Twin Oaks Valley Road Athletic Fields - Lighting Project

Initial Study – Mitigated Negative Declaration

prepared by

California State University, San Marcos
Office of Planning, Design and Construction
333 S. Twin Oaks Valley Road
San Marcos, California 92078
Contact: Michelle Alves

prepared with the assistance of

Rincon Consultants, Inc.
2215 Faraday Avenue, Suite A
Carlsbad, California 92008

September 2023

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Initial Study

The following Initial Study (IS) addresses the environmental impacts associated with the construction and operation of field light standards at the existing multi-purpose fields (MPFs) adjacent to Twin Oaks Valley Road (herein referred to as "proposed project" or "project").

1. Project Title

Twin Oaks Valley Road Athletic Fields - Lighting Project

2. Lead Agency Name and Address

The Board of Trustees of the California State University
401 Golden Shore
Long Beach, California 90802

3. Project Proponent

California State University, San Marcos
333 S. Twin Oaks Valley Road
San Marcos, California 92078

4. Contact Person

Michelle Alves
California State University, San Marcos
333 S. Twin Oaks Valley Road
San Marcos, California 92078
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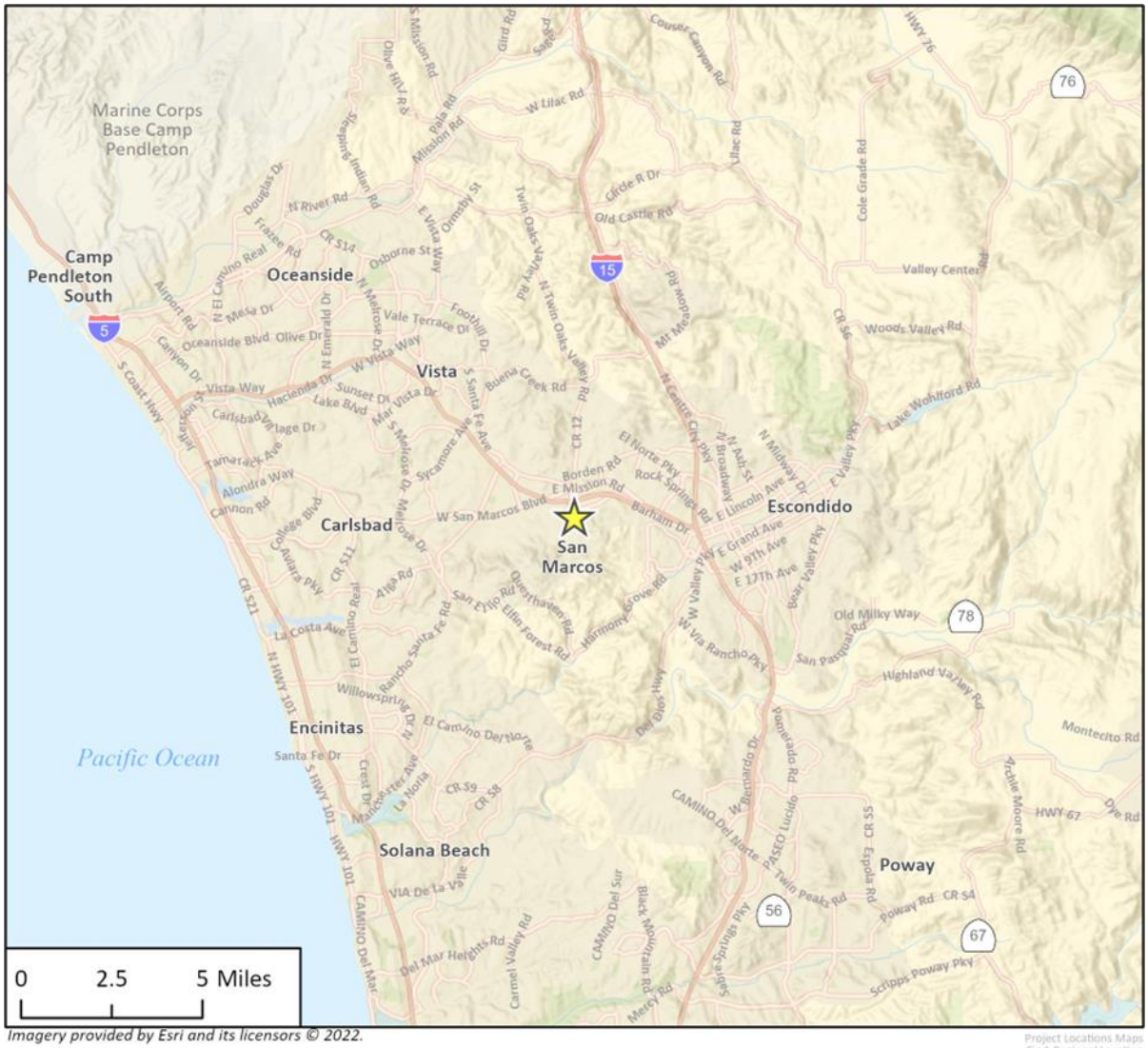
5. Project Location

The project site is located on the northwest corner of the California State University, San Marcos (CSUSM) campus (herein referred to as "project site"). Figure 1, below, depicts the project site in relationship to the region. Figure also illustrates a closer look at the location of the MPFs in a more focused CSUSM context.

Figure 1 Regional Location



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Project Locations Maps
Fig 1 Regional Location

Project Location

N

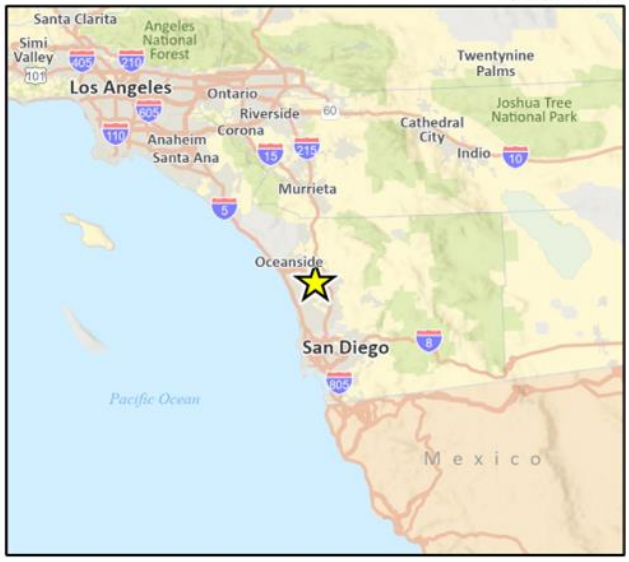

Figure 2 Project Location

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6. General Plan Designation and Zoning

As a constitutionally created State entity, the California State University (CSU) is not subject to local governments' regulations, such as City or County General Plans or land use ordinances, on property owned or controlled by CSU and used in furtherance of CSU's mission. Although there is no formal mechanism for joint planning, the CSU may consider, for coordination purposes, aspects of local plans and policies when it is appropriate and feasible. Campuses generally seek to maintain an ongoing exchange of ideas and information, and to pursue mutually acceptable solutions for issues that confront both the campuses and their surrounding communities. Land use on the CSUSM campus is governed by the most recent Campus Master Plan, which was approved in 1988.

7. Regional Setting

The City of San Marcos is an inland city in northern San Diego County. San Marcos is an urbanized city bordered by Vista and Carlsbad to the west, unincorporated areas to the north, Escondido to the east, and Encinitas and unincorporated areas to the south. Regional access is provided to CSUSM via Interstate 15 (I-15) and State Route 78 (SR-78). The North County Transit District's SPRINTER also provides light rail transit services to CSUSM with a station serving the campus. The CSUSM campus is approximately one-half mile south of SR-78 and is bounded by South Twin Oaks Valley Road to the west, East Barham Drive to the north, La Moree Road and residential development to the east, and residential development and undeveloped hillsides to the south. .

8. Project Site and Surrounding Land Uses

The project site is comprised of one existing baseball field, one existing softball field, and one soccer field adjacent to South Twin Oaks Valley Road to the west, East Barham Drive to the north, Craven Road to the south, and Campus View Drive to the east. The project site is located within an area planned for athletic and recreational uses (CSUSM 1988). As discussed below, the project site is in an urbanized area surrounded by commercial, residential, and industrial development. Pedestrian access to the project site from South Twin Oaks Valley Road and Craven Road is provided via a paved pathway and concrete walkway, respectively. The 304-acre CSUSM campus is surrounded primarily by commercial uses. Multi-family residences owned by CSUSM are located southeast and northwest of Campus Way and East Barham Drive. One multi-family residence and few single-family residences are located on East Barham Drive, north of the CSUSM campus. The nearest single-family residence is located approximately 400 feet north of the project site. Retail and commercial office buildings are located to the north and west of the campus. Commercial/light industrial land uses, including the San Marcos Industrial Park, are located to the north. Across SR-78 is the City of San Marcos Civic Center.

9. Description of Project

The project would involve construction of pole lighting for the two existing baseball/softball fields and soccer field. The existing fields currently do not have nighttime lighting but do have a portable audio system that is maneuvered to various locations, as needed. In particular, the project would require trenching for new power and irrigation lines, grading for a service pad area, and removal of existing power lines for the placement of new pole lighting fixtures.

Specifically, the project would include:

1. Installation of a total of 18 pole lighting fixtures distributed along the perimeters of the three aforementioned sports fields; and
2. Installation of two control and monitoring cabinets located near the southern border of the existing baseball/and softball fields.

Lighting Improvements

Lighting poles would be installed on all sides of the existing fields, so as to provide the greatest light exposure for nighttime games. As proposed, pole lighting heights include two poles at 60-feet above adjacent grade, four poles of 70-feet, eight poles of 80-feet, two poles of 90-feet, and two poles of 100-feet. Lighting plans for the project can be found in Figure , below. The proposed lighting design would include light fixtures with state-of-the-art glare shield protection and engineered reduced light spillage technology to reduce the amount of outward spill light. The proposed fixtures would utilize a technology that provides, on average, a greater than 50-percent reduction in light spill and uses 40 percent less energy as compared to typical field lighting.

Accessory Buildings

The project would construct a concrete block equipment shelter with an adjoining concrete block generator enclosure south of the existing baseball field. The equipment shelter would have a maximum height of 10-feet and be constructed on a new concrete pad. The equipment shelter would house mobility system racks, equipment cabinets, condenser units, and other equipment associated with the proposed lighting poles. A diesel tank generator would be placed inside the generator enclosure to provide a back-up energy source. The equipment shelter would be painted a neutral color approved by CSUSM to blend in with the surrounding environment. Also, exterior light fixtures at the equipment shelter would be uni-directional, shielded and situated so as to not cause glare or excessive light spillage into the surrounding area.

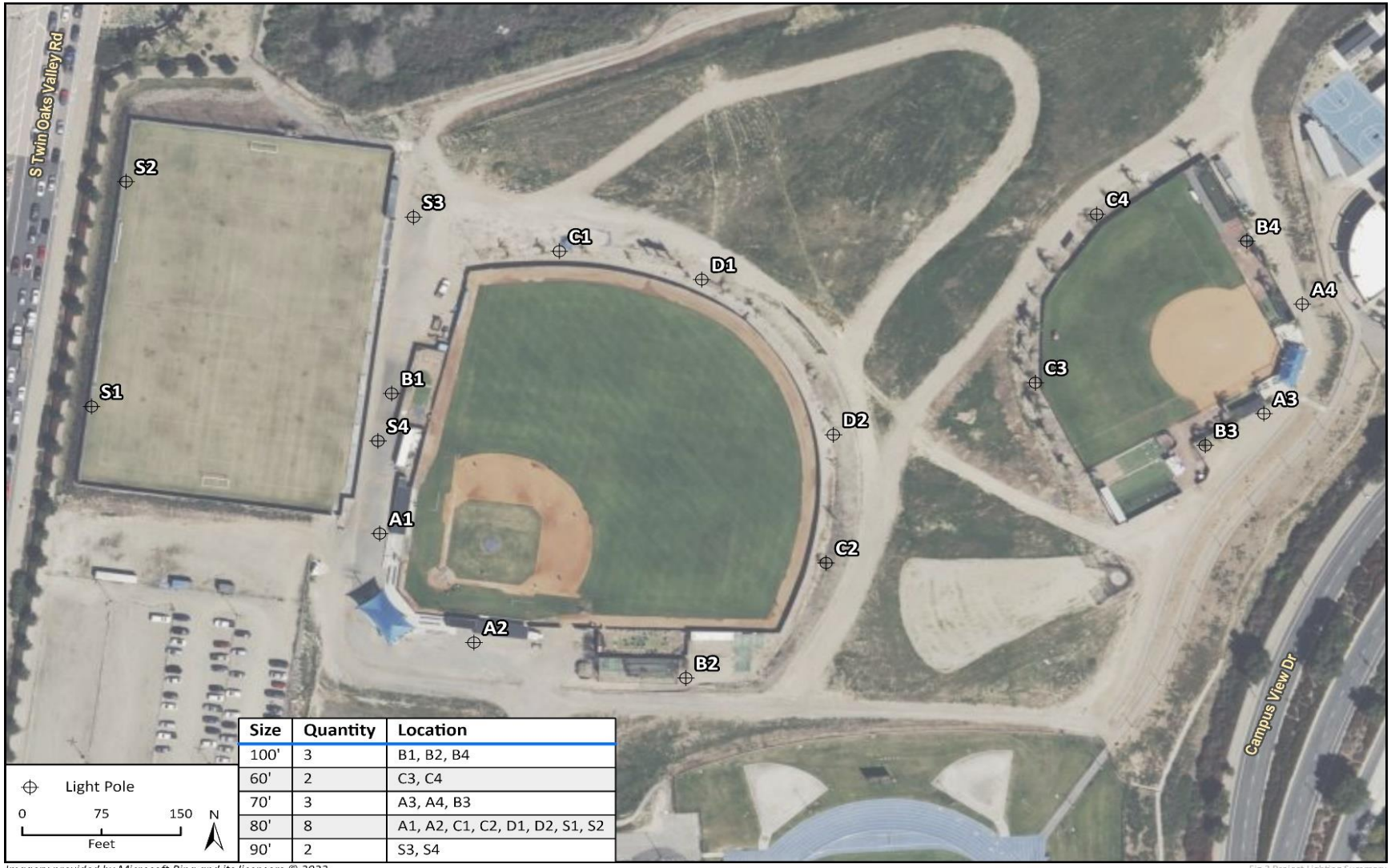
Schedule and Usage

All of the existing proposed project fields are currently operational during the daytime hours. Operational activities include general practice for various CSUSM athletic programs, formal games during the weekday and weekends, and intramural sports through Campus Recreation. Future uses at the project site would not increase overall usage but would increase the overall duration of use to allow practices and games to encroach into the evening hours. Specifically, the project would not result in an increase in field or stadium capacity but rather interval of use. It should be noted that the proposed improvements would not allow a greater density of persons at the project site.

General practice times of various athletic CSUSM teams are listed below:

- Women’s Soccer: 7:00 a.m. to 10:00 a.m. (Monday - Thursday)
- Men’s Soccer: 11:00 a.m. to 2:00 p.m. (Monday - Thursday)
- Baseball: 11:00 a.m. to 2:00 p.m. (Monday - Thursday)
- Softball: 11:00 a.m. to 2:00 p.m. (Monday - Thursday)
- Track and Field/Cross Country: 6:00 a.m. to 11:00 a.m. (Monday - Thursday)

Figure 3 Project Lighting Plan Summary



Size	Quantity	Location
100'	3	B1, B2, B4
60'	2	C3, C4
70'	3	A3, A4, B3
80'	8	A1, A2, C1, C2, D1, D2, S1, S2
90'	2	S3, S4

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Fig 3 Project Lighting Summary
Fig 3 Project Lighting Summary

Currently, night games are excluded from the current athletic schedule, but would be proposed in the near future, due to the inclusion of the project and related lighting poles. Future nighttime schedules are not known, but it could include night games for all three project fields simultaneously. This would not be out of the ordinary, as all three fields are currently operational during daytime hours. Additionally, it is expected that future nighttime games at all three athletic fields would run to approximately 10:15 p.m. in the evening, which is similar to the existing usage at the adjacent Mangrum Field, which currently uses nighttime lighting.

Project Construction

Construction of the proposed project would also require a crane to erect the light poles, a cement truck to lay the concrete pad, and worker vehicles. The proposed project would also include minor trenching for utility lines to and from the light poles from the new equipment shelter.

10. Required Approvals

The Board of Trustees of the California State University is the Lead Agency under CEQA and is responsible for ensuring the adequacy of this Final IS-MND. The project is a "discretionary project," which is defined in CEQA Guidelines Section 15357 as "a project that requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity." The following discretionary action is associated with the project:

- CSU Project Approval (Schematic Plans)

The project also may require a National Pollutant Discharge Elimination System (NPDES) Construction Permit by the San Diego Regional Water Quality Control Board (RWQCB).

11. Assembly Bill 52 Tribal Consultation (Public Resources Code Section 21080.3.1?)

As part of the process of identifying cultural resources issues in or near the project site, CSUSM sent letters inviting tribes to consult with CSUSM on November 9, 2022. CSUSM requested a response within 30-days of receipt as specified by Assembly Bill (AB) 52. CSUSM received a request for consultation from San Pasqual Bank of Mission Indians on November 21, 2022 along with a letter from Rincon Band of Luiseno Indians on December 2, 2022. CSUSM hosted a consultation meeting with both tribes on January 25, 2023, in two separate meetings.

Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Determination

Based on 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 to 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 "less than significant with mitigation incorporated" 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 potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	■	☐	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	■	☐	☐

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

A significant impact would occur if a project were to introduce incompatible development within a field of view containing a scenic vista or substantially block views of a scenic vista. Viewsheds refer to the visual qualities of the geographical area that is defined by the horizon, topography, and other natural features that give an area its visual boundary and context, or by artificial developments that have become prominent visual components of an area.

CSUSM is not subject to City planning and land use regulations or policies, such as those found in the City of San Marcos General Plan. A discussion of scenic resources is provided here for information purposes. Scenic resources in the City of San Marcos include views to and from undeveloped hillsides, prominent ridgelines, and water features (San Marcos 2012a). No designated scenic resources are located within or in close proximity to the campus. The closest identified scenic resource is a ridgeline near South Lake, approximately 0.75 mile to the south. Nevertheless, due to distance from designated scenic resources and the relatively small scale of the project, the proposed

project would not block views of ridgelines or other designated scenic vistas. Thus, no impact would occur.

NO IMPACT

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

A significant impact would occur if scenic resources would be damaged or removed by a project within a designated scenic highway. The California Scenic Highway System indicates that no existing or proposed state scenic highways are located in the vicinity of the project site (California Department of Transportation [Caltrans] 2021b). However, there are four officially designated state scenic highways in San Diego County, including SR-75 through Coronado and over the Coronado Bridge, SR-78 through the Anza-Borrego Desert, SR-125 between SR-94 and I-8 near Mount Helix, and SR-163 through Balboa Park.

The project site is located over 25 miles away from the closest of the four highway segments. Within the project area, SR-78 is designated by the City of San Marcos as a view corridor but is not a designated state scenic highway. Due to the distance of the project from these scenic highways, no impact would occur.

The proposed project would require the removal of various ornamental shrubs, as needed, on the project site, but would not otherwise affect any rock outcroppings, historic buildings, or other identified scenic resources within a state scenic highway. The proposed project would not result in substantial damage to scenic resources in a state scenic highway. Thus, no impact would occur.

NO IMPACT

c. Would the project, 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 a 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?

The proposed project is in an urban area surrounded by residential, commercial and institutional land uses. Multi-family residences owned by CSUSM are located southeast and northwest of Campus Way and East Barham Drive. Retail and commercial office buildings are located to the north and west of the campus. Commercial/light industrial land uses, including the San Marcos Industrial Park, are located to the north. And across SR-78 is the City of San Marcos Civic Center.

Implementation of the proposed project would develop small portions of the existing project site and would essentially not change the character and use of the project site. Installation of stadium light standards and related equipment would not result in a substantial change from the existing visual setting of the site. Further, the proposed light standards would be visible to viewers traveling along South Twin Oaks Valley Road but would be visually compatible with existing light standards within the surface parking lots in the foreground of the view and other vertical linear elements within the existing visual environment. While development of the project, and implementation of lighting poles surrounding existing fields, would modify the appearance of the site relative to existing condition, it is not anticipated to degrade the existing visual character or quality of the site and would rather improve its surroundings since it would upgrade the existing landscaping while enhancing the visual quality of the site.

Upon approval of the project, the addition of lighting poles would not degrade the existing visual character or quality of the site and its immediate surroundings and would be consistent with CSUSM's envisioned visual character and quality of the project site and surrounding institutional areas. Additionally, the project would include Mitigation Measure AES-1, which would reduce temporary construction impacts by screening public views of construction equipment, to the extent feasible, during construction of the project. With implementation of mitigation, impacts would be less than significant.

Mitigation Measure

AES-1 Construction Staging Areas

Construction equipment staging areas shall be located, to the greatest extent feasible, away from nearby existing residential uses (e.g., on-campus housing), and utilize appropriate screening (i.e., temporary fencing with opaque material) to shield public views of construction equipment and material. Prior to issuance of a grading permit, the Chancellors Office shall verify that staging areas are identified on final grading/development plans and that appropriate perimeter screening is included as a construction specification.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

Light

Spill light occurs when lighting standards such as streetlights, parking lot lighting, exterior building lighting, and landscape lighting are not properly aimed or shielded to direct light to the desired location and light escapes and partially illuminates a surrounding location. Glare is the result of improperly aimed or blocked lighting sources that are visible against a dark background such as the night sky. Glare generally does not result in illumination of off-site locations but results in a visible source of light viewable from a distance.

The project site and surroundings contain existing sources of nighttime lighting. Major campus roadways and walkways are lit for the safety of students, faculty, and staff using the campus. Existing residential uses to the south of the and commercial areas to the east contribute to the existing ambient light in the vicinity of the project site and surrounding the CSUSM campus, as a whole. It should be noted that the existing lighting at the Mangrum Track contributes to ambient nighttime lighting, as well.

The proposed project would install new light fixtures as well as outdoor safety lighting at the equipment shelter. The field lighting would be used periodically for evening sporting events and recreational use of the fields. The proposed project is located in the vicinity of off-campus uses that could potentially be affected by nighttime lighting and/or glare effects; however, as noted, existing night lighting sources are currently located in the project area. Existing night lighting sources in the project area include existing lighting at the Mangrum Track, lighting along on-campus walkways, street lights along adjacent public roadways, parking lot lighting (on and off campus), and lights from on-campus and surrounding buildings. Thus, it would not represent a substantial increase in daytime or nighttime lighting.

Nevertheless, the project would include Mitigation Measure AES-2, which would help reduce operational light spillage, to the extent feasible, during operation of the project. With implementation of mitigation, impacts would be less than significant.

Mitigation Measure

AES-2 Light Spillage

Field lighting within the Multi-Purpose Fields shall be aimed, shielded, or screened from view in an effort to prevent light spillage. Light intensity at the project site shall be limited, as follows:

- Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties.
- Use high pressure sodium and/or cut-off fixtures instead of typical mercury-vapor fixtures for outdoor lighting.
- Use unidirectional lighting to avoid light trespassing onto adjacent properties.
- Design lighting to confine illumination to the project site, and/or to areas which do not include light sensitive uses.
- Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses.
- Architectural lighting (in or near the equipment shed) shall be directed onto the building surfaces and have low reflectivity to minimize limit light onto adjacent properties.

Glare

The proposed project would not include new structures or lighting poles that would have highly reflective surfaces, which would create potential glare impacts. However, due to new field lighting that could create high contrast lighting conditions, glare could adversely affect motorists traveling on local streets who have clear line-of-sight views of proposed field lighting.

Specifically, the proposed lighting poles on the western side of the existing soccer field, as well as locations on the northern boundary of the soccer and baseball fields, would be within the field of view of drivers traveling north on South Twin Oaks Valley Road or East on Bartham Drive. Drivers traveling south on South Twin Oaks Valley Road towards Craven Road could also experience glare impacts from lights situated along the western side of the soccer field. However, the athletic fields would be illuminated infrequently for only a limited period of time for the safety of participants during practices and for games that occur in the late afternoon or early evening hours. Also, the design of the project, including its finish, colors, and materials, would be reviewed for approval through the Chancellors Office. This regulatory procedure provides CSUSM with an additional layer of review for aesthetics including glare, and an opportunity to incorporate additional conditions to improve the project's materials and lighting plans. Therefore, potential glare impacts are considered less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

2 Agriculture and Forestry Resources

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

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

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

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))?

d. Would the project result in the loss of forest land or conversion of 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?

Although CSUSM is not subject to City planning and land use regulations or policies, a discussion of agricultural and forestry resources is provided here for information purposes. The project site and adjacent property are not identified or designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, nor is it designated or zoned for agricultural, forestry, or timberland uses (San Marcos 2012a). There are no Williamson Act contract land areas, agricultural operations, or timberland production operations within or surrounding the project site. Thus, no impacts to agricultural or forestry resources would occur.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	■	☐

The following section is based on the results of the Air Quality calculations that were prepared for the proposed project. The full Air Quality calculations are provided in Appendix A of this document.

Setting

Overview of Air Pollution

The federal and State Clean Air Acts (CAA) mandate the control and reduction of certain air pollutants. Under these laws, the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for "criteria pollutants" and other pollutants. Some pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide (CO), volatile organic compounds (VOC)/reactive organic gases (ROG),[1] nitrogen oxides (NO_X), particulate matter with diameters of ten microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), sulfur dioxide, and lead. Other pollutants are created indirectly through chemical reactions in the atmosphere, such as ozone (O_3), which is created by atmospheric chemical and photochemical reactions primarily between VOC and NO_X. Secondary pollutants include oxidants, O_3, and sulfate and nitrate particulates (smog). Air pollutants can be generated by the natural environment, such as when high winds suspend fine dust particles.

[1] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term VOC is used in this IS-MND.

Air pollutant emissions are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories:

- Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat.
- Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products.

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and can also be divided into two major subcategories:

- On-road sources that may be legally operated on roadways and highways.
- Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

Air Quality Standards and Attainment

The project area is located in the San Diego Air Basin (SDAB), which is bordered by the Pacific Ocean to the west, the South Coast Air Basin to the north, the Salton Sea Air Basin to the east, and the United States/Mexico border to the south. The SDAB is under the jurisdiction of the San Diego County Air Pollution Control District (SDAPCD). The SDCAPCD covers the entire area within the incorporated and unincorporated portions of San Diego County.

As the local air quality management agency, SDAPCD is required to monitor air pollutant levels to ensure that state and federal air quality standards are met and, if they are not met, to develop strategies to meet them. Depending on whether standards are met or exceeded, a local air basin is classified as in “attainment” or “non-attainment.” The SDAB is designated a nonattainment area for federal and State eight-hour ozone standards, State one-hour ozone standards, and for State standards for PM_{10} and $PM_{2.5}$. The SDAB is designated unclassifiable or in attainment for all other federal and State standards (SDAPCD 2022). The human health associated with these criteria pollutants, as presented in Table 1, below, already occurs in those areas as part of the environmental baseline condition.

Table 1 Health Effects Associated with Nonattainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone (O_3)	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Carbon monoxide (CO)	Reduces oxygen delivery leading to: (1) aggravation of chest pain (angina pectoris) and other aspects of coronary heart disease; (2) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (3) impairment of central nervous system functions; and (4) possible increased risk to fetuses.
Nitrogen dioxide (NO_2)	(1) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (2) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (3) contribution to atmospheric discoloration.

Pollutant	Adverse Effects
Sulfur dioxide (SO_2)	(1) Bronchoconstriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness during exercise or physical activity in persons with asthma.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.
Lead	(1) Short-term overexposures: lead poisoning can cause (a) anemia, (b) weakness, (c) kidney damage, and (d) brain damage; (2) long-term exposures: long-term exposure to lead increases risk for (a) high blood pressure, (b) heart disease, (c) kidney failure, and (d) reduced fertility.

Source: United States Environmental Protection Agency (USEPA) 2021

Air Quality Management

SDAPCD is primarily responsible for assuring that national and state ambient air quality standards are attained and maintained in the SDAB. The SDAPCD developed the San Diego Regional Air Quality Strategy (RAQS) pursuant to CCAA requirements. The RAQS was initially adopted in 1991 and was updated in 1995, 1998, 2001, 2004, 2009, 2016, and 2020 (SDAPCD 2020). The RAQS identifies feasible emission control measures to provide progress in San Diego County toward attaining the State ozone standard. The pollutants addressed in the RAQS are volatile organic compounds (VOCs) and NO_X, precursors to the photochemical formation of ozone (the primary component of smog). The RAQS was initially adopted by the SDAPCD Board on June 30, 1992, and amended on March 2, 1993, in response to CARB comments. At present, no attainment plan for PM_{10} or $PM_{2.5}$ is required by the state regulations. However, SDAPCD has adopted measures to reduce PM_{10} and $PM_{2.5}$ in San Diego County. These measures range from regulations against open burning to incentive programs that introduce cleaner technology. These measures can be found in a report titled “Measures to Reduce Particulate Matter in San Diego County” (SDAPCD 2005).

The RAQS relies on information from CARB and the San Diego Association of Governments (SANDAG), including mobile and area source emissions, as well as information regarding projected growth in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls.

SDAPCD Screening Thresholds

The SDAPCD has adopted numerical air quality impact analysis trigger levels to determine whether an air pollution source could contribute individually or cumulatively to the worsening local or regional air quality. These trigger levels are also used by planning agencies and local jurisdictions as screening level thresholds for comparative purposes when evaluating projects under CEQA. Thus, a project that does not exceed these SDAPCD screening level thresholds would have a less than significant impact in regard to the second air quality impact criteria. The screening level thresholds for temporary construction and long-term operational emissions in the SDAB are shown in Table 2.

Table 2 SDAPCD Screening Thresholds

Pollutant	Total Emissions (lbs. per day)
ROG/VOCs	250
NO_x	250
CO	550
SO_x	250
PM_{10}	100
$PM_{2.5}$	67

Source: SDAPCD Rule 20.2.

The SDAPCD does not have a specified threshold for health risk impacts from TACs. Rule 1200 for the SDAPCD is related to review of new sources for TACs. The rule states that new sources with a maximum incremental cancer risk greater than 10 in one million shall conduct the following to obtain an Authority to Construct or Permit to Operate: implementation of Toxics Best Available Control Technology (T-BACT) and a report in support of approving an Authority to Construct the project, which includes methods to reduce cancer risk. As the maximum incremental cancer risk greater than 10 in one million is used by SDAPCD to determine projects that must meet a high standard for Authority to Construct, that limit is used for the determination of impacts in this analysis.

Methodology

Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod uses project-specific information, including the project's land uses, square footage for different uses (e.g., education and parking), and location, to model a project's construction and operational emissions. The square footage used for the CalEEMod analysis is based upon the total square footage of the utility construction work, which is approximately 13,500 square feet.

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. According to the project applicant, construction would start in January 2024 and finish in April 2024, lasting approximately four months. The applicant provided the construction schedule and construction equipment used for construction activities. Default CalEEMod worker trips and vendor trips were used for the model. A demolition phase was not included in the model since construction of the project does not require demolition. This analysis assumes that the project would comply with all applicable regulatory standards.

Operational emissions modeled include mobile source emissions (i.e., vehicle emissions), energy emissions, and area source emissions. Mobile source emissions are generated by vehicle trips to and from the project site, which would consist of trips associated with maintenance of the project site, i.e., the soccer, baseball, and softball fields. Emissions attributed to energy use include electricity consumption needed for the field lighting. In addition, area source emissions are generated by landscape maintenance equipment and consumer products. The project would not include fireplaces, appliances, or heating based on information provided by the applicant.

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

The SDAPCD is required, pursuant to the federal Clean Air Act, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the RAQS, prepared by the SDAPCD for the region. Forecasts used in the RAQS are developed by SANDAG. SANDAG forecasts are based on local general plans and other related documents that are used to develop population, employment, and traffic projections. Consistency with the RAQS is determined by analyzing a project with the assumptions in the RAQS. As such, projects that propose development that is consistent with the growth anticipated by the local land use plan would be consistent with the SANDAG's growth projections and the RAQS emissions estimates. In the event that a project would propose development that is less dense than anticipated by the growth projections, the project would likewise be consistent with the RAQS. In the event a project proposes development that is greater than anticipated in the growth projections, further analysis would be warranted to determine if the project would exceed the growth projections used in the RAQS for the specific subregional area.

The purpose of the project is to install pole lighting for two existing baseball/softball fields and a soccer field on the CSUSM campus. The project would not directly induce population growth due to the fact that the proposed project does not include new housing or businesses and would not exceed SANDAG population projections. In addition, construction and maintenance jobs for construction and operation of the project would likely be recruited from the local pool of labor and would not create conditions for employment growth that exceeds growth estimates for the area.

Because the project would not generate population and employment growth beyond the levels assumed for the region, the project would not conflict with population projections for the region; therefore, the project would be consistent with the RAQS. Furthermore, as detailed below, the project would not result in a significant air quality impact with regards to construction- and operational-related emissions of criteria air pollutants. Given the aforementioned, the project would not interfere with the SDAPCD's goal of reducing air pollutant emissions for ozone within the region. Impacts to the RAQS would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?

Construction Emissions

Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment and construction vehicles. Table 3, below, summarizes the estimated annual emissions during project construction. As shown therein, construction-related emissions would not exceed SDAPCD thresholds. Therefore, project construction would not 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. The proposed project would result in a less than significant impact.

Table 3 Construction Criteria Pollutant Emissions

	Maximum Daily Emissions (lbs/day)					
Construction Year	**ROG**	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2024	2	18	21	<1	1	1
SDAPCD Thresholds	250	250	550	250	100	67
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: All emissions modelling was completed using CalEEMod. See Appendix A for modeling results. Some numbers may not add up due to rounding. Emissions presented are the highest of the winter and summer modeled emissions.

Operational Emissions

Operation of the project would not generate substantial amounts of criteria pollutant emissions, as shown in Table 4. Regular maintenance of the field lights would not generate substantial air emissions from vehicles over what currently exists on campus. Further, as stated in Section 17, *Transportation*, the project would generate minimal additional trips compared to existing trips at CSUSM. Table 4 summarizes the project's annual operational emissions by emission source. As shown therein, operational emissions would not exceed SDAPCD regional thresholds for criteria pollutants. Therefore, project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment, and impacts would be less than significant.

Table 4 Operational Criteria Pollutant Emissions

	Maximum Daily Emissions (lbs/day)					
Source	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Area	<1	<1	<1	0	0	0
Energy	0	0	0	0	0	0
Mobile	0	0	0	0	0	0
Total	**<1**	**<1**	**<1**	**0**	**0**	**0**
SDAPCD Threshold	250	250	550	250	100	67
Exceed Threshold?	No	No	No	No	No	No

Notes: All emissions modeling was completed using CalEEMod. See Appendix A for modeling results. Some numbers may not add up due to rounding.

LESS THAN SIGNIFICANT IMPACT

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

Localized Carbon Monoxide Hotspot Impact

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2016).

The entire SDAB is in conformance with state and federal CO standards, and most air quality monitoring stations no longer report CO levels. As shown in Table 3, maximum daily CO emissions generated by project construction would be 21 pounds, which would not exceed SDAPCD's regional threshold (550 pounds per day). Likewise, as shown in Table 4, maximum daily CO emissions generated by project operations would be less than 1 pound, which would not exceed SDAPCD's regional thresholds. Based on the low background level of CO in the project area, ever-improving vehicle emissions standards for new cars in accordance with state and federal regulations, and the project's low level of operational CO emissions, the project would not create new CO hotspots. Therefore, the proposed project would not expose sensitive receptors to substantial CO concentrations, and localized air quality impacts related to CO hot spots would be less than significant.

Toxic Air Contaminants

CONSTRUCTION

Construction-related activities would result in short-term, project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation grading, building construction, and other construction activities. DPM was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of DPM (discussed in the following paragraphs) outweighs the potential non-cancer health impacts (CARB 2021). At this time, SDAPCD has not adopted a methodology for analyzing such impacts.

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately four months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period (assumed to be the approximate time that a person spends in a household). OEHHA recommends this risk be bracketed with 9-year and 70-year exposure periods. Health risk assessments should be limited to the period/duration of activities associated with the project.

The maximum $PM_{2.5}$ emissions, which is used to represent DPM emissions for this analysis, would occur during lighting pole installation/construction and paving activities. While lighting pole installation/construction and paving construction emissions represent the worst-case condition, such activities would only occur for four months, less than four percent for a 9-year health risk calculation period and less than one percent for a 30-year and 70-year health risk calculation period. $PM_{2.5}$ emissions would decrease for the remaining construction period because construction activities such as site preparation and grading would require less construction equipment. Therefore, given the aforementioned, DPM generated by project construction is not expected to create conditions where the probability that the Maximally Exposed Individual would contract cancer is greater than 10 in one million. This impact would be less than significant.

OPERATION

Sources of operational TAC's typically include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The project proposed the installation of pole lighting and therefore does not involve any of these uses. The project would not include the operation of permitted sources, such as emergency back-up generators. As such, operation of the proposed project would not be a substantial source of TACs. Therefore, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

Construction activities would be temporary and transitory and associated odors would cease upon construction completion. Accordingly, the proposed project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses. The proposed project would not include these uses as the proposed project entails new pole lighting structures that do not emit odors. Therefore, operational odor impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

4 Biological Resources

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

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?

The project site is developed with existing athletic fields and associated facilities; no sensitive vegetation occurs on, or adjacent to the site. Therefore, no 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 (CDFW) or U.S. Fish and Wildlife Service (USFWS) is expected to occur on site or in the immediate vicinity due to lack of appropriate habitat. As such the project would not directly, or indirectly impact sensitive species.

NO IMPACT

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, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The project site is developed with existing athletic fields and associated facilities and no sensitive vegetation occurs on, or adjacent to the site. No direct impacts to riparian habitats or other sensitive natural communities would occur.

NO IMPACT

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?

No riparian habitat or wetlands occur within or immediately adjacent to the project site. As such, no direct impacts to federally protected wetlands as defined by Section 404 of the Clean Water Act are expected.

NO IMPACT

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?

The project site is located within a developed area of the CSUSM campus that does not function as part of a wildlife movement corridor. The project site, which is developed with athletic fields, does not contain any resources or suitable habitat that would support wildlife movement or a nursery site, such as trees. No impact would occur.

NO IMPACT

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

CSUSM is part of the CSU system, an entity of the State, which is not subject to municipal plans, policies, and regulations, such as the county and/or general plans or local ordinances. No impact would occur.

NO IMPACT

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?

As stated prior, CSUSM is a state entity, therefore it is not subject to municipal plans, policies, or regulations. Although the CSUSM campus is located within the boundaries of the North County Multiple Habitat Conservation Program (MHCP) and the Draft City of San Marcos Subarea Plan, the campus is not covered by these plans. Therefore, the proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan. No impact would occur.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

The following section is based on the results of the Cultural Resources Technical Report that was prepared for the proposed project. The full report is provided as Appendix B of this document.

This section analyzes the project's potential impacts related to cultural resources, including historical and archaeological resources as well as human remains. The analysis in this section is based, in part, on the Cultural Resources Technical Report prepared for the project by Rincon in October 2022. The investigation consisted of a California Historical Resources Information System (CHRIS) records search of the project site as well as a 0.25-mile radius around the project site at the South Coast Information Center (SCIC), a search of the Sacred Lands File (SLF) with the Native American Heritage Commission (NAHC), and a pedestrian field survey conducted on September 19, 2022.

The SCIC records search identified no previously recorded cultural resources within a 0.25-mile radius of the project site. The pedestrian field survey identified no archaeological or historical resources within the project site. On October 25, 2022, the NAHC responded to Rincon's SLF request, stating that the results of the SLF search were positive.

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

As detailed above, there are no known historical resources located on the project site. The proposed project in an area that has been previously graded and is highly disturbed. Installation of the pole lighting improvements would not excavate beyond areas that have been previously disturbed and no import or export of soil would be required. As such, no impacts to historical resources would occur.

NO IMPACT

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

The Cultural Resources Technical Study prepared by Rincon (April 2023) did not identify any archaeological deposits located on the project site. Regardless, considering the density of prehistoric resources recorded in the project vicinity and an analysis of soils present in the project site, the project site is considered to be located within an area sensitive for archaeological resources. Therefore, there is potential for unknown buried archaeological resources to be encountered during construction-related ground disturbance. This is a potentially significant impact.

Mitigation Measures CUL-1 and CUL-2 require retention of an on-call archaeologist and the implementation of specific protocols in the event of an unanticipated discovery. With implementation of these measures, potential impacts to archaeological resources would be reduced to a less than significant level.

Mitigation Measure

CUL-1 On-Call Archaeological Resource Monitoring by Qualified Archaeologist

The project shall retain a qualified archaeologist that meets or exceeds the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) to assess any suspected cultural resources discovered during ground-disturbing activities. Ground-disturbing activities include, but are not limited to, vegetation clearance including turf, shrubs, and trees; the removal, relocation, and/or installation of underground pipelines, footings or foundations for signage, lighting, and other infrastructure or vertical construction; the installation of paved sitework; grading including removal of rock outcrops; and excavation. Upon the discovery of potential resources, the archaeologist will mobilize to the project site to determine if the find warrants further consideration under CEQA.

CUL-2 Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource.

If the resource is determined by the qualified archaeologist to be prehistoric, then the Native American tribal monitor(s) shall also be contacted to participate in the evaluation of the resource (see Mitigation Measure TR-1 regarding required Native American tribal monitoring before and during construction). If the qualified archaeologist and/or Native American monitor(s) determine the resource to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations (CCR) Guidelines Section 15126.4(b)(3)(C).

The data recovery and treatment plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery and treatment plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. CSUSM and the Office of the

Chancellor shall review and approve the data recovery and treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CCR Guidelines Section 15126.4(b)(3)(C).

Significance After Mitigation

The implementation of Mitigation Measures CUL-1 and CUL-2 would reduce impacts to archaeological resources to a less than significant level by ensuring such resources are identified, evaluated, and treated appropriately.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

No human remains are known to be present within the project site. If human remains are found, the California Health and Safety Code Section 7050.5 states no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. Per the Public Resources Code, in the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a most likely descendant. The most likely descendant will complete the inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access. If the most likely descendant does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. Adherence to this regulation regarding the treatment of human remains would reduce impacts to a less than significant level.

LESS THAN SIGNIFICANT IMPACT

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6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a 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?	☐	☐	■	☐

This section is partially based on the Greenhouse Gas Calculations included in Appendix C. The proposed project would consume energy during the operation of the lighting improvements to the sports fields. The pole lighting would be powered by electricity provided to the campus by San Diego Gas and Electric Company (SDG&E).

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

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

Operation of the project would contribute to area energy demand by consuming electricity to power the pole lighting. The proposed project would not include an increased use of natural gas, gasoline, or diesel fuel. Table 5 summarizes the estimated operational energy consumption for the proposed project for night games at the three sports fields. Table 6 summarizes the estimated operational energy consumption for the proposed project for recreational sports at the soccer field. Table 7 provides the total estimated operational energy consumption for the proposed project.

Table 5 Total kWhr While Lights are on for a Night Game Annually

Field	Total kW Load	Hours of Night Games Per Year	kWhr/year
Baseball	149.22	48.00	7162.66
Softball	59.17	12.00	710.04
Soccer	51.48	13.50	694.68
		Total kWhr/year	**8567.68**

Table 6 Total kWhr While Lights are on at the Soccer Field for Recreational Sports

Total kW Load	Hours Lights are on Per Week*	Days Per Year Lights are on**	kWhr/year
51.48	21.25	150.00	164092.50

*assumes that lights are on from sunset to 10:15 pm, an average of 4.25 hours per day
**based on 150 days in the instructional school year

Table 7 Total Project kWhr/year

Total Project kWhr/year	**172660.18**

Operational energy use would increase electricity consumption in the region relative to existing conditions. However, the project would comply with regulatory compliance measures outlined by the State and the City of San Marcos, including but not limited to, Title 24 Building Energy Efficiency Standards. The project does not propose any excessive or unnecessary energy consumption beyond what is typical for a project of this type. The impact to energy consumption would be less than significant.

LESS THAN SIGNIFICANT IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
4. 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?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?

No known active, potentially active, or inactive faults traverse the project area, nor is the project located within an Alquist-Priolo Earthquake Fault Zone (San Marcos 2012b). The Rose Canyon Fault zone and the Newport-Inglewood Fault, located approximately 12 miles west of the project site, are the closest known active faults (DOC 2015). While the potential for on-site rupture cannot be completely discounted (e.g., unmapped faults could conceivably underlie the site), the likelihood for such an occurrence is considered low due to the absence of known faulting within or adjacent to the project site. Therefore, impacts related to fault rupture from implementation of the proposed project would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The project site is located in seismically active southern California and is likely to be subjected to moderate to strong seismic ground shaking. Seismic shaking at the site could be generated by events on any number of known active and potentially active faults in the region, including the Rose Canyon, Newport-Inglewood (offshore), Elsinore, Coronado Bank, Earthquake Valley, San Jacinto, Palos Verdes, or Whittier fault zones. Faulting in the region generally comprises a number of northwest-trending, predominantly right-lateral strike-slip faults at the boundary between the Pacific and North American tectonic plates. An earthquake along any of these known active or potentially active fault zones could result in severe ground shaking and consequently cause injury and/or property damage in the project vicinity. This could potentially result in significant impacts to proposed facilities, depending on factors such as event duration, motion frequency, and underlying soil/geologic conditions. The project design, however, would incorporate measures to accommodate projected seismic loading, pursuant to the applicable California State University Seismic Safety Requirements, as well as existing guidelines such as the California Building Code (CBC; California Code of Regulations, Title 24, Part 2). The CBC provides appropriate measures to accommodate seismic loading parameters in California. Based on the incorporation of applicable measures into project design and construction, impacts associated with strong seismic ground shaking would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Liquefaction is the phenomenon that occurs during severe ground shaking whereby soils reduce greatly in strength and temporarily behave similarly to a fluid. Severe or extended liquefaction can result in significant effects to surface and subsurface facilities through the loss of support and/or foundation integrity. Liquefaction is associated primarily with loose (low density), saturated, fine- to medium-grained, cohesionless soils. Due to the dense nature of the compacted fill and granitic rock underlying the project site, the potential for liquefaction is considered very low (CSUSM 1988). Moreover, given that the project does not include the construction of habitable structures, and that construction of the proposed pole lighting improvements would incorporate standard guidelines from the CBC, no impacts associated with liquefaction would occur.

NO IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

The project site has low susceptibility for landslides and slope instability due to its soil composition and level topography (CSUSM 1988). Moreover, the project would not require blasting or other activities that could result in rock falls or trigger landslides or slope instability. Given the absence of active faults and the relatively level topography in the project area, the potential for seismically induced landslides is very low to nonexistent. No impact related to landslides would occur.

NO IMPACT

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

Construction of the proposed project would expose soil via ground disturbance associated with trenching and construction of the light standards and equipment shelter. The contractor would implement erosion and sedimentation control measures to minimize on-site erosion and off-site transport of eroded materials in compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements. Control measures would include applicable best management practices (BMPs), such as covering stockpiled excavated materials to reduce potential off-site sediment transport and regular inspection and maintenance of all sediment catchment facilities to ensure proper function and effectiveness. Project-specific BMPs are discussed in further detail in Item 9a. Additional erosion control measures also may be required in association with NPDES permit requirements, as discussed in Item 10a. Compliance with the NPDES Construction General Permit, in addition to the above considerations, would ensure that construction impacts would be less than significant.

Once construction is completed, the project site would not result in substantial soil erosion or loss of topsoil; no operational impacts would occur.

NO IMPACT

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?

As discussed under Items *a.1* through *a.4* of this section, the project site is relatively level and comprised of generally compact soil conditions and therefore, not subject to liquefaction or landslide risk. The potential for geologic collapse on the project site is also low, due to the flat

topography of the project site and vicinity. Installation of the pole lighting improvements would not cause local soil or geologic units to become unstable nor would the project cause on- or off-site land sliding, lateral spreading, subsidence, liquefaction, or collapse. Trenching and other construction activities would be performed in accordance with the project plans and all applicable Occupational Safety and Health Administration (OSHA) requirements. Incorporation of standard engineering guidelines would ensure that effects related to unstable geologic units or soils would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?

Expansive soils are generally high in clays or silts that shrink or swell with variation in moisture. Wetting can occur in a number of ways, including absorption from the air, rainfall, groundwater fluctuations, lawn watering, or broken water or sewer lines. The soil encountered in the geotechnical field investigation conducted for the project is considered to be expansive (expansion index of greater than 20) as defined by the 2013 CBC Section 1803.5.3. The majority of the soil encountered is anticipated to possess a “very low” to “low” expansion potential (expansion index of 50 or less). As a matter of project design, all excavations and trenches would be properly stored and maintained in accordance with applicable OSHA rules and regulations. Therefore, potential risks associated with expansive soils would be less than significant.

NO IMPACT

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

Septic tanks or other alternative wastewater disposal systems would not be a part of the proposed project. No impacts would occur.

NO IMPACT

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

A paleontological survey of the CSUSM campus was conducted by the City in 1987 (CSUSM 1988). The survey concluded that the igneous and granite rocks found within the campus would not contain fossils due to the way they were formed. Given that ground disturbance for this project is anticipated to consist of minor grading of the previously disturbed project site and the underlying sediments are not expected to contain any fossils, it is unlikely that these excavations will impact sediments with a high paleontological sensitivity. Nonetheless, implementation of Mitigation Measure GEO-1 would reduce any potential impacts to paleontological resources to a less than significant level.

Mitigation Measure

GEO-1 Unanticipated Discovery of Paleontological Resources

In the event a fossil is discovered during construction of the project, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a Qualified

Professional Paleontologist. If the find is determined to be significant, the applicant shall retain a Qualified Professional Paleontologist, to direct all mitigation measures related to paleontological resources. The Qualified Professional Paleontologist shall design and carry out a data recovery plan consistent with the SVP standards (2010).

Significance After Mitigation

The implementation of Mitigation Measure GEO-1 would reduce impacts to a less than significant level by ensuring that unanticipated discoveries are treated accordingly.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	■	☐

Setting

Climate Change and Greenhouse Gases

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented AB 32, the "California Global Warming Solutions Act of 2006." On September 8, 2016, the governor signed Senate Bill 32 (SB 32) into law, which requires the State to further reduce GHGs to 40 percent below 1990 levels by 2030. On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.

Most individual projects do not generate enough GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

City of San Marcos Climate Action Plan

The City of San Marcos adopted its updated Climate Action Plan (CAP) in December 2020 (City of San Marcos 2020). The City's updated CAP establishes GHG emissions targets for years 2020 and 2030, consistent with statewide goals identified in AB 32, Executive Order S-03-05, and SB 32. The CAP contains comprehensive implementation actions related to transportation, land, energy, and

water uses, as well as managing wastewater and solid waste generation. The City's goals are to reduce GHG emissions four percent below 2012 levels by 2020 and 42 percent below 2012 levels by 2030.

The City's CAP includes three methods to evaluate the GHG impacts associated with proposed development projects in the City. The first method is to screen out projects that would be too small to make a considerable contribution to the cumulative impact of climate change and would not need to provide additional analysis to demonstrate consistency with the CAP. The City developed a list of project screening thresholds for various project types that would be anticipated to emit less than 500 MT CO_2e per year. The second method is to evaluate whether a project would incorporate applicable GHG reduction measures from the CAP. The City prepared a CAP Consistency Checklist to simplify this review; where a project complies with the checklist, no further analysis is required. The third method is intended to accommodate projects that cannot use the Checklist due to unique land uses or circumstances but are otherwise consistent with CAP projections. These projects may incorporate project specific GHG reduction measures and demonstrate consistency with the CAP through comparison to a numerical threshold of 2.1 MT CO_2e per service population per year, where service population is defined as the sum of the number of residents and jobs generated by the project.

Thresholds

According to the CEQA Guidelines, projects can tier off a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, Beyond Newhall and 2020, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions impact on the environment (2016). The CEQA Guidelines define the requirements necessary to qualify as a comprehensive plan for the reduction of GHG emissions (CEQA Guidelines, Section 15183.5):

1. Quantify existing and projected GHG emissions within the plan area.
2. Establish a reduction target based on substantial evidence, where GHG emission are not cumulatively considerable).
3. Identify and analyze sector specific GHG emissions from Plan activities.
4. Specify policies and actions (measures) that local jurisdictions will enact and implement over time to achieve the specified reduction target.
5. Establish a tool to monitor progress and amend if necessary.
6. Adopt in a public process following environmental review.

A key aspect of a qualified GHG reduction plan is substantial evidence that the identified reduction target establishes a threshold where GHG emissions are not cumulatively considerable. The AEP Beyond Newhall White Paper identifies this criterion as being a local target that aligns with the statewide legislative targets.

The updated San Marcos CAP, with a 2030 target that is consistent with SB 32, is a qualified GHG reduction plan consistent with the requirements of CEQA Guidelines Section 15183.5. Therefore, the San Marcos CAP thresholds are used to determine project GHG impacts.

Construction and operation of the proposed project would generate GHG emissions. This analysis considers the combined impact of GHG emissions from both construction and operation.

Construction and operational GHG emissions have been quantified and are provided for informational purposes. This section is based on air quality modeling and electricity conversion and emissions estimation provided in Appendix A and Appendix B.

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

As previously discussed under *Setting*, the City of San Marcos CAP is a qualified GHG reduction plan consistent with the requirements of CEQA Guidelines Section 15183.5. Project GHG emissions would be less than significant if it can be demonstrated that the project would generate less than 500 MT CO_2e per year.

Project construction activities are assumed to occur over a period of approximately four months. Based on CalEEMod modeling results, construction activities for the project would generate an estimated 102 MT of CO_2e in 2024, as shown in Table 8.

Table 8 Estimated Construction Emissions of Greenhouse Gases

Construction Year	Annual Emissions MT CO_2e
2024	102

Notes: See Appendix A for modeling results. Some numbers may not add up precisely due to rounding considerations.

Operational GHG emissions associated with the project would be emissions from electricity usage for the proposed field lighting. Emissions from mobile sources would be minimal as maintenance of the project site, i.e., the soccer, baseball, and softball fields, would not change from existing conditions. As mentioned in Section 17, *Transportation*, the project would generate minimal additional trips compared to existing trips at CSUSM.

Operational emissions from electricity used by the project were calculated manually by multiplying the estimated total kilowatt hours (kWhr) of electricity used for the lighting times the maximum hours the lights would be on annually, multiplied by the San Diego Gas & Electric intensity emission factors for CO_2e, CH_4, and N_2O[2] (California Air Pollution Control Officers Association [CAPCOA] 2021). Emissions from waste, water, and wastewater would not be generated by the stadium lighting project.

Table 9 summarizes the net GHG emissions associated with the proposed project. As shown therein, when combined with construction emissions, the project would result in 144 MT CO_2e per year.

Table 9 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MT CO_2e)
Project Construction	102
Project Operational	42
Total Emissions from Project	**144**

Sources: See Appendix B for operational GHG calculations.

2 San Diego Gas & Electric intensity emission factors were obtained from CalEEMod default data for the latest reporting year available from San Diego Gas & Electric.

As shown in Table 8 and Table 9, combined annual emissions of GHG emissions would not exceed the CAP's threshold of 500 MT CO_2e per year. The CAP provides a CAP Consistency Checklist; however, as shown above, the project would emit less than 500 MT CO_2e per year. Therefore, the project does not need to provide a CAP Consistency Checklist because projects that generate less than 500 MT CO_2e per year would not require further analysis. Impacts from GHG emissions would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

The City of San Marcos CAP is consistent with statewide legislation and establishes strategies, measures, and actions to reduce GHG emissions in the City. As previously discussed, projects that emit less than 500 MT CO_2e per year would not make a considerable contribution to the impact of climate change and would not need to provide additional analysis to demonstrate consistency with the CAP. Therefore, as the project would emit less than 500 MT CO_2e per year, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 0.25 mile of an existing or proposed school?	☐	☐	■	☐
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e. For a project located in 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	☐	☐	☐	■

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
of loss, injury, or death involving wildland fires?				

a. Would the project create a significant hazard to the public or the environment through the routine transport, 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?

During the project construction period, hazardous substances used to maintain and operate construction equipment (such as fuel, lubricants, etc.) could be present; however, it is not expected that large-scale staging and equipment/materials storage would be necessary. CSUSM contracts with licensed hazardous waste transporters to ensure that all hazardous waste generated by the campus are transported off campus for treatment or disposal at licensed hazardous waste facilities. Transport, use, and disposal of hazardous materials associated with the project would be conducted in accordance with applicable federal and State laws, and the project would be subject to the NPDES Construction General Permit. Conformance with the Construction General Permit would entail implementation of a Stormwater Pollution Prevention Plan (SWPPP) to address the discharge of contaminants (including construction-related hazardous materials) through appropriate BMPs. While specific BMPs would be determined during the SWPPP process based on site-specific characteristics (equipment types, etc.), they would include standard industry measures and guidelines contained in the NPDES Construction General Permit text. Based on implementation of appropriate BMPs to provide conformance with the NPDES Construction General Permit, potential impacts associated with construction-related hazardous materials would be less than significant.

In compliance with the California Health and Safety Code, Section 25503.5, a Hazardous Materials Business Plan (HMBP) would be prepared to reduce the potential for impacts. Additionally, CSUSM has several plans and programs in place to address accidental release of hazardous materials, including a campus HMBP, an Emergency Management Program, a Spill Prevention Control and Countermeasure Plan. Accordingly, impacts from routine transport, use, or disposal of hazardous materials would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The California Department of Toxic Substances Control (DTSC) EnviroStor database and the SWRCB GeoTracker database provide information on hazardous materials sites. No areas of concern within one mile of the project site were listed on the EnviroStor database. The Geotracker database identified one area of concern that was submitted and closed in 1995 (SWRCB 2022). This area of concern relates to pesticides/herbicides, petroleum/fuels/oils, and polychlorinated biphenyls in soil, the case has been closed and has been identified as clean. As discussed above, the transport, use, and storage of hazardous materials during the construction of the project would be conducted in

accordance with the NPDES permit, SWPPP, HMBP, and campus-wide plans and programs discussed in Item 10b Additionally, operation of the proposed residential project would not involve the use or transport of large quantities of hazardous materials. Therefore, impacts related to hazardous emissions or materials affecting local schools would be less than significant. Therefore, impacts related to hazardous emissions or materials affecting the school would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. The analysis for this section included a review of the following resources to provide hazardous material release information:

- SWRCB GeoTracker database
- DTSC EnviroStor database

A search of the EnviroStor database identified one Resource Conservation and Recovery Act site within 0.25 mile of project site, located on the campus, but not on the project site specifically (DTSC 2022). The case is related to a past poultry farm and its effects on the site, the RWQCB became involved, and the case was closed in 1995. In addition, according to GeoTracker, there are no LUST or other clean-up sites within 0.25 mile of the project site (SWRCB 2022). Therefore, the project is not located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment. Thus, no impact would occur.

NO IMPACT

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?

The project is not located within an airport land use plan or within two miles of a public airport. The nearest public airport is McClellan-Palomar Airport, which is operated by the County of San Diego and located approximately seven miles west of the project in the City of Carlsbad. Therefore, the proposed project would not result in a safety hazard to the construction or maintenance workers. No impact would occur.

NO IMPACT

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

CSUSM has an Emergency Management Plan, which addresses how the campus will respond to emergency occurrences from preparedness through recovery. The project would be subject to the policies and procedures set forth in this plan. In general, the project would not affect the operation of local roadways and no lane closures or detours that could affect emergency response would be required. As such, implementation of the project would not adversely affect the ability of

emergency officials to carry out an emergency response plan or evacuation plan. No impact would occur.

NO IMPACT

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

Construction and operation of the proposed project would not expose people or structures to a significant risk or loss, injury, or death involving wildland fires. While the CSUSM campus is located adjacent to undeveloped hillsides that extend to the west and south, which may be susceptible to wildland fires, the project site is surrounded by development and no structures that would be occupied by people are proposed. No impacts related to wildland fires would occur.

NO IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 off-site;	☐	☐	☐	■
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	■	☐
(iv) Impede or redirect flood flows?	☐	☐	☐	■
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	☐	☐	■	☐

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
sustainable groundwater management plan?				

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

Potential water quality impacts associated with the proposed project would be limited to short-term construction-related erosion and sedimentation. Based on the developed nature of the project site and the limited potential for the proposed construction of pole lighting improvements to generate pollutants or runoff beyond what already occurs on site, no potential long-term impacts to water quality would result. As required under the NPDES Construction General Permit, administered by the San Diego RWQCB, a SWPPP would be created for the proposed project. The plan would address erosion control measures that would be implemented to avoid erosion impacts to exposed soil associated with construction activities. The SWPPP would include a program of BMPs to provide erosion and sediment control and reduce potential impacts to water quality that may result from construction activities. BMPs would be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable and may include, but not be limited to, the following:

- Protection of storm drain inlets located within the project impact footprint and in downstream off-site areas with the use of BMPs acceptable to CSUSM, local jurisdictions, and the San Diego RWQCB.
- Sweeping dirt and debris from paved streets in the construction zone on a regular basis, particularly before predicted rainfall events.
- Proper storage, use, and disposal of construction materials.
- Removal of sediment from surface runoff before it leaves the project site through use of silt fences or other similar devices around the laydown area perimeters.
- Protection of tracking soil off site through use of a gravel strip or wash facilities at exits from project laydown areas.
- Protection or stabilization of stockpiled soils.

Potential water quality impacts would be avoided or reduced below a level of significance through conformance with NPDES permit conditions and implementation of the applicable BMPs.

LESS THAN SIGNIFICANT IMPACT

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?

The proposed project would not require the use of, or otherwise interfere with, groundwater supplies. Therefore, the project would not substantially deplete groundwater supplies or interfere

with groundwater recharge such that there would be a net deficit in the aquifer volume or permanent lowering of the local groundwater table. No impact would occur.

NO IMPACT

c.(i) 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 result in substantial erosion or siltation on- or off-site?

A minimal amount of ground disturbance would be required for installation of pole lighting improvements. Once the project is constructed, the site will be returned to a similar condition to what exists on site, with the exception of the equipment shelter. The project would not substantially alter the existing drainage pattern of the project site or surrounding area, including the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site. No impact would occur.

NO IMPACT

c.(ii) 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

As discussed in Item 9.ci, the proposed project would not result in substantial changes to the existing drainage of the project site, nor would project implementation result in an increase in local surface runoff volumes. No impact would occur.

LESS THAN SIGNIFICANT IMPACT

c.(iii) 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 that would 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?

As stated in Item c(ii), the proposed project would not increase the local surface runoff volumes. On-site impervious surfaces would incrementally increase with the construction of the equipment shelter and generator enclosure; however, operation of the pole lighting would not provide a substantial additional source of polluted runoff, nor would the project create or contribute runoff that would exceed the capacity of existing or planned storm water drainage systems. Potential short-term pollutant generation would be avoided or reduced below a level of significance through conformance with NPDES Construction General Permit conditions and implementation of erosion and sedimentation control measures to minimize on-site erosion, as discussed in Item 9a, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c.(iv) 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 impede or redirect flood flows?

Implementation of the project would not entail the construction of structures that would impede or redirect flood flows. The CSUSM campus is not located within a Federal Emergency Management Agency (FEMA)-designated 100-year floodway or other flood areas (San Marcos 2012b). No impact associated with flooding would occur.

NO IMPACT

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

Tsunamis are large ocean waves generated by fault displacement or major ground movement. The primary areas susceptible to tsunamis are those near the ocean and along low-lying river channels. Given the project's distance from the Pacific coast (approximately 10 miles) and the elevation of the site above 600 feet above mean sea level (AMSL), no impacts associated with tsunamis would occur.

A seiche is a large wave generated in an enclosed body of water, often caused by ground shaking associated with seismic activity. The project is located upstream of the nearest water body, Lake San Marcos, so a seiche within that water body would not pose a risk to the project site. No impacts resulting from inundation by a seiche would occur.

As noted in Items 9a.iii, 9a. iv, and 7.c, the project is not located within an area prone to land sliding, lateral spreading, subsidence, liquefaction, or collapse. As such, the project is not located within the vicinity of slopes potentially capable of producing mudslides, nor does the project propose housing, structures, or uses that would be subject to significant risk of loss, injury, or death from mudflows. For these reasons, no impacts associated with mudflow would occur.

NO IMPACT

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

As described in Item a of this section, project construction and operational activities would be required to comply with the NPDES Construction General Permit and SWPPP administered by the San Diego RWQCB. With implementation of the required SWPPP, the proposed project would adequately detain, and control stormwater flows on the project site and would not conflict with or obstruct the Water Quality Control Plan for the San Pasqual Valley Groundwater Basin. Due to the nature of the project and its lack of permanent water usage, the proposed project would not conflict or obstruct the sustainable groundwater management of the San Pasqual Valley Groundwater Basin, therefore the impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?

The proposed project would be constructed in an area of the CSUSM campus that is already developed. Construction and operation of the proposed pole lighting improvements would not physically divide an established community. No impact would occur.

NO IMPACT

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?

The proposed project is located on the CSUSM campus within the City of San Marcos. CSUSM is part of the CSU system, an entity of the State, which is not subject to municipal plans, policies, or regulations. Thus, the CSUSM campus is not part of or subject to the City of San Marcos General Plan, or other local plans. The adopted Campus Master Plan is the applicable campus land use plan, which contains specific guiding principles for planning and design of the neighborhoods, buildings, parking areas, common areas, and landscaping on campus (CSUSM 2018). Campus development that is consistent with the adopted Campus Master Plan would not have land use impacts. The project proposes the installation of pole lighting equipment and improvements to the baseball, softball, and soccer fields, which would not conflict with the adopted Campus Master Plan. The site is identified as a recreation facility in the Master Plan, and the project would not change the land use or affect the function or operations of the fields. No associated land use impacts would occur.

NO IMPACT

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12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	■

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?

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?

The majority of the CSUSM campus, including the project site, is underlain by Cretaceous-age granite that is commonly extracted and processed for use as construction aggregate (CSUSM 1988). According to the State's Mineral Land Classification Maps, the project is located within Aggregate Mineral Resource Classification Zone Category 3 (MRZ-3) (DOC 1996). MRZ-3 indicates an area containing deposits whose significance cannot be evaluated from available data. Although aggregate materials may be present within the project site, these resources have not been identified by the California Department of Mines and Geology as significant mineral resources. Moreover, the project site is already developed with a sports field and part of the CSUSM campus and is not planned for use as a mineral resource recovery site. No impacts to mineral resources would occur as a result of project implementation.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 ground borne vibration or ground borne 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?	☐	☐	☐	■

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Caltrans 2013).

Human Perception of Sound

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Caltrans 2013).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible

(eight times the sound energy); and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (10.5 times the sound energy) (Caltrans 2013).

Sound Propagation and Shielding

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in the noise level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line), the path the sound will travel, site conditions, and obstructions. Noise levels from a point source (e.g., construction, industrial machinery, air conditioning units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this "shielding" depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense woods, and man-made features, such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptor used for this study is the equivalent noise level (L_{eq}). L_{eq} is one of the most frequently used noise metrics; it considers both duration and sound power level. The L_{eq} is defined as the single steady-state A-weighted sound level equal to the average sound energy over a time period. When no time period is specified, a 1-hour period is assumed. The L_{max} is the highest noise level within the sampling period, and the L_{min} is the lowest noise level within the measuring period. Normal conversational levels are in the 60 to 65-dBA L_{eq} range; ambient noise levels greater than 65 dBA L_{eq} can interrupt conversations (Federal Transit Administration [FTA] 2018).

Groundborne Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent buildings or structures and vibration energy may propagate through the buildings or structures. Vibration may be felt, may manifest as an audible low-frequency rumbling noise (referred to as groundborne noise), and may cause windows, items on shelves, and pictures on walls to rattle. Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants at vibration-sensitive land uses and may cause structural damage.

Typically, ground-borne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration increases. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS) vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used as it corresponds to the stresses that are experienced by buildings (Caltrans 2020).

High levels of groundborne vibration may cause damage to nearby buildings or structures; at lower levels, groundborne vibration may cause minor cosmetic (i.e., non-structural damage) such as cracks. These vibration levels are nearly exclusively associated with high impact activities such as blasting, pile-driving, vibratory compaction, demolition, drilling, or excavation.

Project Noise Setting

Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Since CSUSM does not identify noise-sensitive receptors, typical sensitive receptors include residential uses and schools. Off-site noise sensitive receptors located in close proximity to the project site include single- and multi-family residences situated along South Twin Oaks Valley Road and East Barham Drive, less than a quarter mile from the boundaries of the project site. The closest off-campus noise-sensitive use to the project site is an apartment complex located approximately 700 feet to the south and across Craven Road. The athletic fields and facilities surrounding the proposed equipment are active recreational uses that are generally not considered noise-sensitive.

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?

Construction

Construction activity would generate temporary noise in the project site vicinity, exposing surrounding sensitive receivers to increased noise levels. Project construction noise would be generated by heavy-duty diesel construction equipment used for demolition, site preparation, grading, and site restoration activities. Each phase of construction has a specific equipment mix and associated noise characteristics, depending on the equipment used during that phase. Construction noise would typically be higher during the more equipment-intensive phases of initial construction (i.e., site preparation) and would be lower during the later construction phases. Noise impacts from construction equipment are typically assessed from the center of the equipment activity area (e.g., construction site, grading area, etc.) over the time period of a construction day.

Over the course of a typical construction day, it is assumed that construction noise levels would range from approximately 58 to 76 dBA L_{eq} at the nearest sensitive receptors. In particular, residences along Craven Road share a common property line with CSUSM. The proposed projected and related light poles would be located between 700 feet to 750 feet from the nearest homes along Craven Road. Construction noise would be noticeable at times and may temporarily interfere with normal outdoor activities such as speech communications. However, when construction activities occur farther from the homes, construction noise levels would be reduced due to a greater distance from the source. These fluctuations would occur temporarily over the course of construction. Due to the distance of the proposed equipment and construction activities from and the nearest off-campus noise-sensitive receptors (over 700 feet), construction noise impacts would be less than significant.

Operation

The existing noise environment in the project site vicinity is mainly associated with traffic noise from nearby roadways and residential activities, as well as by noise generated by the existing school uses, such as existing athletic activities, students walking to and from class, etc. It should be noted, CSUSM has current activities on the project site when school is actively in session.

The proposed project consists of new lighting poles surrounding existing athletic fields with no anticipated increase in the number of spectators in attendance. However, the number of events could increase, due to the use of the existing fields in the evening hours, which allows more time for activities throughout the day. An existing temporary and mobile public address (PA) system is currently in use at the athletic fields. The duration of use of this existing system is proposed as part of this project. It should be noted that noise from the PA systems would only occur while an announcement is being made and would cease once the announcement has been made by the speaker. In addition, noise levels from the nighttime hours of the existing PA systems would be similar to the existing PA system output during daytime games at nearby residences and sensitive receptors. Since the PA system noise would be similar to existing conditions, event-related noise is not expected to significantly increase compared to existing conditions. Thus, the project site would continue to operate as it does currently and operational noise impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in generation of excessive ground borne vibration or ground borne noise levels?

Project construction would not involve activities typically associated with excessive groundborne vibration such as pile driving or blasting. The equipment utilized during project construction that would generate the highest levels of vibration would include rollers and loaded trucks. CSUSM has not adopted standards to assess vibration impacts during construction and operation. However, Caltrans has developed limits for the assessment of vibration from transportation and construction sources. The Caltrans vibration limits are reflective of standard practice for analyzing vibration impacts on structures from continuous and intermittent sources.

Project construction may require operation of vibratory equipment such as loaded trucks and bulldozers near off-site structures. Overall, vibration levels from individual pieces of construction equipment would not exceed the threshold at which damage can occur to residential structures (0.20 inches per second PPV) or the threshold at which transient vibration sources would be distinctly perceptible (0.25 inches per second PPV). Furthermore, construction activities would generally occur five days per week, which would be outside the vibration-sensitive hours of sleep. Therefore, construction vibration impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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?

The proposed project is not located within two miles of a public airport or public use airport, and no private airstrips are located in the vicinity. The nearest public airport is McClellan-Palomar Airport,

which is operated by the County of San Diego and located approximately seven miles west of the project in the City of Carlsbad. Therefore, the project would not result in impacts related to exposure of people to noise from an airport.

NO IMPACT

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	■
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

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)?

The proposed project would not directly induce population growth due to the fact that no new housing or businesses are proposed. The proposed project would not extend services or infrastructure to new areas or allow for the development of land that previously could not be developed due to service constraints. No impact associated with population growth would occur.

NO IMPACT

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

The proposed project would not displace people or homes. No impact would occur.

NO IMPACT

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15 Public Services

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

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The San Marcos Fire Department currently provides fire protection services for the CSUSM campus, including the project site. Construction and operation of the proposed project would generate virtually no demand for increased public services. During construction, fire protection may be required, but these would be short-term demands and would not require increases in the level of public service offered or affect response times. Because of the low probability and short-term nature of potential fire protection needs during construction, the proposed project would result in less than significant impacts to these services.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental

impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The CSUSM Police Department provides police protection and public safety services for the CSUSM campus. The proposed project would not require increased police protection and public safety services from the CSUSM Police Department, as it would be constructed within the existing field facilities and would not induce population growth on campus. No impacts would occur.

NO IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The project does not propose new housing, nor would it induce population growth such that there would be an increase in demand for school services, public parks, or other public facilities. Thus, the project would not generate a need for new or expanded school services, parks or recreational facilities, or other public services and facilities, no impact would occur.

NO IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	■
a. 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?	☐	☐	☐	■

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?

As discussed in Items 15a.4-5, the proposed project would not induce demand for public parks or recreational facilities. The project does not include recreational facilities or require the construction or expansion of recreational facilities, no impact would occur.

NO IMPACT

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17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 use (e.g., farm equipment)?	☐	☐	☐	■
d. Result in inadequate emergency access?	☐	☐	☐	■

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

The proposed project does not include components that would result in long-term traffic generation or that would result in long-term alteration of the existing roadway or sidewalk configurations, or conflict with the circulation system identified in the CSUSM Master Plan. The proposed project would not affect transit routes or services, or bicycle/pedestrian facilities. Thus, implementation of the project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.

NO IMPACT

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

CEQA Guidelines Section 15064.3(b) identifies appropriate criteria for evaluating transportation impacts. It states that land use projects with VMT exceeding an applicable threshold of significance may indicate a significant impact, and that projects that decrease VMT 15 percent below existing conditions should be presumed to have a less than significant transportation impact.

As discussed under Item *a.* above, the project would generate minimal additional trips compared to existing trips at CSUSM. According to the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (2018), land use projects, such as the proposed project, "that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact." As the project proposes to construct new pole lighting structures, it can be assumed that the project would generate fewer

than 110 trips per day, as the existing use at the project site would not change. Therefore, the project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3 (b). Thus, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

The proposed project would not include design features that would affect traffic safety, nor would it cause incompatible uses (such as tractors) on local roads. No impact would occur.

NO IMPACT

d. Would the project result in inadequate emergency access?

The proposed project would not interfere with emergency access routes. Construction would occur within the CSUSM campus and would not be of a magnitude or duration that would substantially affect the capacity or access to local roadways. No impact would occur.

NO IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or 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)?	☐	■	☐	☐
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.	☐	■	☐	☐

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is 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)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is 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?

On July 1, 2015, AB 52 was enacted and expanded CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency

shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (Public Resources Code Section 21084.3).

Public Resources Code Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that are either:

1. 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
2. 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 these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Rincon contacted the NAHC on August 22, 2022, to request a SLF search of the project site. As part of this request, Rincon asked the NAHC to provide a list of Native American groups and/or individuals culturally affiliated with the area who may have knowledge of archaeological resources in the project site. On October 25, 2022 Rincon received a response from the NAHC. The SLF results were positive and a list of tribes to contact was attached (see Appendix B of this IS-MND).

On January 25, 2023, Rincon attended one virtual consultation meeting between CSUSM and the San Pasqual Band of Mission Indians and one virtual meeting between the CSUSM and the Rincon Band of Luiseño Indians. During the virtual meeting, the San Pasqual Band of Mission Indians requested to have a Native American monitor present during ground disturbance. In addition to a virtual meeting, the Rincon Band of Luiseño Indians transmitted two letters to CSUSM (dated to January 25, 2023, and March 7, 2023) reviewing Rincon's cultural resources assessment. These letters have been included in Appendix B of the Cultural Resources Technical Report.

In government-to-government consultation, the Rincon Band of Luiseño Indians identified the project site to be located within a potential Traditional Cultural Property (TCP). However, the current project does not include a federal nexus whereby a formal TCP designation can be made. CSUSM does not dispute the cultural significance of the project vicinity to the Rincon Band of Luiseño Indians. However, as was confirmed in government-to-government consultation between the Rincon Band of Luiseño Indians and CSUSM officials, construction of the proposed project would not result in a substantial adverse change in existing conditions under either Public Resources Code Sections 21084.1 or 21084.2 or otherwise trigger a finding of a significant effect on a known tribal cultural resource.

Nonetheless, the potential remains for the unanticipated discovery of a tribal cultural resource on the project site, which would be a significant impact. Mitigation Measure TRI-1 requires the retention of a Native American tribal monitor to participate in pre-construction awareness training and conduct construction monitoring. With this measure, project impacts on tribal cultural resources would be reduced to less than significant.

Mitigation Measure

TRI-1 Native American Tribal Cultural Resource Pre-Construction Worker Awareness Training and Construction Monitoring

The project shall retain a Native American tribal monitor to monitor ground-disturbing activities prior to the commencement of such activities. Ground-disturbing activities include, but are not limited to, vegetation clearance including turf, shrubs, and trees; the removal, relocation, and/or installation of underground pipelines, footings or foundations for signage, lighting, and other infrastructure or vertical construction; the installation of paved sitework; grading including removal of rock outcrops; and excavation. Native American monitoring shall be performed by a monitor or monitors from the Native American tribes that participated in consultation with CSUSM.

At the commencement of monitoring activities, the Native American monitor(s) shall convey to the on-site construction crew the types of tribal cultural material that may be encountered, tribal cultural sensitivity issues, and the proper protocol for the treatment of tribal cultural materials in the event of a find.

Tribal monitors shall have the authority to halt and redirect work should any tribal cultural resources be identified during monitoring. Native American monitoring may be reduced to spot-checking or eliminated at the discretion of the tribal monitor(s), in consultation with CSUSM, as warranted by such conditions as the absence of cultural resources and ground-disturbing activities within previously disturbed soils. If monitoring is reduced to spot-checking, spot-checking shall occur when project activities move to a new location within the project site and when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock). A log or record of monitoring activities shall be submitted by the monitor(s) to CSUSM for its records. (See Mitigation Measures CUL-1 and CUL-2 regarding the requirements for retention of an on-call archaeologist and, in the event of an unanticipated discovery, the preparation of a data recovery and treatment plan if required, and preparation of a final monitoring report.)

In the event that Native American tribal cultural resources are recovered during the course of ground-disturbing activities (i.e., inadvertent discoveries), CSUSM shall relinquish ownership of tribal cultural resources, including sacred items, burial goods, tribal cultural artifacts and non-human remains, as part of the required mitigation for impacts to tribal cultural resources, and adhere to the following:

- Preservation-in-place is the preferred option; preservation-in-place means avoiding the resources and leaving them in the place where they were found with no development affecting the integrity of the resource.

- If preservation-in-place is not feasible, on-site reburial of the discovered items as detailed in the treatment plan required pursuant to MM CR-1 shall be required. This shall include measures and provisions to protect the future reburial area from further impacts in perpetuity. Reburial shall not occur until all legally required cataloguing and basic recordation have been completed. No recordation of sacred items shall be permitted without the written consent of all consulting Native American tribal governments.

- In the event that on-site reburial is not feasible, CSUSM shall enter into a curation agreement with an appropriate qualified repository in San Diego County to ensure that tribal cultural resources are curated and made available to other archaeologists/researchers for further study. The collections and associated records shall be transferred, including title, to an appropriate

curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation.

Significance After Mitigation

The implementation of Mitigation Measure TRI-1 would reduce impacts to tribal cultural resources to a less than significant level by ensuring that Native American tribal pre-construction worker awareness training and construction monitoring are conducted before and during ground-disturbing activities.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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?	☐	☐	☐	■

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?

The proposed project would not require the construction or expansion of wastewater facilities or exceed applicable wastewater treatment requirements because it would not involve the construction of facilities that would generate sewage. The proposed project would not require the construction or expansion of storm water drainage facilities. The proposed project would avoid impacts to existing storm water facilities in the vicinity. The project would not require relocation or

construction of new or expanded electric power, natural gas, or telecommunication facilities. No impact would occur.

NO IMPACT

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?

The proposed project would involve installation and operation of pole lighting facilities that would not require new or expanded entitlements for water service. No impact would occur.

NO IMPACT

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?

The proposed project would not require or result in the construction of new wastewater treatment facilities or the expansion of existing wastewater treatment facilities. No impact would occur.

NO IMPACT

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?

Operation of the proposed project would not generate solid waste or affect landfill capacity. During construction a minimal amount of construction waste would be generated. Solid waste debris would be disposed of at a permitted landfill. Moreover, AB 939, also known as the Integrated Waste Management Act, and AB 341 mandate the reduction of solid waste disposal in landfills by requiring a minimum of 50 percent diversion rate. Accordingly, at least half of the potential construction waste would be diverted from a landfill. The remaining quantity is reasonably anticipated to be within the permitted capacity of the permitted landfills serving the project area. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

The proposed project would comply with all applicable, federal, State, and local statutes and regulations related to solid waste. No impact would occur.

NO IMPACT

20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	■	☐

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

The project site is not classified as a very high fire hazard severity zone (VFHSZ), but the majority of the CSUSM is within a VFSHZ, therefore, the project is near a VFHSZ and should be evaluated as such (California Department of Forestry and Fire Protection (CAL FIRE) 2022). The CSUSM 2022 Campus Safety Plan outlines the safety goals and policies of the campus including fire safety, while the 2021 Annual Fire Safety Report informs the public of fire safety updates and policies for the upcoming year as well as fire statistics of the years 2018, 2019, and 2020 (CSUSM 2022a & 2021). According to the Campus Evacuation Plan, the project site is not subject to any evacuation areas regarding fires or any other safety emergency (CSUSM 2022b). While project construction could require temporary truck and equipment access and parking on and around the project site, construction would not require lane or roadway closures that would temporarily impair emergency response or evacuation.

The project would not impair the 2022 Campus Safety Plan or Campus Evacuation Plan; therefore, the impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

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

The project site is not within a VFHSZ, but the majority of the CSUSM campus is classified as a VFHSZ, so the project needs to be analyzed as near a VFHSZ. As discussed in Item 7*, Geology and Soils*, the project site is not located on an area of significant slopes. Additionally, the project site is not susceptible to landslides or downstream flooding. The project would adhere to applicable campus-wide, local, and State fire safety standards. Therefore, the project would not exacerbate wildfire or landslide risk, a less than significant impact would occur.

LESS THAN SIGNIFICANT IMPACT

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, 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?

The project would not result in significant environmental effects associated with the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. As described in Item 19, *Utilities and Service Systems*, the proposed construction and installation of pole lighting improvements would require electrical power, but not so that new power sources or lines would need to be constructed. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

21 Mandatory Findings of Significance

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

The project site is developed and does not support any sensitive habitat that would be suitable for rare, threatened, or endangered plant or animal species likely to occur in the region. Implementation of the project would not reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of rare or endangered plants or animals. Due to the limited ground disturbance, the proposed project would not be expected to significantly impact any historic resources. However, to ensure impacts would be reduced to less than significant

levels related to Cultural Resources and California history, mitigation measures have been imposed, Thus, impacts would be less than significant with mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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)?

Cumulative impacts are defined as two or more individual project effects that, when considered together or in concert with other projects, combine to result in a significant impact (CEQA Guidelines Section 15355). This project is located within the CSUSM campus, where there is a potential for future development and construction activities. In order for a project to contribute to cumulative impacts, it must result in some level of impact on a project-specific level. As concluded in Sections 1 through 20, the project would have no impact, a less than significant impact, or a less than significant impact with mitigation incorporated, with respect to all environmental issues considered in this document. With mitigation incorporated when necessary, and adherence to regulatory codes, ordinances, regulations, standards, and guidelines, the impacts related to cumulative impacts would be less than significant with mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

In general, impacts to human beings are associated with air quality, geology/soils, hazards and hazardous materials, hydrology, wildfires and water quality, and noise impacts. Impacts related to air quality, hazards/hazardous materials, and hydrology/water quality were found to be less than significant. Thus, the project would not result in environmental effects which will cause substantial adverse effects on human beings.

LESS THAN SIGNIFICANT IMPACT

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Rincon Consultants, Inc. prepared this IS-MND under contract to the City of San Marcos. Persons involved in data gathering analysis, project management, and quality control are listed below.

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Appendix A

Air Quality Calculations

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

CSUSM Field Lighting Audio Project

San Diego County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	13.50	1000sqft	0.31	13,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Size of utility construction; parking lot used as proxy for land use

Construction Phase - Modified per client construction schedule

Off-road Equipment - Modified per client's construction equipment list

Off-road Equipment - Used CalEEMod defaults because client didn't provide any construction equipment for this phase

Off-road Equipment - Modified per client's construction equipment list; off-highway truck used as proxy for mixer/asphalt trucks

Off-road Equipment - Modified per client's construction equipment list

Energy Use - Modified per lighting plan total kWhr/sf/yr

Construction Off-road Equipment Mitigation -

Waste Mitigation - Per AB 939

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	65.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	5/22/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	1/3/2024	1/30/2024
tblConstructionPhase	PhaseEndDate	5/29/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	1/1/2024	1/15/2024
tblConstructionPhase	PhaseStartDate	1/4/2024	1/31/2024
tblConstructionPhase	PhaseStartDate	1/2/2024	1/16/2024
tblConstructionPhase	PhaseStartDate	5/23/2024	3/29/2024
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Plate Compactors

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	UsageHours	7.00	8.00

2.0 Emissions Summary

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
2024	2.4087	18.4277	21.2186	0.0590	0.1696	0.7427	0.9123	0.0453	0.6833	0.7286	0.0000	5,727.6365	5,727.6365	1.8013	9.8100e-003	5,775.5949
Maximum	**2.4087**	**18.4277**	**21.2186**	**0.0590**	**0.1696**	**0.7427**	**0.9123**	**0.0453**	**0.6833**	**0.7286**	**0.0000**	**5,727.6365**	**5,727.6365**	**1.8013**	**9.8100e-003**	**5,775.5949**

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					
2024	2.4087	18.4277	21.2186	0.0590	0.1696	0.7427	0.9123	0.0453	0.6833	0.7286	0.0000	5,727.6365	5,727.6365	1.8013	9.8100e-003	5,775.5949
Maximum	**2.4087**	**18.4277**	**21.2186**	**0.0590**	**0.1696**	**0.7427**	**0.9123**	**0.0453**	**0.6833**	**0.7286**	**0.0000**	**5,727.6365**	**5,727.6365**	**1.8013**	**9.8100e-003**	**5,775.5949**

	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**

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
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	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**	**0.0000**	**3.1500e-003**

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	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
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	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**	**0.0000**	**3.1500e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	Site Preparation	Site Preparation	1/1/2024	1/15/2024	5	11	
2	Grading / Excavation	Grading	1/16/2024	1/30/2024	5	11	
3	Lighting Pole Installation / Construction	Building Construction	1/31/2024	4/30/2024	5	65	
4	Paving	Paving	3/29/2024	4/30/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.31

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
Paving	Off-Highway Trucks	3	8.00	402	0.38
Grading / Excavation	Excavators	1	8.00	158	0.38
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Plate Compactors	1	8.00	8	0.43
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Skid Steer Loaders	1	8.00	65	0.37
Grading / Excavation	Plate Compactors	1	8.00	8	0.43

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading / Excavation	Skid Steer Loaders	1	8.00	65	0.37
Lighting Pole Installation / Construction	Cranes	1	4.00	231	0.29
Lighting Pole Installation / Construction	Forklifts	2	6.00	89	0.20
Lighting Pole Installation / Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading / Excavation	Tractors/Loaders/Backhoes	1	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
Site Preparation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading / Excavation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Pole Installation / Construct	5	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589		1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**		**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0279	0.0172	0.2141	6.6000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		68.4441	68.4441	1.9300e-003	1.8500e-003	69.0431
Total	**0.0279**	**0.0172**	**0.2141**	**6.6000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**68.4441**	**68.4441**	**1.9300e-003**	**1.8500e-003**	**69.0431**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589	0.0000	1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**	**0.0000**	**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0279	0.0172	0.2141	6.6000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		68.4441	68.4441	1.9300e-003	1.8500e-003	69.0431
Total	**0.0279**	**0.0172**	**0.2141**	**6.6000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**68.4441**	**68.4441**	**1.9300e-003**	**1.8500e-003**	**69.0431**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading / Excavation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589		1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**		**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0279	0.0172	0.2141	6.6000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		68.4441	68.4441	1.9300e-003	1.8500e-003	69.0431
Total	**0.0279**	**0.0172**	**0.2141**	**6.6000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**68.4441**	**68.4441**	**1.9300e-003**	**1.8500e-003**	**69.0431**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading / Excavation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589	0.0000	1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**	**0.0000**	**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0279	0.0172	0.2141	6.6000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		68.4441	68.4441	1.9300e-003	1.8500e-003	69.0431
Total	**0.0279**	**0.0172**	**0.2141**	**6.6000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**68.4441**	**68.4441**	**1.9300e-003**	**1.8500e-003**	**69.0431**

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Lighting Pole Installation / Construction - 2024

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	0.5950	5.9739	7.0675	0.0114		0.2824	0.2824		0.2598	0.2598		1,104.9834	1,104.9834	0.3574		1,113.9177
Total	**0.5950**	**5.9739**	**7.0675**	**0.0114**		**0.2824**	**0.2824**		**0.2598**	**0.2598**		**1,104.9834**	**1,104.9834**	**0.3574**		**1,113.9177**

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	2.2300e-003	0.0887	0.0311	4.0000e-004	0.0136	5.3000e-004	0.0141	3.9000e-003	5.0000e-004	4.4000e-003		43.5021	43.5021	1.3600e-003	6.3000e-003	45.4148
Worker	0.0168	0.0103	0.1285	4.0000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		41.0665	41.0665	1.1600e-003	1.1100e-003	41.4259
Total	**0.0190**	**0.0991**	**0.1596**	**8.0000e-004**	**0.0628**	**7.8000e-004**	**0.0636**	**0.0170**	**7.3000e-004**	**0.0177**		**84.5686**	**84.5686**	**2.5200e-003**	**7.4100e-003**	**86.8406**

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Lighting Pole Installation / Construction - 2024

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	0.5950	5.9739	7.0675	0.0114		0.2824	0.2824		0.2598	0.2598	0.0000	1,104.9834	1,104.9834	0.3574		1,113.9177
Total	**0.5950**	**5.9739**	**7.0675**	**0.0114**		**0.2824**	**0.2824**		**0.2598**	**0.2598**	**0.0000**	**1,104.9834**	**1,104.9834**	**0.3574**		**1,113.9177**

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	2.2300e-003	0.0887	0.0311	4.0000e-004	0.0136	5.3000e-004	0.0141	3.9000e-003	5.0000e-004	4.4000e-003		43.5021	43.5021	1.3600e-003	6.3000e-003	45.4148
Worker	0.0168	0.0103	0.1285	4.0000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		41.0665	41.0665	1.1600e-003	1.1100e-003	41.4259
Total	**0.0190**	**0.0991**	**0.1596**	**8.0000e-004**	**0.0628**	**7.8000e-004**	**0.0636**	**0.0170**	**7.3000e-004**	**0.0177**		**84.5686**	**84.5686**	**2.5200e-003**	**7.4100e-003**	**86.8406**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	1.7231	12.3324	13.7132	0.0460		0.4590	0.4590		0.4223	0.4223		4,449.1073	4,449.1073	1.4389		4,485.0805
Paving	0.0353					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7584**	**12.3324**	**13.7132**	**0.0460**		**0.4590**	**0.4590**		**0.4223**	**0.4223**		**4,449.1073**	**4,449.1073**	**1.4389**		**4,485.0805**

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	0.0363	0.0223	0.2783	8.6000e-004	0.1068	5.5000e-004	0.1073	0.0283	5.0000e-004	0.0288		88.9773	88.9773	2.5100e-003	2.4000e-003	89.7560
Total	**0.0363**	**0.0223**	**0.2783**	**8.6000e-004**	**0.1068**	**5.5000e-004**	**0.1073**	**0.0283**	**5.0000e-004**	**0.0288**		**88.9773**	**88.9773**	**2.5100e-003**	**2.4000e-003**	**89.7560**

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	1.7231	12.3324	13.7132	0.0460		0.4590	0.4590		0.4223	0.4223	0.0000	4,449.1073	4,449.1073	1.4389		4,485.0805
Paving	0.0353					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7584**	**12.3324**	**13.7132**	**0.0460**		**0.4590**	**0.4590**		**0.4223**	**0.4223**	**0.0000**	**4,449.1073**	**4,449.1073**	**1.4389**		**4,485.0805**

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	0.0363	0.0223	0.2783	8.6000e-004	0.1068	5.5000e-004	0.1073	0.0283	5.0000e-004	0.0288		88.9773	88.9773	2.5100e-003	2.4000e-003	89.7560
Total	**0.0363**	**0.0223**	**0.2783**	**8.6000e-004**	**0.1068**	**5.5000e-004**	**0.1073**	**0.0283**	**5.0000e-004**	**0.0288**		**88.9773**	**88.9773**	**2.5100e-003**	**2.4000e-003**	**89.7560**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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
Other Asphalt Surfaces	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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949

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					
Other Asphalt Surfaces	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 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					
Other Asphalt Surfaces	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	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
Unmitigated	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003

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	2.5700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
Total	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**		**3.1500e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	2.5700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
Total	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**		**3.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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 Applied

CSUSM Field Lighting Audio Project

San Diego County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	13.50	1000sqft	0.31	13,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Size of utility construction; parking lot used as proxy for land use

Construction Phase - Modified per client construction schedule

Off-road Equipment - Modified per client's construction equipment list

Off-road Equipment - Used CalEEMod defaults because client didn't provide any construction equipment for this phase

Off-road Equipment - Modified per client's construction equipment list; off-highway truck used as proxy for mixer/asphalt trucks

Off-road Equipment - Modified per client's construction equipment list

Energy Use - Modified per lighting plan total kWhr/sf/yr

Construction Off-road Equipment Mitigation -

Waste Mitigation - Per AB 939

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	65.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	5/22/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	1/3/2024	1/30/2024
tblConstructionPhase	PhaseEndDate	5/29/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	1/1/2024	1/15/2024
tblConstructionPhase	PhaseStartDate	1/4/2024	1/31/2024
tblConstructionPhase	PhaseStartDate	1/2/2024	1/16/2024
tblConstructionPhase	PhaseStartDate	5/23/2024	3/29/2024
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Plate Compactors

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	UsageHours	7.00	8.00

2.0 Emissions Summary

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
2024	2.4045	18.4205	21.2381	0.0591	0.1696	0.7427	0.9123	0.0453	0.6833	0.7286	0.0000	5,735.1192	5,735.1192	1.8011	9.5400e-003	5,782.9890
Maximum	**2.4045**	**18.4205**	**21.2381**	**0.0591**	**0.1696**	**0.7427**	**0.9123**	**0.0453**	**0.6833**	**0.7286**	**0.0000**	**5,735.1192**	**5,735.1192**	**1.8011**	**9.5400e-003**	**5,782.9890**

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					
2024	2.4045	18.4205	21.2381	0.0591	0.1696	0.7427	0.9123	0.0453	0.6833	0.7286	0.0000	5,735.1192	5,735.1192	1.8011	9.5400e-003	5,782.9890
Maximum	**2.4045**	**18.4205**	**21.2381**	**0.0591**	**0.1696**	**0.7427**	**0.9123**	**0.0453**	**0.6833**	**0.7286**	**0.0000**	**5,735.1192**	**5,735.1192**	**1.8011**	**9.5400e-003**	**5,782.9890**

	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**

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
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	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**	**0.0000**	**3.1500e-003**

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	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
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	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**	**0.0000**	**3.1500e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	Site Preparation	Site Preparation	1/1/2024	1/15/2024	5	11	
2	Grading / Excavation	Grading	1/16/2024	1/30/2024	5	11	
3	Lighting Pole Installation / Construction	Building Construction	1/31/2024	4/30/2024	5	65	
4	Paving	Paving	3/29/2024	4/30/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.31

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
Paving	Off-Highway Trucks	3	8.00	402	0.38
Grading / Excavation	Excavators	1	8.00	158	0.38
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Plate Compactors	1	8.00	8	0.43
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Skid Steer Loaders	1	8.00	65	0.37
Grading / Excavation	Plate Compactors	1	8.00	8	0.43

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading / Excavation	Skid Steer Loaders	1	8.00	65	0.37
Lighting Pole Installation / Construction	Cranes	1	4.00	231	0.29
Lighting Pole Installation / Construction	Forklifts	2	6.00	89	0.20
Lighting Pole Installation / Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading / Excavation	Tractors/Loaders/Backhoes	1	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
Site Preparation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading / Excavation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Pole Installation / Construct	5	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589		1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**		**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0257	0.0153	0.2249	7.0000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		72.4158	72.4158	1.8100e-003	1.7100e-003	72.9704
Total	**0.0257**	**0.0153**	**0.2249**	**7.0000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**72.4158**	**72.4158**	**1.8100e-003**	**1.7100e-003**	**72.9704**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589	0.0000	1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**	**0.0000**	**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0257	0.0153	0.2249	7.0000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		72.4158	72.4158	1.8100e-003	1.7100e-003	72.9704
Total	**0.0257**	**0.0153**	**0.2249**	**7.0000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**72.4158**	**72.4158**	**1.8100e-003**	**1.7100e-003**	**72.9704**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading / Excavation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589		1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**		**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0257	0.0153	0.2249	7.0000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		72.4158	72.4158	1.8100e-003	1.7100e-003	72.9704
Total	**0.0257**	**0.0153**	**0.2249**	**7.0000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**72.4158**	**72.4158**	**1.8100e-003**	**1.7100e-003**	**72.9704**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading / Excavation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4267	3.9267	7.0973	0.0109		0.1719	0.1719		0.1589	0.1589	0.0000	1,037.5436	1,037.5436	0.3280		1,045.7434
Total	**0.4267**	**3.9267**	**7.0973**	**0.0109**	**0.0000**	**0.1719**	**0.1719**	**0.0000**	**0.1589**	**0.1589**	**0.0000**	**1,037.5436**	**1,037.5436**	**0.3280**		**1,045.7434**

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	0.0257	0.0153	0.2249	7.0000e-004	0.0822	4.2000e-004	0.0826	0.0218	3.9000e-004	0.0222		72.4158	72.4158	1.8100e-003	1.7100e-003	72.9704
Total	**0.0257**	**0.0153**	**0.2249**	**7.0000e-004**	**0.0822**	**4.2000e-004**	**0.0826**	**0.0218**	**3.9000e-004**	**0.0222**		**72.4158**	**72.4158**	**1.8100e-003**	**1.7100e-003**	**72.9704**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Lighting Pole Installation / Construction - 2024

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	0.5950	5.9739	7.0675	0.0114		0.2824	0.2824		0.2598	0.2598		1,104.9834	1,104.9834	0.3574		1,113.9177
Total	**0.5950**	**5.9739**	**7.0675**	**0.0114**		**0.2824**	**0.2824**		**0.2598**	**0.2598**		**1,104.9834**	**1,104.9834**	**0.3574**		**1,113.9177**

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	2.3000e-003	0.0852	0.0302	4.0000e-004	0.0136	5.2000e-004	0.0141	3.9000e-003	5.0000e-004	4.4000e-003		43.4386	43.4386	1.3700e-003	6.2900e-003	45.3471
Worker	0.0154	9.1700e-003	0.1349	4.2000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		43.4495	43.4495	1.0900e-003	1.0300e-003	43.7822
Total	**0.0177**	**0.0943**	**0.1651**	**8.2000e-004**	**0.0628**	**7.7000e-004**	**0.0636**	**0.0170**	**7.3000e-004**	**0.0177**		**86.8881**	**86.8881**	**2.4600e-003**	**7.3200e-003**	**89.1293**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Lighting Pole Installation / Construction - 2024

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	0.5950	5.9739	7.0675	0.0114		0.2824	0.2824		0.2598	0.2598	0.0000	1,104.9834	1,104.9834	0.3574		1,113.9177
Total	**0.5950**	**5.9739**	**7.0675**	**0.0114**		**0.2824**	**0.2824**		**0.2598**	**0.2598**	**0.0000**	**1,104.9834**	**1,104.9834**	**0.3574**		**1,113.9177**

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	2.3000e-003	0.0852	0.0302	4.0000e-004	0.0136	5.2000e-004	0.0141	3.9000e-003	5.0000e-004	4.4000e-003		43.4386	43.4386	1.3700e-003	6.2900e-003	45.3471
Worker	0.0154	9.1700e-003	0.1349	4.2000e-004	0.0493	2.5000e-004	0.0495	0.0131	2.3000e-004	0.0133		43.4495	43.4495	1.0900e-003	1.0300e-003	43.7822
Total	**0.0177**	**0.0943**	**0.1651**	**8.2000e-004**	**0.0628**	**7.7000e-004**	**0.0636**	**0.0170**	**7.3000e-004**	**0.0177**		**86.8881**	**86.8881**	**2.4600e-003**	**7.3200e-003**	**89.1293**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	1.7231	12.3324	13.7132	0.0460		0.4590	0.4590		0.4223	0.4223		4,449.1073	4,449.1073	1.4389		4,485.0805
Paving	0.0353					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7584**	**12.3324**	**13.7132**	**0.0460**		**0.4590**	**0.4590**		**0.4223**	**0.4223**		**4,449.1073**	**4,449.1073**	**1.4389**		**4,485.0805**

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	0.0334	0.0199	0.2923	9.1000e-004	0.1068	5.5000e-004	0.1073	0.0283	5.0000e-004	0.0288		94.1405	94.1405	2.3500e-003	2.2200e-003	94.8615
Total	**0.0334**	**0.0199**	**0.2923**	**9.1000e-004**	**0.1068**	**5.5000e-004**	**0.1073**	**0.0283**	**5.0000e-004**	**0.0288**		**94.1405**	**94.1405**	**2.3500e-003**	**2.2200e-003**	**94.8615**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	1.7231	12.3324	13.7132	0.0460		0.4590	0.4590		0.4223	0.4223	0.0000	4,449.1073	4,449.1073	1.4389		4,485.0805
Paving	0.0353					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7584**	**12.3324**	**13.7132**	**0.0460**		**0.4590**	**0.4590**		**0.4223**	**0.4223**	**0.0000**	**4,449.1073**	**4,449.1073**	**1.4389**		**4,485.0805**

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	0.0334	0.0199	0.2923	9.1000e-004	0.1068	5.5000e-004	0.1073	0.0283	5.0000e-004	0.0288		94.1405	94.1405	2.3500e-003	2.2200e-003	94.8615
Total	**0.0334**	**0.0199**	**0.2923**	**9.1000e-004**	**0.1068**	**5.5000e-004**	**0.1073**	**0.0283**	**5.0000e-004**	**0.0288**		**94.1405**	**94.1405**	**2.3500e-003**	**2.2200e-003**	**94.8615**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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
Other Asphalt Surfaces	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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949

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					
Other Asphalt Surfaces	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 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					
Other Asphalt Surfaces	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	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
Unmitigated	7.4800e-003	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	2.5700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
Total	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**		**3.1500e-003**

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	2.5700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.7800e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3000e-004	1.0000e-005	1.3800e-003	0.0000		0.0000	0.0000		0.0000	0.0000		2.9500e-003	2.9500e-003	1.0000e-005		3.1500e-003
Total	**7.4800e-003**	**1.0000e-005**	**1.3800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.9500e-003**	**2.9500e-003**	**1.0000e-005**		**3.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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 Applied

CSUSM Field Lighting Audio Project

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	13.50	1000sqft	0.31	13,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2024
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	539.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Size of utility construction; parking lot used as proxy for land use

Construction Phase - Modified per client construction schedule

Off-road Equipment - Modified per client's construction equipment list

Off-road Equipment - Used CalEEMod defaults because client didn't provide any construction equipment for this phase

Off-road Equipment - Modified per client's construction equipment list; off-highway truck used as proxy for mixer/asphalt trucks

Off-road Equipment - Modified per client's construction equipment list

Energy Use - Modified per lighting plan total kWhr/sf/yr

Construction Off-road Equipment Mitigation -

Waste Mitigation - Per AB 939

CSUSM Field Lighting Audio Project - San Diego County APCD Air District, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	65.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	23.00
tblConstructionPhase	NumDays	1.00	11.00
tblConstructionPhase	PhaseEndDate	5/22/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	1/3/2024	1/30/2024
tblConstructionPhase	PhaseEndDate	5/29/2024	4/30/2024
tblConstructionPhase	PhaseEndDate	1/1/2024	1/15/2024
tblConstructionPhase	PhaseStartDate	1/4/2024	1/31/2024
tblConstructionPhase	PhaseStartDate	1/2/2024	1/16/2024
tblConstructionPhase	PhaseStartDate	5/23/2024	3/29/2024
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Plate Compactors

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	UsageHours	7.00	8.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
2024	0.0455	0.3828	0.4762	1.0600e-003	4.0800e-003	0.0164	0.0205	1.0900e-003	0.0151	0.0162	0.0000	93.4768	93.4768	0.0289	2.6000e-004	94.2781
Maximum	**0.0455**	**0.3828**	**0.4762**	**1.0600e-003**	**4.0800e-003**	**0.0164**	**0.0205**	**1.0900e-003**	**0.0151**	**0.0162**	**0.0000**	**93.4768**	**93.4768**	**0.0289**	**2.6000e-004**	**94.2781**

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					
2024	0.0455	0.3828	0.4762	1.0600e-003	4.0800e-003	0.0164	0.0205	1.0900e-003	0.0151	0.0162	0.0000	93.4767	93.4767	0.0289	2.6000e-004	94.2780
Maximum	**0.0455**	**0.3828**	**0.4762**	**1.0600e-003**	**4.0800e-003**	**0.0164**	**0.0205**	**1.0900e-003**	**0.0151**	**0.0162**	**0.0000**	**93.4767**	**93.4767**	**0.0289**	**2.6000e-004**	**94.2780**

	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**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2024**	**3-31-2024**	0.2080	0.2080
2	**4-1-2024**	**6-30-2024**	0.2231	0.2231
		Highest	0.2231	0.2231

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	1.3500e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.6000e-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	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	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	**1.3500e-003**	**0.0000**	**1.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.6000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	1.3500e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.6000e-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	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	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	**1.3500e-003**	**0.0000**	**1.2000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.6000e-004**

	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	Site Preparation	Site Preparation	1/1/2024	1/15/2024	5	11	
2	Grading / Excavation	Grading	1/16/2024	1/30/2024	5	11	
3	Lighting Pole Installation / Construction	Building Construction	1/31/2024	4/30/2024	5	65	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	3/29/2024	4/30/2024	5	23	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.31

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
Paving	Off-Highway Trucks	3	8.00	402	0.38
Grading / Excavation	Excavators	1	8.00	158	0.38
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Plate Compactors	1	8.00	8	0.43
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Skid Steer Loaders	1	8.00	65	0.37
Grading / Excavation	Plate Compactors	1	8.00	8	0.43
Grading / Excavation	Skid Steer Loaders	1	8.00	65	0.37
Lighting Pole Installation / Construction	Cranes	1	4.00	231	0.29
Lighting Pole Installation / Construction	Forklifts	2	6.00	89	0.20
Lighting Pole Installation / Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading / Excavation	Tractors/Loaders/Backhoes	1	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
Site Preparation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading / Excavation	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Lighting Pole Installation / Construct	5	6.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3500e-003	0.0216	0.0390	6.0000e-005		9.5000e-004	9.5000e-004		8.7000e-004	8.7000e-004	0.0000	5.1768	5.1768	1.6400e-003	0.0000	5.2178
Total	**2.3500e-003**	**0.0216**	**0.0390**	**6.0000e-005**	**0.0000**	**9.5000e-004**	**9.5000e-004**	**0.0000**	**8.7000e-004**	**8.7000e-004**	**0.0000**	**5.1768**	**5.1768**	**1.6400e-003**	**0.0000**	**5.2178**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

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	1.4000e-004	9.0000e-005	1.1800e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3445	0.3445	1.0000e-005	1.0000e-005	0.3475
Total	**1.4000e-004**	**9.0000e-005**	**1.1800e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3445**	**0.3445**	**1.0000e-005**	**1.0000e-005**	**0.3475**

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3500e-003	0.0216	0.0390	6.0000e-005		9.5000e-004	9.5000e-004		8.7000e-004	8.7000e-004	0.0000	5.1768	5.1768	1.6400e-003	0.0000	5.2178
Total	**2.3500e-003**	**0.0216**	**0.0390**	**6.0000e-005**	**0.0000**	**9.5000e-004**	**9.5000e-004**	**0.0000**	**8.7000e-004**	**8.7000e-004**	**0.0000**	**5.1768**	**5.1768**	**1.6400e-003**	**0.0000**	**5.2178**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2024

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	1.4000e-004	9.0000e-005	1.1800e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3445	0.3445	1.0000e-005	1.0000e-005	0.3475
Total	**1.4000e-004**	**9.0000e-005**	**1.1800e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3445**	**0.3445**	**1.0000e-005**	**1.0000e-005**	**0.3475**

3.3 Grading / Excavation - 2024

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3500e-003	0.0216	0.0390	6.0000e-005		9.5000e-004	9.5000e-004		8.7000e-004	8.7000e-004	0.0000	5.1768	5.1768	1.6400e-003	0.0000	5.2178
Total	**2.3500e-003**	**0.0216**	**0.0390**	**6.0000e-005**	**0.0000**	**9.5000e-004**	**9.5000e-004**	**0.0000**	**8.7000e-004**	**8.7000e-004**	**0.0000**	**5.1768**	**5.1768**	**1.6400e-003**	**0.0000**	**5.2178**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading / Excavation - 2024

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	1.4000e-004	9.0000e-005	1.1800e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3445	0.3445	1.0000e-005	1.0000e-005	0.3475
Total	**1.4000e-004**	**9.0000e-005**	**1.1800e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3445**	**0.3445**	**1.0000e-005**	**1.0000e-005**	**0.3475**

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					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3500e-003	0.0216	0.0390	6.0000e-005		9.5000e-004	9.5000e-004		8.7000e-004	8.7000e-004	0.0000	5.1768	5.1768	1.6400e-003	0.0000	5.2178
Total	**2.3500e-003**	**0.0216**	**0.0390**	**6.0000e-005**	**0.0000**	**9.5000e-004**	**9.5000e-004**	**0.0000**	**8.7000e-004**	**8.7000e-004**	**0.0000**	**5.1768**	**5.1768**	**1.6400e-003**	**0.0000**	**5.2178**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading / Excavation - 2024

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	1.4000e-004	9.0000e-005	1.1800e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3445	0.3445	1.0000e-005	1.0000e-005	0.3475
Total	**1.4000e-004**	**9.0000e-005**	**1.1800e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3445**	**0.3445**	**1.0000e-005**	**1.0000e-005**	**0.3475**

3.4 Lighting Pole Installation / Construction - 2024

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	0.0193	0.1942	0.2297	3.7000e-004		9.1800e-003	9.1800e-003		8.4400e-003	8.4400e-003	0.0000	32.5788	32.5788	0.0105	0.0000	32.8422
Total	**0.0193**	**0.1942**	**0.2297**	**3.7000e-004**		**9.1800e-003**	**9.1800e-003**		**8.4400e-003**	**8.4400e-003**	**0.0000**	**32.5788**	**32.5788**	**0.0105**	**0.0000**	**32.8422**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Lighting Pole Installation / Construction - 2024

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	2.8700e-003	9.9000e-004	1.0000e-005	4.3000e-004	2.0000e-005	4.5000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.2815	1.2815	4.0000e-005	1.9000e-004	1.3379
Worker	5.0000e-004	3.3000e-004	4.1700e-003	1.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.2215	1.2215	3.0000e-005	3.0000e-005	1.2319
Total	**5.7000e-004**	**3.2000e-003**	**5.1600e-003**	**2.0000e-005**	**1.9900e-003**	**3.0000e-005**	**2.0200e-003**	**5.4000e-004**	**3.0000e-005**	**5.6000e-004**	**0.0000**	**2.5030**	**2.5030**	**7.0000e-005**	**2.2000e-004**	**2.5698**

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	0.0193	0.1942	0.2297	3.7000e-004		9.1800e-003	9.1800e-003		8.4400e-003	8.4400e-003	0.0000	32.5787	32.5787	0.0105	0.0000	32.8422
Total	**0.0193**	**0.1942**	**0.2297**	**3.7000e-004**		**9.1800e-003**	**9.1800e-003**		**8.4400e-003**	**8.4400e-003**	**0.0000**	**32.5787**	**32.5787**	**0.0105**	**0.0000**	**32.8422**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Lighting Pole Installation / Construction - 2024

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	2.8700e-003	9.9000e-004	1.0000e-005	4.3000e-004	2.0000e-005	4.5000e-004	1.2000e-004	2.0000e-005	1.4000e-004	0.0000	1.2815	1.2815	4.0000e-005	1.9000e-004	1.3379
Worker	5.0000e-004	3.3000e-004	4.1700e-003	1.0000e-005	1.5600e-003	1.0000e-005	1.5700e-003	4.2000e-004	1.0000e-005	4.2000e-004	0.0000	1.2215	1.2215	3.0000e-005	3.0000e-005	1.2319
Total	**5.7000e-004**	**3.2000e-003**	**5.1600e-003**	**2.0000e-005**	**1.9900e-003**	**3.0000e-005**	**2.0200e-003**	**5.4000e-004**	**3.0000e-005**	**5.6000e-004**	**0.0000**	**2.5030**	**2.5030**	**7.0000e-005**	**2.2000e-004**	**2.5698**

3.5 Paving - 2024

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	0.0198	0.1418	0.1577	5.3000e-004		5.2800e-003	5.2800e-003		4.8600e-003	4.8600e-003	0.0000	46.4159	46.4159	0.0150	0.0000	46.7912
Paving	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**0.1418**	**0.1577**	**5.3000e-004**		**5.2800e-003**	**5.2800e-003**		**4.8600e-003**	**4.8600e-003**	**0.0000**	**46.4159**	**46.4159**	**0.0150**	**0.0000**	**46.7912**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.8000e-004	2.5000e-004	3.2000e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9365	0.9365	3.0000e-005	2.0000e-005	0.9445
Total	**3.8000e-004**	**2.5000e-004**	**3.2000e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9365**	**0.9365**	**3.0000e-005**	**2.0000e-005**	**0.9445**

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	0.0198	0.1418	0.1577	5.3000e-004		5.2800e-003	5.2800e-003		4.8600e-003	4.8600e-003	0.0000	46.4158	46.4158	0.0150	0.0000	46.7911
Paving	4.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0202**	**0.1418**	**0.1577**	**5.3000e-004**		**5.2800e-003**	**5.2800e-003**		**4.8600e-003**	**4.8600e-003**	**0.0000**	**46.4158**	**46.4158**	**0.0150**	**0.0000**	**46.7911**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.8000e-004	2.5000e-004	3.2000e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	0.9365	0.9365	3.0000e-005	2.0000e-005	0.9445
Total	**3.8000e-004**	**2.5000e-004**	**3.2000e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**0.9365**	**0.9365**	**3.0000e-005**	**2.0000e-005**	**0.9445**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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
Other Asphalt Surfaces	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
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.557888	0.062607	0.178921	0.119061	0.024112	0.006269	0.008734	0.006266	0.000708	0.000566	0.028949	0.000971	0.004949

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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					
Other Asphalt Surfaces	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					
Other Asphalt Surfaces	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 Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	1.3500e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.6000e-004
Unmitigated	1.3500e-003	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.6000e-004

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	4.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.6000e-004
Total	**1.3500e-003**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.6000e-004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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	4.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.7000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.2000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.4000e-004	2.4000e-004	0.0000	0.0000	2.6000e-004
Total	**1.3500e-003**	**0.0000**	**1.2000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.0000**	**2.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule 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			
Other Asphalt Surfaces	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 Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	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

Institute Recycling and Composting Services

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	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			
Other Asphalt Surfaces	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 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

Appendix B

Cultural Resources Technical Report

Twin Oaks Valley Road Athletic Fields Lighting Project

Cultural Resources Technical Report

prepared for

California State University, San Marcos
Office of Planning, Design and Construction
441 La Moree Road
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September 2023

RINCON CONSULTANTS, INC.
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Confidentiality

The following document contains sensitive and confidential information concerning archaeological sites. This report should be held confidential and is not for public distribution. Archaeological site locations are exempt from the California Public Records Act, as specified in Government Code 6254.10, and from the Freedom of Information Act (Exemption 3), under the legal authority of both the National Historic Preservation Act (PL 102-574, Section 304[a]) and the Archaeological Resources Protection Act (PL 96-95, Section 9[a]). Sections of this report contain maps and other sensitive information. Distribution should be restricted appropriately.

Please cite this report as follows:

Felt, Cameron and Debbie Balam

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Appendix A SCIC RSID No. RSID-3189 from the South Coastal Information Center
Appendix B Sacred Lands File Search Request and Results

Executive Summary

California State University, San Marcos (CSUSM) retained Rincon Consultants, Inc., to conduct a cultural resources assessment in support of the Initial Study-Mitigated Negative Declaration (IS-MND) for the Twin Oaks Valley Road Athletic Fields Lighting & Audio Systems Project (project), in San Marcos, San Diego County, California. The project site, totaling 3.64 acres, consists of two existing baseball/softball fields and an existing soccer field. The project involves the construction of pole lighting and audio system improvements. This study has been completed pursuant to the requirements of the California Environmental Quality Act (CEQA) and the Trustees of The California State University are the lead agency under CEQA.

This assessment included a cultural resources records search of the California Historical Resources Information System, a Sacred Lands File search, a pedestrian field survey of the project site, and the preparation of this report to summarize the results of these activities.

The records search and archaeological pedestrian survey identified no archaeological resources within the project site. The California Historical Resources Information System records search did not identify any archaeological resources within a 0.25-mile radius. The Sacred Lands File search results were positive, indicating that a sacred land is recorded within the Public Lands Survey System section that encompasses the current project site. In government-to-government consultation, the Rincon Band of Luiseño Indians identified the proposed project site to be located within a potential Traditional Cultural Property.

The absence of prehistoric or historic-period archaeological remains within the immediate vicinity (within 0.25 miles of the project site), along with the level of historic disturbance of the project site, indicate there is a low potential for encountering intact subsurface archaeological deposits. However, an analysis of soils within the project site indicates that buried archaeological deposits may be present. Therefore, the archaeological sensitivity of the project site is considered moderate and impacts on archaeological resources are therefore potentially significant. No built environment resources are located within the project site. To address the potential for unanticipated discoveries of archaeological resources, two mitigation measures are required: the retention of a qualified archaeologist, and protocols for the unanticipated discovery of cultural resources. With adherence to existing regulations, impacts on cultural resources would be less than significant.

1 Introduction

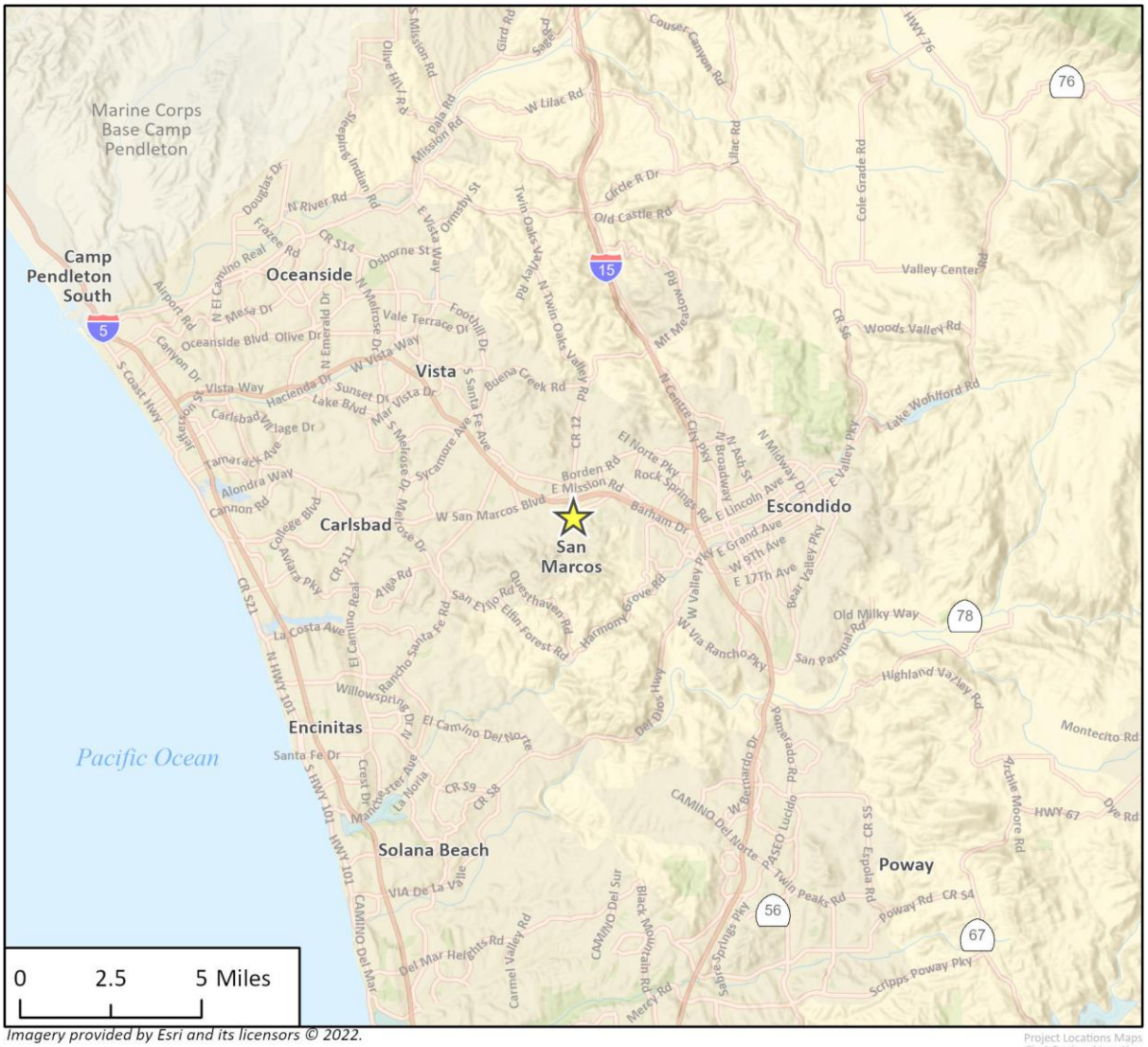
California State University, San Marcos retained Rincon, to conduct a cultural resources assessment for the Twin Oaks Valley Road Athletic Fields Lighting & Audio Systems Project (project), in San Marcos, San Diego County, California. This technical report documents the results of the study and tasks conducted by Rincon, including a cultural resources records search, background and archival research, historical map and aerial imagery review, Sacred Lands File (SLF) search, and field survey. This study has been completed pursuant to the requirements of the California Environmental Quality Act (CEQA) and other applicable laws.

1.1 Project Site and Description

The project site is located in the northwest corner of the California State University, San Marcos (CSUSM) Mangrum Track, located north of Campus View Drive, west of Campus Way, and northwest of Chavez Circle (Figure 1). More broadly, the project encompasses portions of Sections 11, 13-14, and 23 of Township 120 South, Range 030 West on the *San Marcos and Rancho Santa Fe*, *California,* United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 2).

The project involves the construction of pole-mounted lighting and audio system improvements for two existing baseball/softball fields and an existing soccer field adjacent to Twin Oaks Valley Road and E. Barham Drive (**Error! Reference source not found.**). The project will require trenching for new power and irrigation lines, grading for a service pad area, and removal of existing power lines. The project would include 1) installation of a total of 18 pole-mounted lighting fixtures distributed along the perimeters of the three sports fields, and 2) installation of two control and monitoring cabinets at the two baseball/softball fields. Proposed pole-mounted lighting heights include two poles of 60 feet in height above adjacent grade, four poles of 70 feet in height, eight poles of 80 feet in height, two poles at 90 feet in height, and two poles of 100 feet in height. Ground-disturbance would be contained within the fenceline of the multipurpose field. The proposed project will include minor trenching for utility lines to and from the light poles.

Figure 1 Regional Location



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Project Locations Maps
Fig 1 Regional Location

Project Location

N

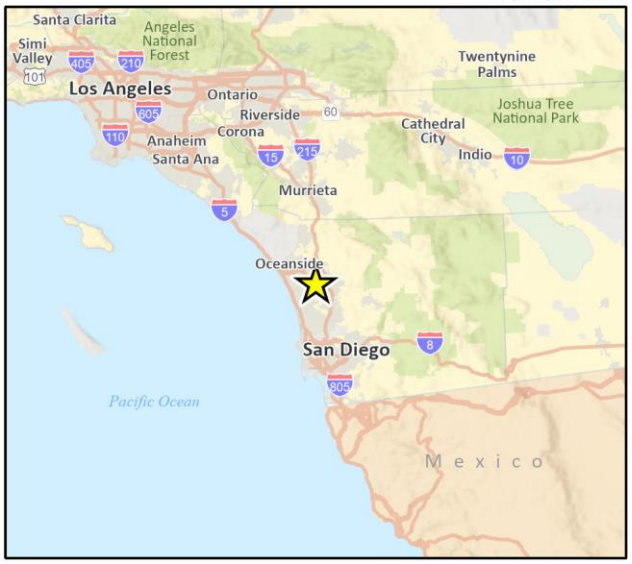
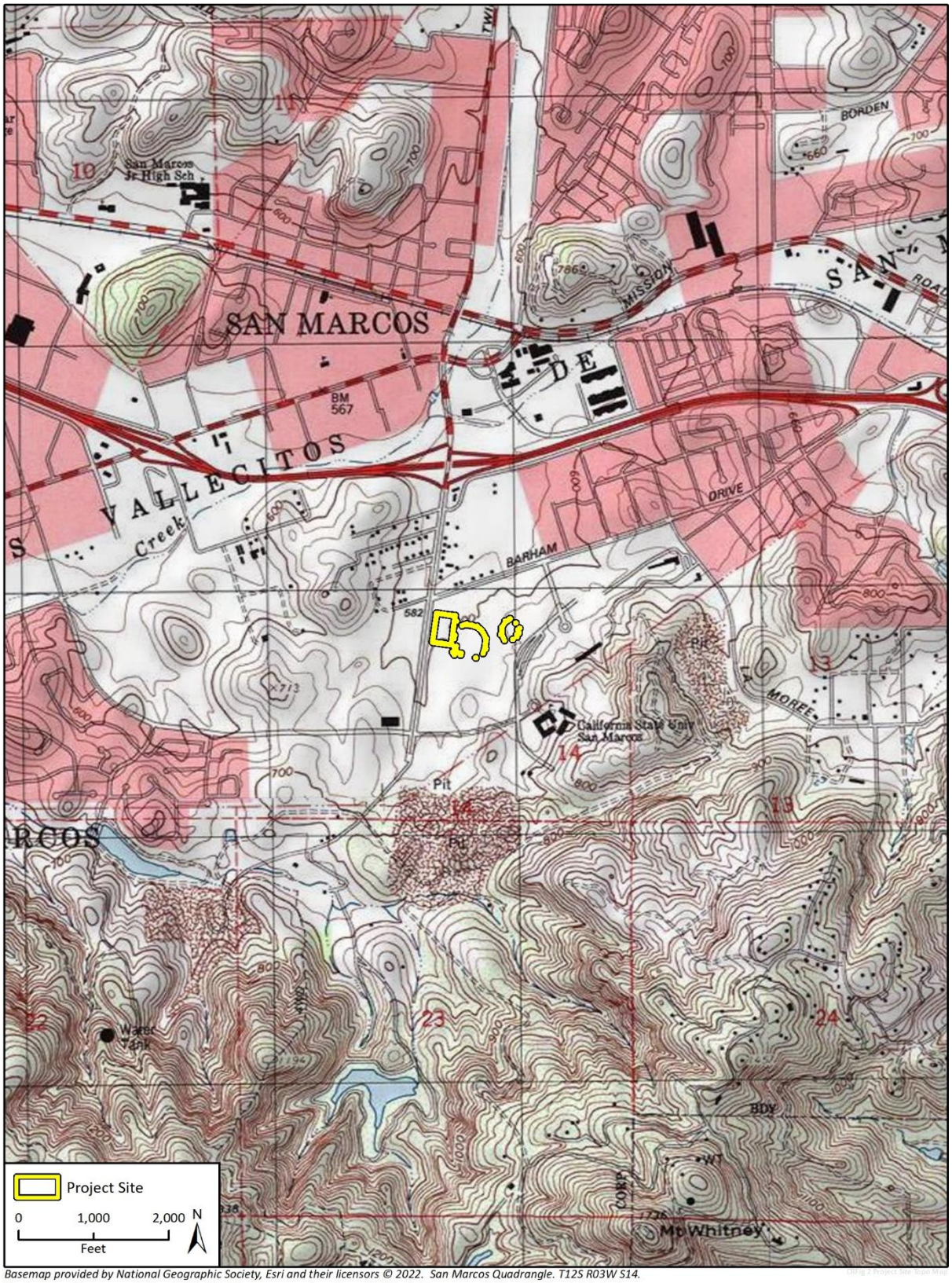
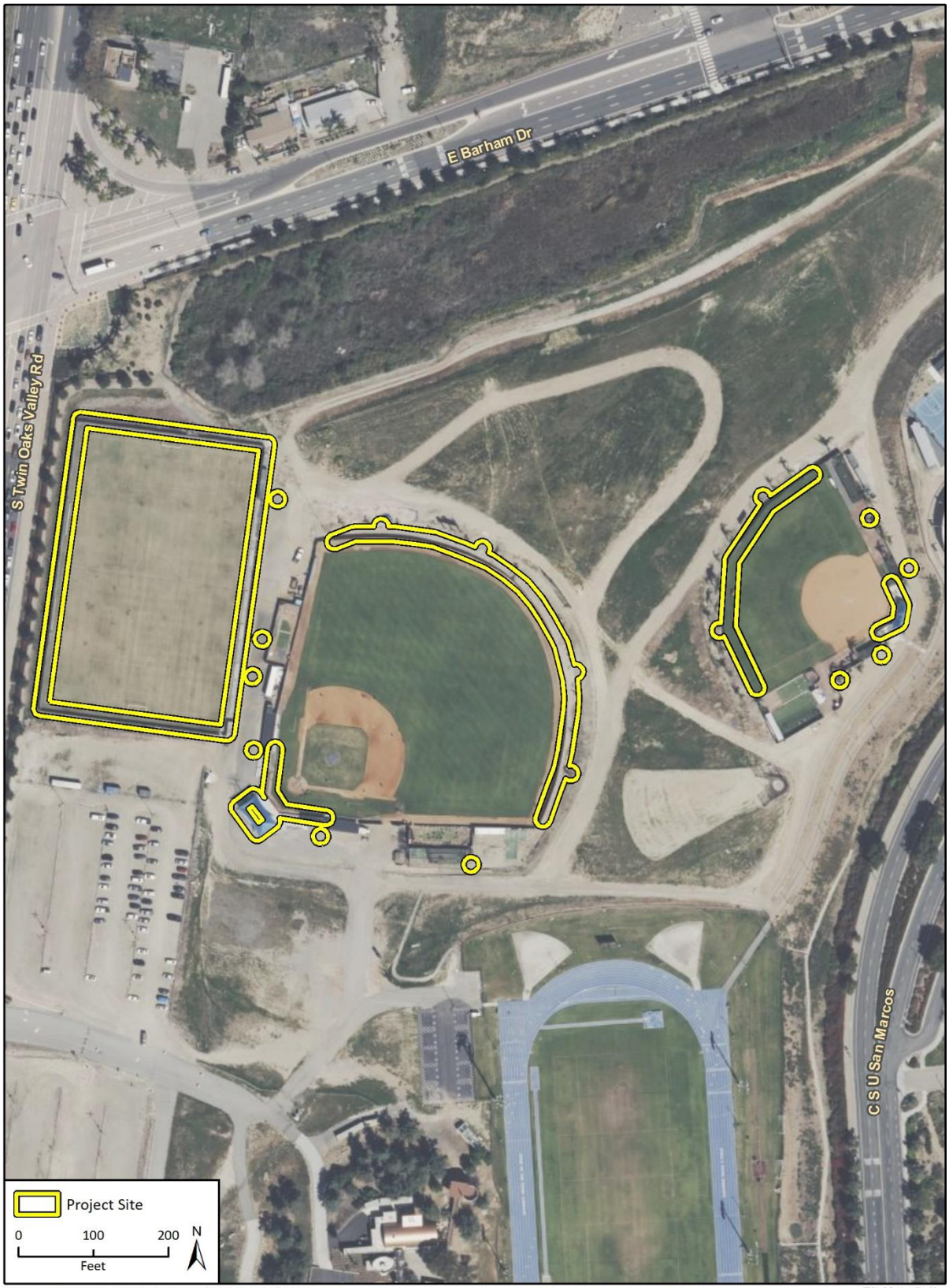


Figure 2 Project Site



Basemap provided by National Geographic Society, Esri and their licensors © 2022. San Marcos Quadrangle. T12S R03W S14.
The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Figure 3 Project Site, Aerial Overview



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Photograph 1 Project Site, Overview of Smaller Athletic Field. View to the Northeast

Photograph 2 Project Site, Landscaping on Northwest Corner of Soccer Field. View to the Northeast

Photograph 3 Project Site, Area Covered in Gravel Between Fields, View to the North

Photograph 4 Project Site, Exposed Soil at Northeast Corner of Baseball Diamond. View to the Northwest

Photograph 5 Project Site, West Side of Soccer Field, View to North

Photograph 6 Project Site, Facing Softball Diamond from Northwest Corner of Baseball Diamond, View to the East

Photograph 7 Project Site, Interior Fencing on Multi-Purpose Field Where Ground Disturbance is Planned, View to the East

Photograph 8 Project Site, Interior of Multi-Purpose Field Where Ground Disturbance is Planned, View to the East

2 Regulatory Setting

This section includes a discussion of the applicable state and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during implementation of the project.

2.1 CEQA

California Public Resources Code (PRC) Section 21804.1 requires lead agencies to determine if a project could have a significant impact on historical or unique archaeological resources. As defined in the PRC Section 21084.1, a historical resource is a resource listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources or identified in a historical resources survey pursuant to PRC Section 5024.1(g), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant. PRC Section 21084.1 also states resources meeting the above criteria are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates otherwise. Resources listed in the National Register of Historic Places (NRHP) are automatically listed in the CRHR and are, therefore, historical resources under CEQA. Historical resources may include eligible built environment resources and archaeological resources of the precontact or historic periods.

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2. PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: 1) it 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, or 3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological resource does not qualify as a historical or unique archaeological resource, the impacts of a project on those resources will be less than significant and need not be considered further (*CEQA Guidelines* Section 15064.5[c][4]). *CEQA Guidelines* Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during the implementation of a project.

Per CEQA, an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (*CEQA Guidelines* Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (*CEQA Guidelines* Section 15064.5[b][2][A]).

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 resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a][b]).

Section 15126.4 of the *CEQA Guidelines* stipulates an environmental impact report shall describe feasible measures to minimize significant adverse impacts. In addition to being fully enforceable, mitigation measures must be completed within a defined time period and roughly proportional to the impacts of the project. Generally, a project which is found to comply with the Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (the Standards) is considered to be mitigated below a level of significance (*CEQA Guidelines* Section 15126.4 [b][1]). For historical resources of an archaeological nature, lead agencies should also seek to avoid damaging effects where feasible. Preservation in place is the preferred manner to mitigate impacts to archaeological sites; however, data recovery through excavation may be the only option in certain instances (*CEQA Guidelines* Section 15126.4[b][3]).

2.2 National Register of Historic Places (NRHP)

Although the project does not have a federal nexus, properties which are listed in or have been formally determined eligible for listing in the NRHP are automatically listed in the CRHR. The following is therefore presented to provide applicable regulatory context. The NRHP was authorized by Section 101 of the National Historic Preservation Act and is the nation's official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects. Per 36 Code of Federal Regulations (CFR) Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Is associated with the lives of persons significant in our past

Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The National Park Service (NPS) recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several of these seven qualities, if not all, defined as follows:

Location: The place where the historic property was constructed or the place where the historic event occurred

Design: The combination of elements that create the form, plan, space, structure, and style of a property

Setting: The physical environment of a historic property

Materials: The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property

Workmanship: The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory

Feeling: A property's expression of the aesthetic or historic sense of a particular period of time

Association: The direct link between an important historic event or person and a historic property

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The NPS states that 50 years is the general estimate of time needed to develop the necessary historical perspective to evaluate significance (NPS 1997: 41). Properties which are less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

California Register of Historic Resources (CRHR)The CRHR was established in 1992 and codified by PRC Sections 5024.1 and 4852. The CRHR is an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (PRC 5024.1(a)). The criteria for eligibility for the CRHR are consistent with the NRHP criteria but have been modified for state use in order to include a range of historical resources that better reflect the history of California (PRC 5024.1(b)). Unlike the NRHP however, the CRHR does not have a defined age threshold for eligibility; rather, a resource may be eligible for the CRHR if it can be demonstrated sufficient time has passed to understand its historical or architectural significance (California Office of Historic Preservation [OHP] 2006). Furthermore, resources may still be eligible for listing in the CRHR even if they do not retain sufficient integrity for NRHP eligibility (OHP 2006). Generally, the OHP recommends resources over 45 years of age be recorded and evaluated for historical resources eligibility (OHP 1995: 2).

A property is eligible for listing in the CRHR if it meets one or more of the following criteria:

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

Criterion 2: Is associated with the lives of persons important to our past

Criterion 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

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history

2.3 California Assembly Bill 52 of 2014

As of July 1, 2015, Assembly Bill (AB) 52 was enacted and expands CEQA by defining a new resource category: "tribal cultural resources." AB 52 establishes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the CEQA lead

agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and that meets at least one of the following criteria, as summarized in *CEQA Guidelines* Appendix G:

1) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process with California Native American tribes that must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." California Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

2.4 California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Coroner of the county in which the remains are discovered has determined if the remains are subject to the Coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification.

2.5 California PRC Section 5097.98

Section 5097.98 of the California PRC states that the NAHC, upon notification of the discovery of Native American human remains, pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant [MLD]) that it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

3 Natural and Cultural Setting

This section provides background information pertaining to the natural and cultural context of the project site. It places the project site within the broader natural environment which has sustained populations throughout history. This section also provides an overview of regional indigenous history, local ethnography, and post-contact history. This background information describes the distribution and type of cultural resources documented within the vicinity of the project site to inform the cultural resources sensitivity assessment and the context within which resources have been evaluated.

3.1 Natural Setting

The project site is in San Marcos in the northern part of San Diego County, approximately 11 miles east of the Pacific Ocean and in the Carlsbad watershed. The nearest water sources to the project site includes San Marcos Creek approximately 0.4-mi north, though historical topographic maps indicate that intermittent watercourses were located adjacent to the project site. The project site lies at an approximate elevation of 617 feet above mean sea level. None of the surrounding area retains its natural setting, with the project site characterized by sports fields. Vegetation within the site consists of non-native plants and shrubs.

According to published geologic mapping, the project site is underlain by Quaternary age, alluvial deposits intermixed with clay, silt, sand, and gravel, mostly derived as overbank deposits from San Marcos Creek, which flows along the eastern edge of the project site. More specifically, one surficial geologic unit comprises the site: (Qya) “young alluvial valley deposits consisting of unconsolidated to slightly consolidated, undissected to slightly dissected clay, silt, sand, and gravel along stream valleys and alluvial flats of larger rivers” (Bedrossian et al. 2012).

Two soils series have been documented within the project site, including the Huerhuero Series and the Placentia Series (Bowman 1973). Approximately 90 percent of soils within the project site are Placentia sandy loam, which generally lay on alluvial fans and terraces and consist of alluvium derived from granitoid. A typical profile of Placentia Series soils features sandy loam from 0 to 13 inches, sandy clay from 13 to 34 inches, and sandy clay loam from 34 to 63 inches (USDA 2020). Huerhuero loam comprises approximately 10 percent of the soils within the project site. These soils generally lay on marine terraces and consist of calcareous alluvium derived from sedimentary rock (United States Department of Agriculture [USDA] 2020). A typical profile of Huerhuero Series soils features loam from 0 to 12 inches, stratified sand to sandy loam from 12 to 55 inches, and clay loam to clay from 55 to 72 inches (USDA 2020).

Because of the episodic nature of alluvial sedimentation, the sudden burial of artifacts is possible, and alluvial soils have an increased likelihood of containing buried archaeological deposits (Waters 1992, Borejaza et al. 2014).

3.1.1 Paleoenvironment

Since the onset of the Holocene era approximately 10,000 years ago, environmental conditions have changed, rapidly influencing the distribution of flora and fauna in the region. These changes in paleoenvironmental conditions likely influenced the cultural groups who occupied the San Diego region throughout the prehistoric period. Fast paced sea level rise during the transition from the

terminal Pleistocene to the early Holocene caused the paleocoastal landscape to transform significantly, shifting the shoreline eastward and inundating valley floors (Byrd 1996). Sea levels during this time rose by approximately 100 feet, creating steep and narrow bays (Byrd 1996).

Palynological studies conducted near Las Pulgas Canyon in north San Diego County indicate that considerable changes in local plant communities have occurred over the last 4000 years. These changes tend to be associated with a gradual transition from a wetter climate to a much drier climate (Anderson 1996). Since the arrival of Europeans in Southern California, an influx of non-native species occurred that has replaced many indigenous plant communities.

Changes to the paleoenvironment during the Holocene influenced the regional availability of flora and fauna available to indigenous groups. Ongoing archaeological research actively explores the relationship between resource availability and human adaptive responses (Arnold 2001, Gallegos 2002, Raab and Larson 1997, Redman 1999). This research suggests that as resource availability began to fluctuate, some groups may have migrated from the coast to the interior, settling in the inland valleys and mountain areas. The seasonal availability of resources would have influenced the indigenous settlement patterns in San Diego County.

3.2 Cultural Setting

The cultural setting for the project is presented broadly in three overviews: Prehistoric, Ethnographic, and Historic. The prehistoric and historic overviews describe human occupation before and after European contact, while the ethnographic overview provides a synchronic "snapshot" of traditional Native American culture.

3.2.1 Prehistoric Overview

The project site lies in what is generally described as California's Southern Bight (Byrd and Raab 2007). This region extends from the Mexican border to Santa Monica and includes Orange and San Diego counties, western Riverside County, and the Southern Channel Islands. At European contact, the region was occupied by the Tongva, Juaneño, Luiseño, Cupeño, and Kumeyaay (Ipai and Tipai). For the purposes of this study, the prehistoric cultural chronology for the Southern Bight relies heavily on Byrd and Raab (2007), who divide the chronology into the Early (9600- 5600 BCE), Middle (5600-1650 BCE), and Late (1650 BCE- 1769 CE) Holocene.

3.2.2 Terminal Pleistocene and Early Holocene

Traditional models describe California's first inhabitants as big-game hunters roaming North America during the end of the last Ice Age. As the Ice Age came to a close, warmer and drier climatic conditions are thought to have created wide-spread cultural responses. The pluvial lakes and streams in the desert interior began to wane and cultures dependent on these water sources may have migrated to areas with moister conditions, such as the southern California coastal region (Byrd and Raab 2007).

This traditional model is complicated by the dates produced from sites in the northern Channel Islands, which suggest that the California coast may have been settled by boat during the Late Pleistocene. Due to rising sea levels and coastal erosion, evidence of Paleo-Indian populations in southern California remain very limited. Sites on San Miguel and Santa Rosa islands (~13,000 BP) have produced the earliest dates (Erlandson et al. 2011). San Diego County sites have not produced

dates as early as these. However, radiocarbon evidence dates early occupation of the coastal region between circa 10,000 and 9,000 years ago (Byrd and Raab 2007).

The earliest occupation sites in San Diego County, dated to the Early Holocene, reflect a well-defined cultural response to changing climatic conditions in the southern California coastal region (Rogers 1929, 1939). The Harris Site, SDI-149, dates to roughly 9,000 years ago and defined what is known as the San Dieguito Complex (Warren 1967). Leaf-shaped points and knives, crescents, and scrapers characterize the artifact assemblages throughout the region. San Dieguito sites generally show evidence of the hunting of various animals, including birds, and gathering of plant resources, but an absence of marine resources (Byrd and Raab 2007).

Middle Holocene (ca. 5600 to 1650 BCE)

The Middle Holocene is generally viewed as a time of cultural transition. During this time, the cultural adaptations of the Early Holocene gradually altered. Use of milling stone tools began to appear across most of central and southern California around 6,000 to 5,000 BCE, indicating a focus on the collection and processing of hard-shelled seeds. Environmental changes in the Southern Bight are thought to have been the key factor in these changing adaptations (Byrd and Raab 2007). Occupation patterns indicated semi-sedentary populations focused on the bays and estuaries of San Diego and Orange counties, with shellfish and plant resources as the most important dietary components (Warren 1968). In the San Diego area, this adaptive strategy is known as the La Jolla complex.

Sometime around 4,000 years ago, extensive estuarine silting began to cause a decline in shellfish and thus a depopulation of the coastal zone. Settlement shifted to river valleys, and resource exploitation focused on hunting small game and gathering plant resources (Warren 1968, Byrd and Raab 2007).

Late Holocene (ca. 1650 BCE to 1769 CE)

The Late Holocene witnessed numerous cultural adaptations. The bow and arrow was adopted sometime after 500 CE, and ceramics appeared in the area ca. 1000 CE. Populations were sustained by food surpluses, especially acorns (Byrd and Raab 2007, Kroeber 1925). Other exploited food resources include shellfish, fish, small terrestrial mammals, and small-seeded plants. Settlement patterns of the Late Holocene are characterized by large residential camps linked to smaller specialized camps for resource procurement (Byrd and Raab 2007).

3.2.3 Ethnographic Overview

Luiseño

The project site is located in the traditional Luiseño ethnographic territory that extends along the coast of modern-day Southern California in San Diego and Riverside Counties (Bradley 2009). The territory spans between Aliso Creek and Agua Hedionda Creek, inland to Santiago Peak in the north, and to the east side of Palomar Mountain in the south, including Lake Elsinore and the Valley of San José (Bean and Shipek 1978). The commonly accepted names of the Native American Tribes in San Diego County are derived from the Spanish mission period as well as rivers that were present in the tribal territory at the time (White 1998). The term Luiseño was applied to the Native Americans who were administered by the Spanish from Mission San Luis Rey. Prior to missionization, the Luiseño living in the area referred to themselves as the Payomkawichum (Mithun 2001: 539-540, Rincon

Band of Luiseno Indians 2020). The Luiseño name was used to encompass both the Gheecham, Kheecham, and Aguas Calientes Indians (White 1998).

The Luiseño, Cahuilla, and Cupeño tribes are often referred to as the Southern California Shoshone due to their use of the Takic language family of the Uto-Aztecan (Bradley 2009). The Uto-Aztecan language family's origins lie in the Great Basin (Mithun 2001: 539). Linguistic studies suggest that Takic-speaking immigrants from the Great Basin displaced Hokan speakers sometime after 500 BCE (Bean and Shipek 1978).

Prior to European contact, the Luiseño lived in permanent, politically autonomous villages with associated seasonal camps for subsistence exploitation. The population of the Luiseño prior to the arrival of Europeans is believed to be approximately 3,500 (O'Neil 2002). Villages ranged in size from 50 to 400 people. Each village controlled a larger resource territory and maintained ties to other villages through trade and social networks. Trespassing in the resource area of another village was cause for war (White 1963; Bean and Shipek 1978). Village structures consisted of dome-shaped dwellings (*kish*), sweat lodges, and a ceremonial enclosure (*vamkech*). Leadership in the villages focused on the chief, or *Nota*, and a council of elders or *puuplem*. The chief controlled economic and warfare-related activities, but also held a religious role. Religious leadership included a council of shamans or ritual specialists, with each member of the council inheriting the role patrilineally (Kroeber 1925; Bean and Shipek 1978).

Traditional Luiseño subsistence was focused on the acorn and supplemented by the gathering of other plant resources and shellfish, as well as fishing and hunting. Plant foods typically included pine nuts, seeds from various grasses, manzanita, sunflower, sage, chia, lemonade berry, prickly pear, and lamb's-quarter. Common animal resources included deer, antelope, rabbit, quail, ducks and other birds. Fish were exploited from nearby rivers and creeks. Marine fish and sea mammals were caught from the shore and dugout canoes. Shellfish collected from the shore included abalone, turbans, mussels, clams, scallops, and other species (Bean and Shipek 1978). Traditional Luiseño pottery includes (but is not limited to) an earthen vessel called *narungrush*, a wide mouth vessel called a *wiwlish*, a small mouth vessel called *nadungdamal*, and a vessel with two small mouths called a *papakamal* (Sparkman 1909). The *narungrush* was utilized for keeping water cool and storing seeds. *Wiwlish* vessels were used for cooking food. The *nadungdamal* and *papakamal* vessels were used for carrying water (Sparkman 1908).

The center of the Luiseño religion is *Chinigchinich*, the last of a series of heroic mythological figures. The heroes were originally from the stars and their sagas formed Luiseño religious beliefs. Religious rituals took place in a brush enclosure that housed a representation of *Chinigchinich*. Ritual ceremonies included puberty initiation rites, burial and cremation ceremonies, hunting rituals, and peace rituals (Kroeber 1925, Bean and Shipek 1978). Puberty ceremonies for both girls and boys would include painting pictographs and petroglyphs, categorized by archaeologists as the San Luis Rey style or "Luiseño Rectilinear Abstract." It is characterized by zigzags, chevrons, straight lines, and diamond chains (DuBois and Kroeber 1908: 96, Hedges 2002).

The Luiseño today have maintained several of their traditional customs and ceremonies (White 1953). Today there are seven bands of Luiseño people including the San Luis Rey, Pala, Pauma, La Jolla, Rincón, Pechanga, and Sobóba. Many Luiseño people continue to speak their native language, sing traditional songs, and utilize oral history through storytelling.

Kumeyaay

The project site is also located near the traditional territory of the Kumeyaay or Diegueño, which includes the region along the Pacific coast from central San Diego County southward into Baja California and eastward into Imperial County (Gamble and Zepeda 2002). European settlers in the area referred to them as the Diegueño or Diegueno due to the nearby Mission San Diego de Alcala (Gifford 1931). They refer to themselves as "Kumeyaay," which refers to both the Ipai and Tipai groups. Linguistic studies support the division of the Kumeyaay people into northern (Ipai) and southern (Tipai) dialect groups (Gifford 1931, Luomala 1978). Ipai territory includes the area north of La Jolla to Agua Hedionda Lagoon.

Kumeyaay bands typically controlled 10 to 30 linear miles in a drainage system. Each band's territory contained a primary village and a number of secondary homesteads located along tributary creeks (Shipek 1982:297). Each band was composed of 5 to 15 kinship groups (sibs or shiimul), some of which were divided among more than one band (Kroeber 1925: 719). Approximately 50 to 75 named kinship groups were located throughout the entire Kumeyaay territory. Political organization varied between bands. Basic structure included a patrilineal band leader, or a Kwaaypaay, and at least one assistant who acted as a messenger (Luomala 1978: 597, Shipek 1982). The primary roles of the Kwaaypaay were to direct ceremonies, act as a disciplinary head, advise on marriages and family differences, make war decisions, and to organize hunting and foraging expeditions.

The Kwaaypaay counseled shaman on many important decisions. Ceremonies among the Kumeyaay are similar to those of other Southern California Native groups (Kroeber 1925: 712–717). The ceremonial leader was an inherited religious position. Rituals conducted by ceremonial leaders included puberty rites, marriage, naming ceremonies, cremation of the dead, and the annual mourning ceremony (keruk) for all those who had died the previous year. Kumeyaay groups shared religious mythologies and belief in a higher creator-god (Shipek 1985). Kuuchama, or Tecate Peak, was the most sacred landmark, designated by the Kumeyaay god as the location for acquiring power for good, healing, and peace. Other holy places recognized by all Kumeyaay include Wee'ishpa or Signal Mountain, Jacumba Peak, Mt. Woodson, Viejas Mountain, and other mountains near the Colorado River in the Desert Kumeyaay region (Shipek 1985, 1987: 14).

Entire bands moved to winter villages in sheltered valleys near known sources of water. Dwellings in the relatively permanent winter villages were semi-subterranean and roughly circular with a wooden pole framework covered in brush thatch and a mat covering. They faced east to keep out the wind and ensure privacy (Luomala 1978: 597). Other structures in the village consisted of family-owned platform granaries, a village-owned brush ceremonial enclosure, and sweat lodges. A semi-circular enclosure was used for the keruk mourning ceremony, and rock walls sometimes surrounded ceremonial and dance areas. At summer camps, ramadas and windbreaks were common and built into trees or rock shelters. Granaries and more permanent housing would sometimes be constructed in frequently visited oak groves in the hills and in the mountains of Kumeyaay territory.

Many Kumeyaay camped in coastal valleys at certain times of the year to gather coastal resources. Fish were caught with hooks, nets, and bows from tule boats. Shellfish were gathered from the sandy beaches (e.g., Chione, scallops, and Donax) and rocky shores (e.g., mussels and abalone). Common game birds included doves and quail; migratory birds included geese. A primary source of protein came from rabbits, woodrats, and other small game living along the mesas and foothills. Small mammals were caught using throwing sticks, bow and arrow, or in nets on community drives. Hunting large game such as deer and mountain sheep was the role of expert hunters trained in

specialized hunting folklore (Luomala 1978: 601). Land resources generally belonged to the bands with only a few areas considered "tribal" land and open to anyone (Shipek 1982: 301). Water and stored foods were communally available to all band members on a reciprocal basis (Luomala 1978).

During the winter season, perennial herbs were collected in the valleys. Greens included miner's lettuce (claytonia perfoliata), clover, pigweed (aramanthus), and other grasses. Seeds were harvested from buckwheat, chia and other salvias, and a variety of grasses. In the mountains and foothills, yucca was gathered for its stalks, flowers, and leaves. Elderberry, manzanita, cholla, prickly-pear opuntia cactus, and juniper shrubs provided berries and fruit. The acorns from several species of oak were a subsistence staple gathered during the late summer and stored in family and village granaries. At least six species of oaks provided acorns for the Kumeyaay in San Diego County (Luomala 1978: 600).

Production of baskets, nets, and pottery were primarily female occupations. Their main use was food procurement, production, and processing (Wallace 1978). High-quality baskets with a weave similar to other Southern California groups were unique on local and regional levels. The regional unity in basketry traditions is linked to the prominence of acorn processing (Jordan and Shennan 2003). Beyond baskets, carrying nets and sacks were also used for food collection. Regularly manufactured ceramic vessels were used as water jars, for cooking and storage, and as cremation urns (Kroeber 1925: 722).

Men and children wore utilitarian belt sashes and pouches designed to hold tools and small game. Women wore a one- or two-piece apron made of shredded bark and a round, twined cap. Robes of rabbit fur, willow bark, or deerskin were worn in the winter and also served as bedding. For long distance travel, sandals woven from agave fibers protected their feet (Luomala 1978: 599). Special ceremonial costumes and adornment were worn during ceremonies. With the exception of boys and mourners, hair was worn long with bangs cut at the forehead.

Accounts by Spanish missionaries and Kumeyaay elders suggest that status differentiation was established during the Late Holocene but could possibly have been earlier (Shipek 1982). Socio-political structure was drastically disrupted by the introduction of Spanish, Mexican, and American policies and the subsequent depopulation from disease and drought (Shipek 1982). Today, the Kumeyaay are divided into 12 bands: Barona, Campo, Ewiiaapaayp, Inaja-Cosmit, Jamul, LaPosta, Manzanita, Mesa Grande, San Pasqual, Santa Ysabel, Sycuan, and Viejas. Kumeyaay governments are federally recognized and have jurisdiction over approximately 70,000 acres in San Diego County.

3.2.4 Historic Overview

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769 to 1822), Mexican Period (1822 to 1848), and American Period (1848 to present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769 to 1822)

Spanish explorers made sailing expeditions along the coast of California between the mid-1500s and mid-1700s. Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what was known by the Spanish as Alta (upper) California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968, Rolle 2003). The Spanish crown laid claim to Alta California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885, Gumprecht 1999).

By the eighteenth century, Spain developed a three-pronged approach to secure its hold on the territory and counter against other foreign explorers. The Spanish established military forts known as presidios, as well as missions and pueblos (towns) throughout Alta California. The 1769 overland expedition by Captain Gaspár de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá established the Presidio of San Diego as the first Spanish settlement in Alta California in 1769. Franciscan Father Junípero Serra also founded Mission San Diego de Alcalá that same year, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Gaffy 2010).

Construction of missions and associated presidios was a major emphasis during the Spanish Period in California to integrate the Native American population into Christianity and communal enterprise. The mission closest to the project site is the San Luis Rey Mission, established in 1798 and located approximately 11 miles north of the project site. Mission records from 1828 indicate that the Luiseño population was 3,683 during the Spanish Period (Bean and Shipek 1978). During this period, incentives were also provided to bring new settlers to pueblos or towns; just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles).

Spain began making land grants in 1784, typically to retiring soldiers, although the grantees were only permitted to inhabit and work the land. The land titles technically remained property of the Spanish king (Livingston 1914).

Mexican Period (1822 to 1848)

Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. Commonly, former soldiers and well-connected Mexican families were the recipients of these land grants, which now included the title to the land (Gaffy 2010). Many of these Mexican rancheros relied on exploited Native American labor, leading to revolts and uprisings against unjust treatment. Some coastal Luiseño populations sought refuge inland, with some individuals obtaining land grants from the Mexican government (Bean and Shipek 1978).

During the supremacy of the ranchos (1834 to 1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities (Gaffy 2010).

American Period (1848 to Present)

The United States went to war with Mexico in 1846. During the first year of the war, John C. Fremont traveled from Monterey to Los Angeles with reinforcements for Commodore Stockton and evaded Californian soldiers in Santa Barbara's Gaviota Pass by taking the route over the San Marcos grade instead (Kyle 2002). The war ended in 1848 with the Treaty of Guadalupe Hidalgo, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as United States territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through 1850s. The discovery of gold in the northern part of the state led to the Gold Rush beginning in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom.

A severe drought in the 1860s decimated cattle herds and drastically affected rancheros' source of income. In addition, property boundaries that were loosely established during the Mexican era led to disputes with incoming settlers, problems with squatters, and lawsuits. Rancheros often were encumbered by debt and the cost of legal fees to defend their property. As a result, much of the rancho lands were sold or otherwise acquired by Americans. Most of these ranchos were subdivided into agricultural parcels or towns (Dumke 1944).

Local History

In 1875, Gustavus French Merriam relocated his family from Kansas to Southern California, purchasing 160 acres, on which he established an apiary and vineyard in the San Marcos Valley (Carroll 1975). Within a few years, the area surrounding the Merriam homestead—the first in the area—began attracting European immigrants. In 1887, the San Marcos Land Company purchased much of the surrounding land to partition into tracts available for purchase by an increasing number of families looking to move into the area. The early growth of San Marcos was aided, in large part, by its proximity to the Santa Fe Railroad Line, which began construction in 1880 (City of San Diego 2006). By 1896, the burgeoning town had a post office, school, blacksmith, and railroad depot (Carroll 1975).

Throughout the early twentieth century, San Marcos was an agriculturally driven community, with many of its residents involved in farm-related work. Poultry was one of the key products for agriculture in the area, with the CSUSM campus once being located on the Prohoroff Poultry ranch (Department of History, CSUSM). Other agricultural ventures in San Marcos Valley included nurseries and dairies, including Hollandia Dairy, still existent today (Los Angeles Times 1990). By 1956, 2,500 residents lived in San Marcos and in 1963 the community was officially incorporated as

a city. The population of San Marcos steadily expanded from 17,479 in 1980 to over 63,900 in 2018. San Marcos has continued to grow from a farming community serving the greater San Diego area to a city featuring commercial centers, a large business district, recreational activities, and an extensive higher education community with four college and university campuses (City of San Marcos 2018).

4 Methods

This section presents the methods for each task completed during the preparation of this study.

4.1 Background and Archival Research

4.1.1 Archival Research

Rincon completed background and archival research in support of this study in June 2022. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were utilized to develop an understanding of the project site and its context:

- Historical aerial photographs accessed via NETR Online
- Historical USGS topographic maps

4.1.2 California Historical Resources Information System Records Search

On September 9, 2022, Rincon received California Historical Resources Information System (CHRIS) records search results from the South Coast Information Center (SCIC) (Appendix A). The SCIC is the official state repository for cultural resources records and reports for the county in which the project falls. The purpose of the records search was to identify previously recorded cultural resources, as well as previously conducted cultural resources studies within the project site and a 0.25-mile radius surrounding it. Rincon also reviewed the NRHP, the CRHR, the California Historical Landmarks list, and the Built Environment Resources Directory, as well as its predecessor the California State Historic Property Data File. Additionally, Rincon reviewed the Archaeological Determination of Eligibility list.

4.1.3 SLF Search

Rincon contacted the NAHC on August 22, 2022, to request a search of the SLF, as well as a contact list of Native American groups and/or individuals culturally affiliated with the project site and who may have knowledge of cultural resources in the project site (Appendix B).

4.2 Personnel

Rincon Senior Archaeologist Cameron Felt, MSc provided management oversight and reviewed the project for archaeological resources and is a contributing author of this report. Archaeologist Mary Garrett-Catlin, BA, completed the field survey. Archaeologist Rachel Bilchak, BA, Registered Archaeologist, completed the cultural resources records search and SLF Search. Archaeologist Debbie Balam, BA, is a contributing author on this report. Geographic Information System Analyst Allysen Valencia prepared the figures found in this report. Heather Blind, MA, Senior Archaeologist and Cultural Resources Program Manager, and Principal Investigator Chris Duran, MA, RPA, reviewed this report for quality control.

4.3 Field Survey

Rincon Archaeologist Mary Garret-Catlin, BA, conducted a pedestrian survey of the project site on September 19, 2022. Ms. Garrett-Catlin conducted the pedestrian survey using transect intervals spaced 10 meters apart and oriented generally from west to east. Exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historic debris (e.g., metal, glass, ceramics). Ground disturbances such as animal burrows and drainages were also visually inspected. Survey accuracy was maintained using a handheld global positioning system unit and a georeferenced map of the project site. Site characteristics and survey conditions were documented using field records and a digital camera. Copies of the survey notes and digital photographs are maintained at the Rincon San Diego office.

5 Findings

5.1 Known Cultural Resources Studies

The CHRIS records search and background research identified 17 cultural resources studies within 0.25 mile of the project site (Appendix A). Of these studies, eight are recorded as overlapping portions of the project site. The entirety of the project site has been previously studied, with the most recent pedestrian survey completed in 1985. The scope and results of the most relevant studies are detailed below, with broad regional studies and literature reviews omitted from this discussion.

Study SD-00684 is a Phase I Cultural Resources Survey Report prepared by Susan M. Hector in 1985. The report summarizes pedestrian survey efforts for the Prohoroff property. The pedestrian survey took place June 18 and June 19, 1985. During the pedestrian survey effort, six cultural resources, four historical resources and two prehistoric isolated artifacts were identified. The isolated prehistoric artifacts consisted of a secondary felsite flake and an incomplete felsite bifacial tool. The historic-period resources consist of three single-story house dwellings and a house foundation. The resources closest to the current project site include Historic Site One, a single-story frame farmhouse and associated outbuildings located approximately 350 feet southwest of the intersection of Twin Oaks Valley Road and Myrtle Street (now East Barnham Drive); Historic Site Two, a single-story frame farmhouse located approximately 800 feet east of the intersection of Twin Oaks Valley Road and East Barnham Drive; and Historic Site Three, a house foundation. The structures were determined non-significant and appear to have been demolished and replaced by commercial and campus developments. None of these resources were identified within the records search as within 0.25-miles of the project site. The entirety of the project site was included in this study.

Study SD-10551 is a Cultural Resources Monitoring and Findings Report prepared by SWCA in 2006. The report summarizes monitoring and findings for the maintenance of the existing QWEST fiber optic cable network within California, including segment 32 Oceanside to Escondido, which extends into the city of San Marcos. The report discusses archaeological findings within a 0.5-mile radius of each segment. One prehistoric resource included in the report, CA-SDI-8720 (isolated grinding slick, disturbed by construction), is located northwest within 0.5-mile of the current project site. This report summarized monitoring activities which occurred outside of the current project site, and no pedestrian survey was conducted. No cultural resources were identified by this study within the current project site.

Study SD-14098 is a Phase I Cultural Resources Survey Report prepared by Don Laylander and Sinéad Ní Ghabhláin in 2009. The report summarizes pedestrian survey efforts for the University District Project, located north and adjacent to the current project site. The pedestrian survey identified two historic-period sites, ASM12760-A&B (concrete foundation pads for post-1945 chicken coop and concrete drain) and ASM12760-C (concrete foundation pads for post-1945 chicken coop), within 0.5-mile of the current project site. Additionally, SD-14098 identified two archaeological resources within 0.5-mile of the project site: CA-SDI-17896 (bedrock milling feature with three slicks) and CA-SDI-17898 (historic-period concrete pad, floor tiles, historic/modern debris, and remains of chimney-like structure). The resources described in SD-14098 are all located west of South Twin Oaks Valley Road and north of Discovery Street, outside of the current project site. SD-14098 only

partially included the current project site in its scope, with the current location of the multi-purpose athletic field overlapping the southern extent of SD-14098. Approximately 10 percent of the current project site was included in SD-14098 and no cultural resources were identified within the current project site.

The project site studied in SD-14098 consisted of approximately 187 acres north of the current project site and included a 1-mile search radius. As a result of this study, 59 cultural resources were located within a 1-mile search radius, 49 of which were identified as prehistoric sites and/or isolates. However, the 2009 project site far exceeds the size of the current project site and does not provide the locations of the 59 cultural resources. Therefore, these cultural resources are not included in Table 1, as the proximity to the current project site is unknown. However, the findings presented in this 2009 report contribute to the overall archaeological sensitivity of the project vicinity.

5.2 Known Cultural Resources

The CHRIS records search and background research identified no archaeological resources within 0.25 miles of the project site. Although no resources were reported within 0.25 mile of the project site, Rincon's background research identified the following cultural resources known to be within approximately 0.5-miles of the project site.

Table 1 Known Cultural Resources in Vicinity of Project Site

Primary or Temp Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	Eligibility Status	Relationship to Project Site
P-37-008720	CA-SDI-8720	Site	Prehistoric bedrock milling feature	Carillo and Price 1981	Unknown	Outside
–*	CA-SDI-17896	Site	Prehistoric bedrock milling feature	*W. Lewis and J. Tadlock (1976)*	Unknown	Outside
–*	CA-SDI-17898	Site	Historic-period structural remains, including refuse, concrete pad with floor tiles, and possible chimney	*K. Turnbull, Environmental Coalition (1981)*	Unknown	Outside
ASM 12760-A&B	–*	Site	Concrete foundation pads for a post-1945 chicken coop and concrete drain	ASM Affiliates 2009	Unevaluated	Outside
ASM 12760-C	–*	Site	Concrete foundation pads for post-1945 chicken coop	ASM Affiliates 2009	Unevaluated	Outside

* Primary Number or Trinomial Unknown

Source: SWCA 2006; Laylander and Ní Ghabhláin 2009

5.3 Aerial Imagery and Historical Topographic Maps Review

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the project site (**Error! Reference source not found.**). The 1893 *Escondido, California,* USGS topographic map depicts the project site as undeveloped land, though a single building is depicted in the project vicinity. By the early twentieth century, the project site continues to be depicted as undeveloped, though a road is depicted adjacent to the project site, in the current

location of South Twin Valley Oaks Road. This road is depicted in both the 1901 *San Luis Rey, California,* and 1901 *Escondido, California,* USGS topographic maps.

By the mid-twentieth century, the project site is depicted in the USGS 1942 *Escondido, California,* topographic map as a developed orchard, with a building located within or adjacent to the project site at its eastern extent. Subsequently, the 1948 and 1949 USGS topographic maps of *San Marcos, California,* depict a building at the approximate location of the current multi-purpose athletic field, at the intersection of South Twin Valley Oaks Road and East Barham Drive. A review of historical aerial imagery (dated to 1947) also depicts this building, as well orchards, a potential irrigation ditch, crop fields, and two additional buildings or structures within the current project site. Aerial imagery dated to 1953 and 1964 depicts further agricultural development with the construction of large structures in the southern portion of the project site, potentially a warehouse or agricultural facilities. Aerial imagery dated to 1967 and the 1968 USGS topographic map of *San Marcos, California,* depicts multiple buildings along East Barham Drive, likely single-family residences, as well as the larger agricultural facilities to the south. The project site remained largely unchanged until 1990, when aerial imagery depicts large-scale grading within the project site and the demolition of all buildings and structures in the project vicinity. The 1996 *San Marcos, California,* USGS topographic map depicts no buildings or structures within the project site, further indicating that they had all been demolished by this time. The project site currently consists of recently constructed athletic fields.

5.4 SLF Search

Rincon contacted the NAHC on August 22, 2022, to request a SLF search of the project site. As part of this request, Rincon asked the NAHC to provide a list of Native American groups and/or individuals culturally affiliated with the area who may have knowledge of archaeological resources in the project site. On October 25, 2022 Rincon received a response from the NAHC. The SLF results were positive and a list of tribes to contact was attached (Appendix B). On January 25, 2023, Rincon attended one virtual consultation meeting between the University and the San Pasqual Band of Mission Indians and one virtual meeting between the University and the Rincon Band of Luiseño Indians. During the virtual meeting, the San Pasqual Band of Mission Indians requested to have a Native American monitor present during ground disturbance. In addition to a virtual meeting, the Rincon Band of Luiseño Indians completed two letters to the University (dated to January 25, 2023, and March 7, 2023) reviewing Rincon's cultural resources assessment. These letters have been included in Appendix B.

In government-to-government consultation, the Rincon Band of Luiseño Indians identified the proposed project site to be located within a potential Traditional Cultural Property. However, outside of the already known and identified impacts, none of which rise to the level of a substantial adverse change under either California Public Resources Code Sections 21084.1 or 21084.2, and as was confirmed in the government-to-government consultation process between the Rincon Band of Luiseño Indians and officials from CSUSM, construction of the project does not trigger a finding of a significant effect on a known historic or tribal cultural resource.

5.5 Survey Results

The project site is located adjacent to three existing athletic fields on the CSUSM campus (**Error! Reference source not found.**). The project site includes landscaping on the northwest corner of the

multi-purpose field adjacent to Twin Oaks Boulevard and the north side of the soccer field/multi-purpose athletic field (**Error! Reference source not found.**). To anticipate the full extent of future ground disturbance, the pedestrian survey included a 10-foot buffer of all proposed trenching and installation points for lighting and audio infrastructure surrounding the existing athletic fields (Figure 3). The area between the soccer field and the larger baseball field, as well as the area north of the soccer field, have been graded with some areas covered in gravel (**Error! Reference source not found.**). Ground visibility was good with approximately 80 percent visibility throughout the project site. Areas with poor visibility were due to the landscaped grassy areas and sidewalks. The soil observed within the unpaved walking paths was a compacted light brown sandy silt (**Error! Reference source not found.**). A retaining wall for the building east to the athletic fields and planted palm trees represent additional prior ground disturbance within the project site. No archaeological resources were identified during the field survey.

6 Impact Analysis and Conclusions

The impact analysis included here is organized based on the cultural resources thresholds included in the *CEQA Guidelines* Appendix G: Environmental Checklist Form:

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historical resources. To clearly differentiate between archaeological and built environment resources, analysis under Threshold A is limited to built environment (I.e., historical) resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Threshold B.

6.1 Historical and Unique Archaeological Resources

The field survey and background research did not identify any built environment resources that may be considered historical resources within the project site. The project therefore does not have the potential to impact built environment historical resources. Rincon recommends a finding of ***no impact to historical resources*** pursuant to CEQA.

This study did not identify any archaeological resources or archaeological deposits in the project site. Regardless, there is still a potential that unknown buried archaeological resources could be encountered during project ground disturbance. Considering the density of prehistoric resources recorded in the project vicinity and an analysis of soils present in the project site, the project site is located within an area sensitive for archaeological resources.

In the event of an unanticipated discovery, impacts to unknown archaeological resources would be potentially significant.

6.2 Human Remains

No human remains are known to be present within the project site. However, the discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify the MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, ***i***mpacts on human remains would be ***less than significant***.

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Appendix A

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-00684	NADB-R - 1120684; Voided - HECTOR 30	1985	Hector, Susan and Stephan Van Wormer	Archaeology Survey of the Prohoroff Property San Marcos, California.	RECON	
SD-01031	NADB-R - 1121031; Voided - GALLEGO 17	1983	Gallegos, Dennis	Archaeological Report for Business/Industrial, Richmar, Lake San Marcos and Barham/Discovery Community Plan, San Marcos, California	WESTEC Services, Inc.	37-000560, 37-004667, 37-004668, 37-005080, 37-005081, 37-005082, 37-005541, 37-005542, 37-005543, 37-005632, 37-005633, 37-008328, 37-008329, 37-008386, 37-008462, 37-008720
SD-01732	NADB-R - 1121732; Voided - PADON 04	1987	Padon, Beth and Steve Van Wormer	Cultural/Scientific Resources for the San Diego State University North County Center Master Plan San Diego County, California	LSA Associates, Inc.	
SD-02043	NADB-R - 1122043; Voided - BRANDMAN 2	1989	Micheal Brandman Associates, Inc.	Draft Environmental Impact Report San Marco Flood Control Channel San Marcos Creek/Las Posas Reach SCH #88061505	Micheal Brandman Associates, Inc.	
SD-07729	NADB-R - 1127729; Voided - FOSTERD 10	2000	FOSTER, DANIEL G. and MARK THORNTON	MANAGEMENT PLAN FOR CDF'S HISTORIC BUILDINGS AND ARCHAEOLOGICAL SITES	CDF	
SD-10551	NADB-R - 1130551; Voided - ARRINGT01	2006	ARRINGTON, CINDY	CULTURAL RESOURCES FINAL REPORT OF MONITORING AND FINDINGS FOR THE QWEST NETWORK CONSTRUCTION PROJECT, STATE OF CALIFORNIA	SWCA ENVIRONMENTAL CONSULTANTS	
SD-14098	NADB-R - 1134098; Voided - LAYLAD81	2009	LAYLANDER, DON and SINEAD NI GHABHLAIN	A CULTURAL RESOURCES SURVEY FOR THE UNIVERSITY DISTRICT PROJECT CITY OF SAN MARCOS, CALIFORNIA	ASM AFFILIATES, INC.	37-027375, 37-027376, 37-027377, 37-030379, 37-030380
SD-14140	NADB-R - 1134140; Voided - ROBBINS385	2003	ROBBINS-WADE, MARY	ARCHAEOLOGICAL RECORDS SEARCH AND LITERATURE REVIEW, VALLECITOS WATER DISTRICT MASTER PLAN UPDATE SAN DIEGO COUNTY, CALIFORNIA	AFFINIS	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-00684	NADB-R - 1120684; Voided - HECTOR 30	1985	Hector, Susan and Stephan Van Wormer	Archaeology Survey of the Prohoroff Property San Marcos, California.	RECON	
SD-01031	NADB-R - 1121031; Voided - GALLEGO 17	1983	Gallegos, Dennis	Archaeological Report for Business/Industrial, Richmar, Lake San Marcos and Barham/Discovery Community Plan, San Marcos, California	WESTEC Services, Inc.	37-000560, 37-004667, 37-004668, 37-005080, 37-005081, 37-005082, 37-005541, 37-005542, 37-005543, 37-005632, 37-005633, 37-008328, 37-008329, 37-008386, 37-008462, 37-008720
SD-01732	NADB-R - 1121732; Voided - PADON 04	1987	Padon, Beth and Steve Van Wormer	Cultural/Scientific Resources for the San Diego State University North County Center Master Plan San Diego County, California	LSA Associates, Inc.	
SD-02043	NADB-R - 1122043; Voided - BRANDMAN 2	1989	Micheal Brandman Associates, Inc.	Draft Environmental Impact Report San Marco Flood Control Channel San Marcos Creek/Las Posas Reach SCH #88061505	Micheal Brandman Associates, Inc.	
SD-02368	NADB-R - 1122368; Voided - WADE 41	1992	WADE, SUE	CULTURAL RESOURCE RECONNAISANCE FOR UNIVERSITY CENTER BUSINESSPARK CITY OF SAN MARCOS	RECON	37-000560, 37-012095
SD-02373	NADB-R - 1122373; Voided - GALLEGO111	1992	GALLEGOS, DENNIS	HISTORICAL / ARCHAEOLOGICAL SURVEY FOR THE PROPOSED KAISER PERMANENTE MEDICAL CENTER	GALLEGOS AND ASSOCIATES	
SD-07729	NADB-R - 1127729; Voided - FOSTERD 10	2000	FOSTER, DANIEL G. and MARK THORNTON	MANAGEMENT PLAN FOR CDF'S HISTORIC BUILDINGS AND ARCHAEOLOGICAL SITES	CDF	
SD-09041	NADB-R - 1129041; Voided - KYLE213	2002	KYLE, CAROLYN	CULTURAL RESOURCE ASSESSMENT FOR CINGULAR WIRELESS FACILITY SD849-01, SAN DIEGO COUNTY, CALIFORNIA	KYLE CONSULTING	
SD-09503	NADB-R - 1129503; Voided - ROBBIN138	2005	Robbins-Wade, Mary	University Place Due Diligence - Archaeological Survey (Affinis Job #2020)	Affinis Environmental	
SD-09611	NADB-R - 1129611; Other - 2071; Voided - ROBBIN 138	2005	Robbins-Wade, Mary	Archaeological Resources Inventory For Southern Hills Pointe, Poway, San Diego County, California	Affinis	
SD-10551	NADB-R - 1130551; Voided - ARRINGT01	2006	ARRINGTON, CINDY	CULTURAL RESOURCES FINAL REPORT OF MONITORING AND FINDINGS FOR THE QWEST NETWORK CONSTRUCTION PROJECT, STATE OF CALIFORNIA	SWCA ENVIRONMENTAL CONSULTANTS	
SD-12025	NADB-R - 1132025; Voided - GALLEGO327	2005	GUERRERO, MONICA, LARRY TIFT, and DENNIS R. GALLEGOS	CULTURAL RESOURCE SURVEY FOR THE GRAND AVENUE BRIDGE PROJECT SAN MARCOS, CALIFORNIA	GALLEGOS & ASSOCIATES	37-027375, 37-027376, 37-027377

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-12271	NADB-R - 1132271; Voided - ROBBINS282	2009	ROBBINS-WADE, MARY	ARCHAEOLOGICAL RESOURCES STUDY, BARHAM ROUGH GRADING PROJECT, SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA	AFFINIS	
SD-12834	NADB-R - 1132834; Voided - ROBBINS305	2010	ROBBINS-WADE, MARY	BARHAM ROUGH GRADING PROJECT ARCHAEOLOGICAL MONITORING	AFFINIS	37-031402
SD-14098	NADB-R - 1134098; Voided - LAYLAD81	2009	LAYLANDER, DON and SINEAD NI GHABHLAIN	A CULTURAL RESOURCES SURVEY FOR THE UNIVERSITY DISTRICT PROJECT CITY OF SAN MARCOS, CALIFORNIA	ASM AFFILIATES, INC.	37-027375, 37-027376, 37-027377, 37-030379, 37-030380
SD-14140	NADB-R - 1134140; Voided - ROBBINS385	2003	ROBBINS-WADE, MARY	ARCHAEOLOGICAL RECORDS SEARCH AND LITERATURE REVIEW, VALLECITOS WATER DISTRICT MASTER PLAN UPDATE SAN DIEGO COUNTY, CALIFORNIA	AFFINIS	
SD-18020	NADB-R - 1138020; Other - EBI PROJECT NO. 6117005106; Other - TCNS NO. 162562	2017	DIETTERICH, JAMES	ARCHAEOLOGICAL SURVEY REPORT CSU SAN MARCOS / SD0233 / FA 10546488, NORTHWEST CORNER OF CRAVEN ROAD AND CAMPUS VIEW DRIVE, SAN MARCOS, SAN DIEGO COUNTY, CALIFORNIA, 92078, NOT PART OF PLSS	EBI CONSULTING	

South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
nick@scic.org

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORDS SEARCH

Company: Rincon Consultants

Company Representative: Rachel Bilchak

Date Processed: 9/2/2022

Project Identification: 22-12931 CSUSM ISMND Field Lighting Audio

Search Radius: 1/4 mile

Historical Resources: JL

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: JL

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: JL

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: N/A

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Summary of SHRC Approved CHRIS IC Records Search Elements	
RSID:	3189
RUSH:	no
Hours:	1
Spatial Features:	17
Address-Mapped Shapes:	no
Digital Database Records:	0
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	1331

This is not an invoice. Please pay from the monthly billing statement

Appendix B

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[VAVANT]

COMMISSIONER
[VACANT]

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 25, 2022

Rachel Bilchak
Rincon Consultants, Inc.

Via Email to: rbilchak@rinconconsultants.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, CSUSM IS-MND Field Lighting and Audio Project, San Diego County

Dear Ms. Bilchak:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Pechanga Band of Indians on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
San Diego County
10/25/2022

Barona Group of the Capitan Grande
Raymond Welch, Chairperson
1095 Barona Road — Diegueno
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
counciloffice@barona-nsn.gov

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Band of Kumeyaay Indians
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 933 - 2200
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Band of Kumeyaay Indians
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 368 - 4382
Fax: (619) 445-9126
ceo@ebki-nsn.gov

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Inaja-Cosmit Band of Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. — Diegueno
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
epinto@jiv-nsn.gov

Jamul Indian Village
Lisa Cumper, Tribal Historic Preservation Officer
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4855
lcumper@jiv-nsn.gov

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 — Diegueno
Pine Valley, CA, 91962 — Kwaaymii
Phone: (619) 709 - 4207

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed CSUSM IS-MND Field Lighting and Audio Project, San Diego County.

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pechanga Band of Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

San Pasqual Band of Diegueno Mission Indians
Allen Lawson, Chairperson
P.O. Box 365 — Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla, Luiseno
San Jacinto, CA, 92581
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla, Luiseno
San Jacinto, CA, 92581
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Viejas Band of Kumeyaay Indians
John Christman, Chairperson
1 Viejas Grade Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed CSUSM IS-MND Field Lighting and Audio Project, San Diego County.

Appendix C

Greenhouse Gas Calculations

Appendix B

Greenhouse Gas Emissions Calculations

CSUSM Electrcity Conversion and Emissions Estimation

Total kWhr While Lights are On for a Night Game Annually			
Field	**Total kW Load**	**Hours of Night Games Per Year**	**kWhr/year**
Baseball	149.22	48.00	7162.66
Softball	59.17	12.00	710.04
Soccer	51.48	13.50	694.98
		Total kWhr/year	8567.68

Total kWhr While Lights are on at the Soccer Field for Rec Sports			
Total kW Load	**# of Hours Lights are on per week***	**Days per year lights are on****	**kWhr/year**
51.48	21.25	150.00	164092.50

*assumes that lights are on from sunset to 10:15 p.m., an average of 4.25 hours per day

**based on 150 days in the instructional school year

Total Project kWhr/year	172660.18

Convert kWhr/year to MWhr/year	172.66

CSUSM Electrcity Conversion and Emissions Estimation

GHG Calculations				
	Electricity to Emissions Calculations		CO2e Conversion Calculations	
	Energy Intensity Factor (lbs/MWhr)	Emissions (lbs)	Total CO2e Emissions (lbs)	Total CO2e Emissions (MT)
CO2	539.98	93233.56	93233.56	42.29
CH4	0.03	5.70	142.44	0.06
N2O	0.00	0.69	205.81	0.09
	Total GHG Emissions from Electricity			42.45

Notes
- Energy intensity factors for SDG&E based on 2021 energy intensity factors.
- CH4 conversion assumes 1 lb CH4 is equivalent to 25 lbs CO2e (consistent with IPCC AR4 [2007], which informs CARB's 2017 Scoping Plan)
- N2O conversion assumes 1 lb N2O is equivalent to 298 lbs CO2e (consistent with IPCC AR4 [2007], which informs CARB's 2017 Scoping Plan)