.8100e-003**	**55.1178**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8358	7.9568	9.2941	0.0157		0.3816	0.3816		0.3534	0.3534	0.0000	1,482.9410	1,482.9410	0.4574		1,494.3766
Total	**0.8358**	**7.9568**	**9.2941**	**0.0157**		**0.3816**	**0.3816**		**0.3534**	**0.3534**	**0.0000**	**1,482.9410**	**1,482.9410**	**0.4574**		**1,494.3766**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Light Fixture Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0273	0.0187	0.2096	5.4000e-004	0.0632	3.3000e-004	0.0635	0.0168	3.0000e-004	0.0171		54.5253	54.5253	2.1000e-003	1.8100e-003	55.1178
Total	**0.0273**	**0.0187**	**0.2096**	**5.4000e-004**	**0.0632**	**3.3000e-004**	**0.0635**	**0.0168**	**3.0000e-004**	**0.0171**		**54.5253**	**54.5253**	**2.1000e-003**	**1.8100e-003**	**55.1178**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	6.60	5.50	6.40	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.487868	0.051904	0.208483	0.155237	0.030766	0.007315	0.011402	0.006111	0.000989	0.000607	0.031259	0.003553	0.004508

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Cabrillo High School Lighting Project

Santa Barbara County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	1.00	1000sqft	0.32	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.9	**Precipitation Freq (Days)**	37
Climate Zone	4			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Land use as surrogate for construction and operational assumptions.

Construction Phase - Based on LUSD provided information.

Off-road Equipment - Based on LUSD provided information.

Off-road Equipment - Based on LUSD provided information.

Trips and VMT - CalEEMod defaults.

Vehicle Trips - No mobile trips during operation.

Consumer Products - No consumer products.

Area Coating - No architectural coatings

Landscape Equipment - No landscaping.

Energy Use - Based on using lights 5 hours per day, 365 days per year.

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Water And Wastewater - No water use.

Solid Waste - No solid waste.

Construction Off-road Equipment Mitigation - In accordance with SBCAPCD Rule 345.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	500	0
tblAreaCoating	Area_Nonresidential_Interior	1500	0
tblConstructionPhase	NumDays	100.00	41.00
tblConstructionPhase	PhaseEndDate	5/6/2022	2/28/2022
tblConstructionPhase	PhaseStartDate	12/18/2021	1/1/2022
tblEnergyUse	LightingElect	3.08	96.51
tblEnergyUse	NT24E	3.70	0.00
tblEnergyUse	NT24NG	6.67	0.00
tblEnergyUse	T24E	1.32	0.00
tblEnergyUse	T24NG	19.51	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOffRoadEquipment	PhaseName	Building Construction	Light Fixture Installation
tblOnRoadDust	PhaseName	Building Construction	Light Fixture Installation
tblSolidWaste	SolidWasteGenerationRate	0.03	0.00
tblTripsAndVMT	PhaseName		Utility Trenching
tblTripsAndVMT	PhaseName	Building Construction	Light Fixture Installation
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	ST_TR	10.71	0.00
tblVehicleTrips	SU_TR	10.71	0.00
tblVehicleTrips	WD_TR	10.71	0.00
tblWater	IndoorWaterUseRate	430,770.12	0.00
tblWater	OutdoorWaterUseRate	27,495.96	0.00

2.0 Emissions Summary

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.1778	10.9764	10.0136	0.0139	0.0750	0.7359	0.8109	0.0202	0.6771	0.6973	0.0000	1,353.1431	1,353.1431	0.4104	8.4000e-003	1,365.9052
2022	0.8655	7.9781	9.5116	0.0162	0.0632	0.3820	0.4451	0.0168	0.3537	0.3705	0.0000	1,536.3521	1,536.3521	0.4598	1.9800e-003	1,548.4370
Maximum	**1.1778**	**10.9764**	**10.0136**	**0.0162**	**0.0750**	**0.7359**	**0.8109**	**0.0202**	**0.6771**	**0.6973**	**0.0000**	**1,536.3521**	**1,536.3521**	**0.4598**	**8.4000e-003**	**1,548.4370**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.1778	10.9764	10.0136	0.0139	0.0750	0.7359	0.8109	0.0202	0.6771	0.6973	0.0000	1,353.1431	1,353.1431	0.4104	8.4000e-003	1,365.9052
2022	0.8655	7.9781	9.5116	0.0162	0.0632	0.3820	0.4451	0.0168	0.3537	0.3705	0.0000	1,536.3521	1,536.3521	0.4598	1.9800e-003	1,548.4370
Maximum	**1.1778**	**10.9764**	**10.0136**	**0.0162**	**0.0750**	**0.7359**	**0.8109**	**0.0202**	**0.6771**	**0.6973**	**0.0000**	**1,536.3521**	**1,536.3521**	**0.4598**	**8.4000e-003**	**1,548.4370**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**	**0.0000**	**2.3000e-004**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Utility Trenching	Trenching	12/1/2021	12/30/2021	5	22	
2	Light Fixture Installation	Building Construction	1/1/2022	2/28/2022	5	41	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Light Fixture Installation	Cement and Mortar Mixers	2	8.00	9	0.56
Light Fixture Installation	Excavators	1	8.00	158	0.38
Utility Trenching	Trenchers	2	8.00	78	0.50
Light Fixture Installation	Cranes	1	4.00	231	0.29
Light Fixture Installation	Forklifts	0	6.00	89	0.20
Utility Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Light Fixture Installation	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Utility Trenching	4	10.00	2.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Light Fixture Installation	6	10.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Utility Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749		1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**		**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Utility Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1364	0.0438	3.9000e-004	0.0119	1.9900e-003	0.0139	3.4100e-003	1.9000e-003	5.3100e-003		42.4758	42.4758	1.7000e-003	6.2400e-003	44.3790
Worker	0.0318	0.0242	0.2367	5.4000e-004	0.0632	3.5000e-004	0.0635	0.0168	3.2000e-004	0.0171		55.0221	55.0221	2.5700e-003	2.1600e-003	55.7285
Total	**0.0384**	**0.1606**	**0.2805**	**9.3000e-004**	**0.0750**	**2.3400e-003**	**0.0774**	**0.0202**	**2.2200e-003**	**0.0224**		**97.4979**	**97.4979**	**4.2700e-003**	**8.4000e-003**	**100.1075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1395	10.8158	9.7331	0.0130		0.7336	0.7336		0.6749	0.6749	0.0000	1,255.6452	1,255.6452	0.4061		1,265.7977
Total	**1.1395**	**10.8158**	**9.7331**	**0.0130**		**0.7336**	**0.7336**		**0.6749**	**0.6749**	**0.0000**	**1,255.6452**	**1,255.6452**	**0.4061**		**1,265.7977**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Utility Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1364	0.0438	3.9000e-004	0.0119	1.9900e-003	0.0139	3.4100e-003	1.9000e-003	5.3100e-003		42.4758	42.4758	1.7000e-003	6.2400e-003	44.3790
Worker	0.0318	0.0242	0.2367	5.4000e-004	0.0632	3.5000e-004	0.0635	0.0168	3.2000e-004	0.0171		55.0221	55.0221	2.5700e-003	2.1600e-003	55.7285
Total	**0.0384**	**0.1606**	**0.2805**	**9.3000e-004**	**0.0750**	**2.3400e-003**	**0.0774**	**0.0202**	**2.2200e-003**	**0.0224**		**97.4979**	**97.4979**	**4.2700e-003**	**8.4000e-003**	**100.1075**

3.3 Light Fixture Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8358	7.9568	9.2941	0.0157		0.3816	0.3816		0.3534	0.3534		1,482.9410	1,482.9410	0.4574		1,494.3766
Total	**0.8358**	**7.9568**	**9.2941**	**0.0157**		**0.3816**	**0.3816**		**0.3534**	**0.3534**		**1,482.9410**	**1,482.9410**	**0.4574**		**1,494.3766**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Light Fixture Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0296	0.0213	0.2175	5.3000e-004	0.0632	3.3000e-004	0.0635	0.0168	3.0000e-004	0.0171		53.4111	53.4111	2.3200e-003	1.9800e-003	54.0604
Total	**0.0296**	**0.0213**	**0.2175**	**5.3000e-004**	**0.0632**	**3.3000e-004**	**0.0635**	**0.0168**	**3.0000e-004**	**0.0171**		**53.4111**	**53.4111**	**2.3200e-003**	**1.9800e-003**	**54.0604**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8358	7.9568	9.2941	0.0157		0.3816	0.3816		0.3534	0.3534	0.0000	1,482.9410	1,482.9410	0.4574		1,494.3766
Total	**0.8358**	**7.9568**	**9.2941**	**0.0157**		**0.3816**	**0.3816**		**0.3534**	**0.3534**	**0.0000**	**1,482.9410**	**1,482.9410**	**0.4574**		**1,494.3766**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Light Fixture Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0296	0.0213	0.2175	5.3000e-004	0.0632	3.3000e-004	0.0635	0.0168	3.0000e-004	0.0171		53.4111	53.4111	2.3200e-003	1.9800e-003	54.0604
Total	**0.0296**	**0.0213**	**0.2175**	**5.3000e-004**	**0.0632**	**3.3000e-004**	**0.0635**	**0.0168**	**3.0000e-004**	**0.0171**		**53.4111**	**53.4111**	**2.3200e-003**	**1.9800e-003**	**54.0604**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	6.60	5.50	6.40	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.487868	0.051904	0.208483	0.155237	0.030766	0.007315	0.011402	0.006111	0.000989	0.000607	0.031259	0.003553	0.004508

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Arena	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0214	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	**0.0214**	**0.0000**	**1.0000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.2000e-004**	**2.2000e-004**	**0.0000**		**2.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Cabrillo High School Lighting Project - Santa Barbara County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Appendix C
Cultural Resources Data

Cultural Resources Records Confidential Appendix

Available Upon Request to Eligible Recipients

Appendix D

Noise Modelling Data

NOISE APPENDIX

Noise Field Data

FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT: CABRILLO HS BASEBALL LIGHTING — PROJECT #: 13601
SITE ID:
SITE ADDRESS: — OBSERVER(S): DAVID ORTEGA
START DATE: 08/10/2021 — END DATE: 08/10/2021
START TIME: 9:28 AM — END TIME: 9:43 AM

METEOROLOGICAL CONDITIONS

TEMP: 63 F — HUMIDITY: 75 % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: 2 MPH — DIR. N NE S SE S (SW) W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO II — TYPE 1 (2) — SERIAL #: P0221052801
CALIBRATOR: RION NC-74 — SERIAL #: 34678576
CALIBRATION CHECK — PRE-MEASUREMENT: 94 dBA SPL — POST-MEASUREMENT: 94 dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-1	9:28AM	9:43AM	57.4	72	34.5	40.7	49	61.8	

COMMENTS

Measurement taken at 4270 Constellation Road. Primary noise source is Traffic on Constellation Rd. Periodic barks from dog inside 4270 Residence.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ARTERIAL — DIST. TO RDWY C/L OR (EOP): 10 feet

TRAFFIC COUNT DURATION: ___ MIN — SPEED: 35 MPH — ___ MIN — SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	58			
MED TRKS	3			
HVY TRKS	0			
BUSES	0			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE: X

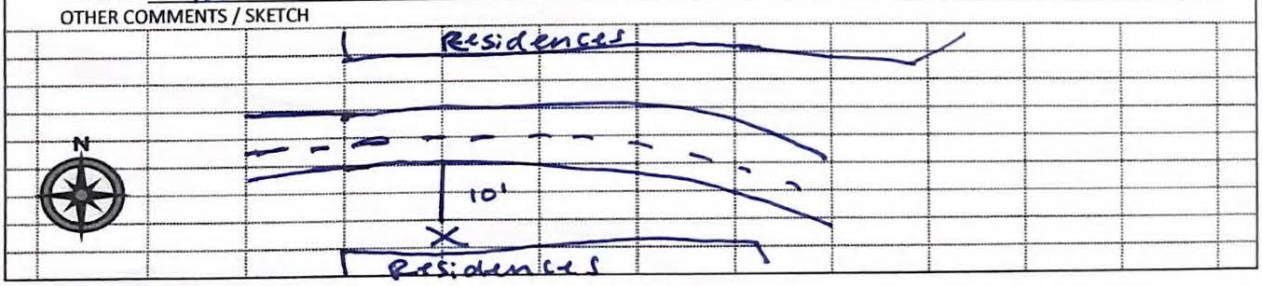
COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY: 35MPH

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES (DIST. BARKING DOGS) (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: Nearby + Distant crows audible throughout measurement.

DESCRIPTION / SKETCH

TERRAIN: (HARD) SOFT MIXED FLAT OTHER:
PHOTOS: YES
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT Cabrillo HS Baseball Lighting — PROJECT # 13601
SITE ID
SITE ADDRESS — OBSERVER(S) David Ortega
START DATE 08/10/2021 — END DATE 08/10/2021
START TIME 8:58AM — END TIME 9:13 AM

METEOROLOGICAL CONDITIONS

TEMP 58°F — HUMIDITY 90 % R.H. — WIND (CALM) LIGHT MODERATE
WINDSPD 1 MPH — DIR. N NE S SE S SW (W) NW — VARIABLE STEADY GUSTY
SKY (SUNNY) (CLEAR) — OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT Piccolo II — TYPE 1 (2) — SERIAL # P0221052801
CALIBRATOR Rion NC-74 — SERIAL # 34678576
CALIBRATION CHECK — PRE-MEASUREMENT 94 dBA SPL — POST-MEASUREMENT 94 dBA SPL — WINDSCRN YES

SETTINGS (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-2	8:58AM	9:13AM	49.7	67.1	35.8	38.7	41.8	49.9	

COMMENTS

Measurement taken at 4270 Sirius Ave. Pretty quiet throughout measurement. Primary noise source is minimal local traffic and distant traffic.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: LOCAL — DIST. TO RDWY C/L OR (EOP): 10-feet
TRAFFIC COUNT DURATION: 15 MIN — SPEED 25 MPH (Approx) — ___ MIN — SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	6			
MED TRKS	1			
HVY TRKS	Ø			
BUSES	Ø			
MOTRCLS	Ø			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE X

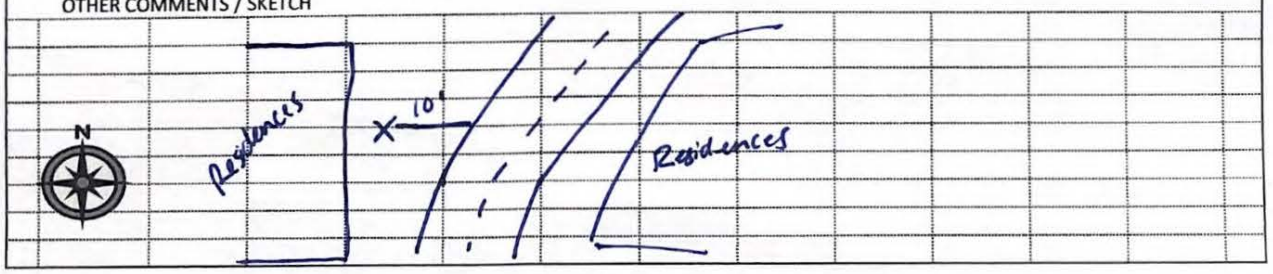
COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR (DRIVING THE PACE)
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES (DIST. BARKING DOGS) (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: Distant garbage truck w/ siren (~~other patient by~~). Dogs barking at 9:12 AM; Toy Rocket propelled to air at nearby residence (neighbor)

DESCRIPTION / SKETCH

TERRAIN (HARD) SOFT MIXED FLAT OTHER:
PHOTOS Yes
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: CABRILLO HS BASEBALL LIGHTING — PROJECT #: 13601
SITE ID:
SITE ADDRESS: — OBSERVER(S): DAVID ORTEGA
START DATE: 08/10/2021 — END DATE: 08/10/2021
START TIME: 10:10 AM — END TIME: 10:25 AM

METEOROLOGICAL CONDITIONS

TEMP: 70 F — HUMIDITY: 62 % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: 2 MPH — DIR. N NE S SE S (SW) W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO II — TYPE 1 (2) — SERIAL #: P022105284 01
CALIBRATOR: RION NC-74 — SERIAL #: 34678576
CALIBRATION CHECK — PRE-MEASUREMENT: 94 dBA SPL — POST-MEASUREMENT: 94 dBA SPL — WINDSCRN: YES

SETTINGS: (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-3	10:10 AM	10:25 AM	39.7	57.5	34	36.6	38.4	40.7	

COMMENTS: Measurement taken between the baseball field's outfield fence and neighboring yard (4250 SIRIUS AVE). Right at the fenceline between the 2 nearest receptors (4250 + 4256 SIRIUS AVE).

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL (OTHER: BIRDS / DISTANT TRAFFIC)
ROADWAY TYPE: — DIST. TO RDWY C/L OR EOP:
TRAFFIC COUNT DURATION: ___ MIN — SPEED

COUNT 1 (OR RDWY 1)	DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
	AUTOS				
	MED TRKS				
	HVY TRKS				
	BUSES				
	MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ___

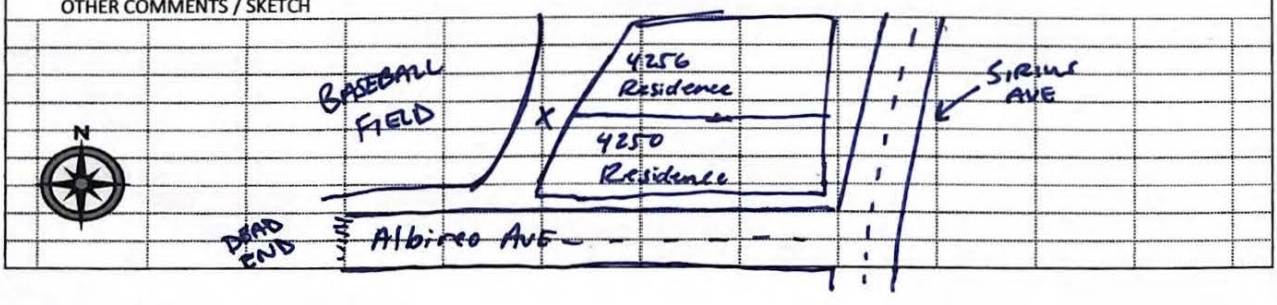
COUNT 2 (OR RDWY 2)	___ MIN		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING (DIST. TRAFFIC (LIST RDWYS BELOW)) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: Distant Traffic noise from Hwy 1

DESCRIPTION / SKETCH

TERRAIN: HARD (SOFT) MIXED FLAT OTHER:
PHOTOS: YES
OTHER COMMENTS / SKETCH



Location	Number	Start Date	Start Time	End Time	Duration	SPL Time	Freq Wt	LAeq	LAmax	LAmin	L10%	L50%	L90%
	1	8/10/2021	8:57:43 AM	8:58:00 AM	0:00:17	Slow	dBA	50.3	57.1	43.9	52.6	50.4	45.5
	2	8/10/2021	8:58:00 AM	8:59:00 AM	0:01:00	Slow	dBA	54.1	64.1	39.2	59.5	44.9	39.9
	3	8/10/2021	8:59:00 AM	9:00:00 AM	0:01:00	Slow	dBA	54.4	65	39.2	59.7	47	39.7
	4	8/10/2021	9:00:00 AM	9:01:00 AM	0:01:00	Slow	dBA	43	51	38.2	46.9	40.9	38.6
	5	8/10/2021	9:01:00 AM	9:02:00 AM	0:01:00	Slow	dBA	50.8	62.2	39.2	54.9	43.7	40.8
	6	8/10/2021	9:02:00 AM	9:03:00 AM	0:01:00	Slow	dBA	54.8	67.1	39.1	58.3	43.9	39.8
	7	8/10/2021	9:03:00 AM	9:04:00 AM	0:01:00	Slow	dBA	50.9	62.1	38.3	55.1	43.2	40.3
	8	8/10/2021	9:04:00 AM	9:05:00 AM	0:01:00	Slow	dBA	51	61.5	38.8	54	44	39.8
ST-2	9	8/10/2021	9:05:00 AM	9:06:00 AM	0:01:00	Slow	dBA	43.4	50.3	38.4	45.9	42.8	39.4
	10	8/10/2021	9:06:00 AM	9:07:00 AM	0:01:00	Slow	dBA	46.4	59	37.3	48.9	40.9	38.1
	11	8/10/2021	9:07:00 AM	9:08:00 AM	0:01:00	Slow	dBA	42.9	51.9	36.9	46	41	37.8
	12	8/10/2021	9:08:00 AM	9:09:00 AM	0:01:00	Slow	dBA	42.9	52.5	36.9	47	39.1	37.3
	13	8/10/2021	9:09:00 AM	9:10:00 AM	0:01:00	Slow	dBA	39.7	47.6	36.5	42.7	38.2	36.9
	14	8/10/2021	9:10:00 AM	9:11:00 AM	0:01:00	Slow	dBA	37.8	45.4	36.2	38.4	37.2	36.5
	15	8/10/2021	9:11:00 AM	9:12:00 AM	0:01:00	Slow	dBA	45.4	60	36.8	45.5	39.3	38
	16	8/10/2021	9:12:00 AM	9:13:00 AM	0:01:00	Slow	dBA	42.4	49.9	35.8	45.1	41.6	37
	17	8/10/2021	9:12:59 AM	9:13:54 AM	0:00:55	Slow	dBA	42.5	47.3	36.4	44.5	42.3	38.8
								49.7	**67.1**	**35.8**	**49.9**	**41.8**	**38.7**
	18	8/10/2021	9:27:43 AM	9:28:00 AM	0:00:17	Slow	dBA	41	46.7	35.7	44	40.3	36.2
	19	8/10/2021	9:28:00 AM	9:29:00 AM	0:01:00	Slow	dBA	56.5	66.5	35.4	61.3	49	37.3
	20	8/10/2021	9:29:00 AM	9:30:00 AM	0:01:00	Slow	dBA	56.2	68.8	37.3	61.1	44.1	39.3
	21	8/10/2021	9:30:00 AM	9:31:00 AM	0:01:00	Slow	dBA	60.2	72	38.3	64.2	47.2	41.1
	22	8/10/2021	9:31:00 AM	9:32:00 AM	0:01:00	Slow	dBA	53.8	63.5	35.4	59.8	44.4	36.4
	23	8/10/2021	9:32:00 AM	9:33:00 AM	0:01:00	Slow	dBA	56.6	67.5	34.5	61.9	44.1	36
	24	8/10/2021	9:33:00 AM	9:34:00 AM	0:01:00	Slow	dBA	58.6	68	43.9	62.8	53.2	45.8
	25	8/10/2021	9:34:00 AM	9:35:00 AM	0:01:00	Slow	dBA	56.5	63.9	36.2	61.9	47.6	37.7
ST-1	26	8/10/2021	9:35:00 AM	9:36:00 AM	0:01:00	Slow	dBA	54.3	64.5	37.8	59.1	46.7	39.9
	27	8/10/2021	9:36:00 AM	9:37:00 AM	0:01:00	Slow	dBA	55.9	67	37.3	60.9	45.5	39.8
	28	8/10/2021	9:37:00 AM	9:38:00 AM	0:01:00	Slow	dBA	57.6	67.3	38.6	63.4	47.4	39.8
	29	8/10/2021	9:38:00 AM	9:39:00 AM	0:01:00	Slow	dBA	58	68.1	38.6	63	51.8	40.9
	30	8/10/2021	9:39:00 AM	9:40:00 AM	0:01:00	Slow	dBA	55.9	67	38.6	58.5	51.1	39.8
	31	8/10/2021	9:40:00 AM	9:41:00 AM	0:01:00	Slow	dBA	57.5	66.3	40	62	52.9	46
	32	8/10/2021	9:41:00 AM	9:42:00 AM	0:01:00	Slow	dBA	59.9	66.4	41	64.5	55.6	45.2
	33	8/10/2021	9:42:00 AM	9:43:00 AM	0:01:00	Slow	dBA	58.3	65.8	42.6	62.9	54.8	45.1
	34	8/10/2021	9:43:01 AM	9:43:58 AM	0:00:57	Slow	dBA	44.6	56.1	35.6	48.8	40.7	36.3
								57.4	**72.0**	**34.5**	**61.8**	**49.0**	**40.7**

Location	Number	Start Date	Start Time	End Time	Duration	SPL Time	Freq Wt	LAeq	LAmax	LAmin	L10%	L50%	L90%
	35	8/10/2021	10:09:43 AM	10:10:00 AM	0:00:17	Slow	dBA	37.6	41.5	36.7	38.7	37.7	37
	36	8/10/2021	10:10:00 AM	10:11:00 AM	0:01:00	Slow	dBA	37.7	43.6	34	40	37.6	34.6
	37	8/10/2021	10:11:00 AM	10:12:00 AM	0:01:00	Slow	dBA	37.1	39.6	35.3	38.7	36.8	35.5
	38	8/10/2021	10:12:00 AM	10:13:00 AM	0:01:00	Slow	dBA	36.1	38.8	34.6	37.2	35.7	34.9
	39	8/10/2021	10:13:00 AM	10:14:00 AM	0:01:00	Slow	dBA	42	57.5	35.6	41.5	37.5	35.9
	40	8/10/2021	10:14:00 AM	10:15:00 AM	0:01:00	Slow	dBA	37.9	41.8	35.9	38.9	37.8	36.3
	41	8/10/2021	10:15:00 AM	10:16:00 AM	0:01:00	Slow	dBA	39.3	43.4	36.9	40.6	39	38
	42	8/10/2021	10:16:00 AM	10:17:00 AM	0:01:00	Slow	dBA	37.3	39.6	35.1	38.4	37.2	35.6
ST-3	43	8/10/2021	10:17:00 AM	10:18:00 AM	0:01:00	Slow	dBA	39.4	41.5	37.3	40.5	39.3	37.9
	44	8/10/2021	10:18:00 AM	10:19:00 AM	0:01:00	Slow	dBA	39.2	45.9	36.5	40.4	38.7	37.7
	45	8/10/2021	10:19:00 AM	10:20:00 AM	0:01:00	Slow	dBA	41.5	45.1	38.3	43.2	41.1	39
	46	8/10/2021	10:20:00 AM	10:21:00 AM	0:01:00	Slow	dBA	43	46.9	38.2	45.4	42.5	39.1
	47	8/10/2021	10:21:00 AM	10:22:00 AM	0:01:00	Slow	dBA	37.8	39.9	36	39	37.7	36.4
	48	8/10/2021	10:22:00 AM	10:23:00 AM	0:01:00	Slow	dBA	39.4	43.7	37	41.2	38.7	37.4
	49	8/10/2021	10:23:00 AM	10:24:00 AM	0:01:00	Slow	dBA	41.9	51.2	34.9	46.4	38.7	35.3
	50	8/10/2021	10:24:00 AM	10:25:00 AM	0:01:00	Slow	dBA	38	43.3	35	39.8	37.4	35.4
	51	8/10/2021	10:25:00 AM	10:26:00 AM	0:01:00	Slow	dBA	37.8	42.4	34.2	39.8	36.9	34.8
								39.7	**57.5**	**34.0**	**40.7**	**38.4**	**36.6**

NOISE APPENDIX

Construction Noise Modeling Data

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/7/2021
Case Description: Cabrillo High School Lighting - Trenching

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Closest Residence (35 Feet)	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Trenching Machine	No	50		80.4	35	0
Trenching Machine	No	50		80.4	35	0
Backhoe	No	40		77.6	35	0
Backhoe	No	40		77.6	35	0

Calculated (dBA) Results

Equipment	*Lmax	Leq
Slurry Trenching Machine	83.5	80.4
Slurry Trenching Machine	83.5	80.4
Backhoe	80.7	76.7
Backhoe	80.7	76.7
Total	83.5	85

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Acoustic Center (71 feet)	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Slurry Trenching Machine	No	50		80.4	71	0
Slurry Trenching Machine	No	50		80.4	71	0
Backhoe	No	40		77.6	71	0
Backhoe	No	40		77.6	71	0

Calculated (dBA) Results

Equipment	*Lmax	Leq
Slurry Trenching Machine	77.3	74.3
Slurry Trenching Machine	77.3	74.3
Backhoe	74.5	70.5
Backhoe	74.5	70.5
Total	77.3	78.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/7/2021
Case Description: Cabrillo High School Lighting - Installation

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Closest Residence (35 Feet)	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	35	0
Concrete Mixer Truck	No	40		78.8	35	0
Gradall	No	40		83.4	35	0
Crane	No	16		80.6	35	0
Front End Loader	No	40		79.1	35	0
Front End Loader	No	40		79.1	35	0

Results

		Calculated (dBA)	
Equipment		*Lmax	Leq
Concrete Mixer Truck		81.9	77.9
Concrete Mixer Truck		81.9	77.9
Gradall		86.5	82.5
Crane		83.6	75.7
Front End Loader		82.2	78.2
Front End Loader		82.2	78.2
	Total	86.5	86.7

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Acoustic Center (71 feet)	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	71	0
Concrete Mixer Truck	No	40		78.8	71	0
Gradall	No	40		83.4	71	0
Crane	No	16		80.6	71	0
Front End Loader	No	40		79.1	71	0
Front End Loader	No	40		79.1	71	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Concrete Mixer Truck		75.8	71.8
Concrete Mixer Truck		75.8	71.8
Gradall		80.4	76.4
Crane		77.5	69.5
Front End Loader		76.1	72.1
Front End Loader		76.1	72.1
	Total	80.4	80.6

*Calculated Lmax is the Loudest value.