RCCD | RIVERSIDE COMMUNITY COLLEGE DISTRICT
MORENO VALLEY COLLEGE | NORCO COLLEGE | RIVERSIDE CITY COLLEGE

October 7, 2022

TO:	Interested Agencies and Individuals
LEAD AGENCY:	Riverside Community College District
SUBJECT:	**Notice of Intent to Adopt a Mitigated Negative Declaration for the Riverside Community College District Solar Plan Project**
COMMENT PERIOD:	October 7, 2022, to November 7, 2022

Pursuant to the California Environmental Quality Act, the Riverside Community College District (RCCD) has prepared an Initial Study and Draft Mitigated Negative Declaration (MND) to analyze the potential environmental impacts of its proposed Solar Plan (Project) that would be located at Moreno Valley College and Norco College in the County of Riverside, California. The Initial Study and Draft MND reflect the independent judgment of RCCD.

Project Location: The project sites are located at 2001 Third Street in Norco, California at Norco College and 16130 Lasselle Street in Moreno Valley, California at Moreno Valley College.

Project Description: The Norco College Project component includes installation of a 2.1-megawatt (MW), ground-mounted fixed tilt photovoltaic (PV) array approximately 6 acres in size on the undeveloped hillside to the northeast of the main Norco College campus. The Project includes installation of a new alternating current (AC) station at the southwest corner of the array and a 12-kilovolt (KV) underground transmission line running southwest from the AC station to a new battery storage/battery switchboard that will be located on the site of an existing fuel cell, which will be demolished as part of the Project. Electricity will run from the new 500 kilowatt battery site through an existing 12KV underground transmission line along the northern edge of the main campus. The existing line will connect to a new Project 12KV underground transmission line at the location of a new power pole at the northwest corner of the main campus. The new line will run along the western edge of the main campus where it will connect to a new AC station at the southwest corner of campus which will then be connected to new AC conduit for an EV charger switchboard.

Norco College, including the Project site, is encumbered with a Land Use Covenant (LUC). According to the covenant, "hazardous substances, including antimony, cadmium, copper, lead, silver, zinc, dioxins, and furans remain at the Property above levels acceptable for unrestricted land use. Additionally, the Property has not been fully surveyed and characterized to determine if other hazardous substances above levels acceptable for unrestricted land use also remain in soils, soil gases, or groundwater." A Historical Hazards Evaluation conducted to assess the property did not identify any historical sites of contamination that overlap with the Project site. The nearest historically contaminated site is a landfill site located to the south of the Project site where John F. Kennedy Middle College High School is currently located. Remediation of this area was completed in 2005 for construction of the school. However, one of the requirements of the LUC is that a soil management plan, approved by the Department of Toxic Substances Control, is required prior to disturbance of soils at or below 4 feet below ground surface in developed areas or any soils in undisturbed areas on the campus. Any soils brought to the surface must be managed according to applicable provisions of state and federal law. The Proposed Project involves ground disturbing activities. The depth of subsurface disturbances for installation of the PV array is estimated to be 8 feet below grade for the single footing. As such, the Project will be required to comply with the applicable restrictions outlined in the LUC. The subject property is also currently under a voluntary cleanup agreement, initiated in 2011 and updated in 2019. Multiple requirements are included in the voluntary cleanup agreement, such as requirements for completion of work plans, health risk assessments, soil management plans, and remediation work plans for activities conducted on the subject property which require excavation/disturbance of soil. These requirements are applicable to the Proposed Project

The Moreno Valley College Project component includes installation of a 0.9- megawatt ground-mounted fixed tilt PV array approximately 2.7 acres in size on undeveloped land on the easternmost edge of the campus, including a solar switchboard at the northern edge of the array. The array will tie into an existing 12KV underground transmission line via a new 12KV underground transmission line running west from the new switchboard and a 400-kilowatt battery storage facility. This Project component includes installation of a new battery storage/switchboard at the northern edge of the main campus and a new 12KV underground transmission line connecting the new battery storage/switchboard to new PV canopies in the parking lots which are not part of the Proposed Project. The Moreno Valley College Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

Public Review Period: The Initial Study/MND is being made available for public review for a period of 30 days beginning October 7, 2022, and concluding November 7, 2022. A hard copy of the Initial Study/MND may be viewed at the RCCD office located at 3801 Market Street, Riverside, California. An electronic version of the Initial Study/MND may also be viewed at the following website address: www.rccd.edu.

Printed copies of the Initial Study/MND are also available for review at the Moreno Valley Public Library located at 25480 Alessandro Boulevard, Moreno Valley, California 92553 and the Norco Public Library located at 3240 Hamner Avenue #101B Norco, California 92860.

Comments on the Initial Study/MND must be received in writing or via email no later than November 7, 2022, and sent to:

Mehran Mohtasham, Director Capital Planning, Facilities, Planning and Development
3801 Market Street, 3rd Floor
Riverside, California 92501
Mehran.Mohtasham@rccd.edu

A public hearing at which the project and the Initial Study/MND will be considered has not yet been scheduled. All comments received related to issues in the Initial Study/MND will be included in the final package that is forwarded to the Board of Trustees for final consideration at this future, currently unscheduled, public hearing. Once a public hearing has been scheduled, the agenda for the meeting at which the project will be considered will be posted 72 hours prior to the meeting at each campus/college within the District pursuant with the noticing requirements set forth by RCCD Administrative Procedure No. 2310.

Please note that all comments and materials received, including names and addresses, will become part of the administrative record and may be released to the public. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. If RCCD finds that the Project will not have a significant effect on the environment, it may adopt the Initial Study/MND. This means that RCCD may proceed to consider the project without the preparation of an Environmental Impact Report.

HUSSAIN AGHA

Hussain Agah
Associate Vice Chancellor,
Facilities Planning & Development

OCTOBER 6, 2022

Date

DRAFT

Initial Study/Mitigated Negative Declaration

Riverside Community College District Solar Plan Project

OCTOBER 2022

Prepared for:

RIVERSIDE COMMUNITY COLLEGE DISTRICT
3801 Market Street, 3rd Floor
Riverside, California 92501
Contact: Hussain Agah, Associate Vice Chancellor, Facilities Planning and Development

Prepared by:

DUDEK

27372 Calle Arroyo
San Juan Capistrano, California 92675
Contact: Rachel Struglia, PhD, AICP

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
AC	alternating current
amsl	above mean sea level
APM	applicant proposed measure
AQMP	Air Quality Management Plan
BESS	Battery Energy Storage System
bgs	below ground surface
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH4	methane
CHRIS	California Historical Resources Information System
CNEL	community noise equivalent
CO	carbon monoxide
CO2	Carbon dioxide
CO2e	CO2 equivalent
CRHR	California Register of Historical Resources
dB	decibels
dBA	A-weighted decibel
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
GHG	GHG
GWP	global warming potential
HCP	Habitat Conservation Plan
I	Interstate
KOP	Key Observation Points
KV	kilovolt
kW	kilowatt
kWh	kilowatt-hours
LACM	Natural History Museum of Los Angeles County
Ldn	day–night average noise level
Leq	equivalent noise level over a given period
LST	localized significance threshold
LUC	Land Use Covenant
MLD	most likely descendant

Acronym/Abbreviation	Definition
MM	Mitigation Measure
MND	mitigated negative declaration
MSHCP	Multiple Species Habitat Conservation Plan
MT	metric ton
MW	megawatt
N2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO2	nitrogen dioxide
Nox	oxides of nitrogen
O3	ozone
PM10	particulate matter with an aerodynamic diameter less than or equal to 10 microns
PM2.5	particulate matter with an aerodynamic diameter less than or equal to 2.5 microns
PPV	peak particle velocity
PRIMP	Paleontological Resources Impact Mitigation Program
PV	photovoltaic
RCCD	Riverside Community College District
RCFD	Riverside County Fire Department
RCNM	Roadway Construction Noise Model
RTP	Regional Transportation Plan
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SLF	Sacred Lands File
SOx	sulfur oxides
SR	State Route
SRA	source-receptor area
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TCR	tribal cultural resource
VCA	voluntary cleanup agreement
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	volatile organic compounds

1 Introduction

1.1 Project Overview

This chapter describes the proposed Riverside Community College District Solar Plan Project (Project or Proposed Project), its location, objectives, and characteristics, and its intended uses. The Proposed Project would involve the construction and operation of photovoltaic (PV) solar arrays at two Riverside Community College District (RCCD or District) campuses, Norco College and Moreno Valley College. The Norco College Project component would consist of a single ground-mounted fixed tilt solar array approximately 6 acres in size and associated underground lines and Battery Energy Storage System (BESS). The Moreno Valley College Project component would consist of a ground-mounted fixed tilt solar array approximately 2.7 acres in size. Both PV systems would include new underground lines. The construction of the Project is scheduled to begin in late 2022 and be completed in mid-2023. The construction period for each Project site will be approximately 6 months, with construction at the Norco College Project site beginning approximately 2 months before the Moreno Valley College Project site.

1.2 California Environmental Quality Act Compliance

Riverside Community College District is the California Environmental Quality Act (CEQA) lead agency responsible for the review and approval of the Riverside Community College District Solar Plan Project. Based on the findings of the Initial Study for the Project, the District has determined that a mitigated negative declaration (MND) is the appropriate environmental document to prepare in compliance with CEQA (PRC Section 21000 et seq.). As stated in CEQA, Section 21064.5, an MND may be prepared for a project subject to CEQA when an initial study has identified no potentially significant effects on the environment.

This MND has been prepared for the District and complies with Section 15070(a) of the CEQA Guidelines (14 CCR 15000 et seq.). The purpose of the MND and the Initial Study Checklist (see Chapter 3 of this MND) is to determine any potentially significant impacts associated with the Proposed Project and to incorporate mitigation measures into the project design as necessary to reduce or eliminate the significant or potentially significant effects of the Project.

1.3 List of Discretionary Actions

Approval of the following discretionary actions will be required to implement the Proposed Project:

- Approval of the Project by the District Board of Trustees
- Southern California Edison approval of Interconnection Request

1.4 Other Agencies that May Use the Mitigated Negative Declaration

This MND is also intended for use by responsible agencies that may have an interest in reviewing the Project. The following responsible agencies for the Project will therefore be involved in the review of this document:

- Department of Toxic Substances Control

1.5 Public Review Process

In accordance with CEQA, a good-faith effort has been made during the preparation of this MND to contact affected agencies, organizations, and persons who may have an interest in this Project.

In reviewing the MND, public agencies and the interested public should focus on the sufficiency of the document in identifying and analyzing the Project's possible impacts on the environment. A copy of the Draft MND and related documents are available for review at the front desk of the District (see address below) between the hours of 8:00 a.m. to 5:00 p.m., Monday through Thursday, and 8:00 a.m. through 4:30 p.m. Friday.

Riverside Community College District
3801 Market Street
Riverside, California 92501

Comments on the MND may be made in writing before the end of the public review period. A 30-day review and comment period from October 7, 2022, to November 7, 2022, has been established in accordance with Section 15072(a) of the CEQA Guidelines. Following the close of the public comment period, the District will consider this MND and comments in determining whether to approve the Proposed Project.

Written comments on the MND should be received at the following address by 5:00 p.m., November 7, 2022.

Riverside Community College District
3801 Market Street, 3rd Floor
Riverside, California 92501
Contact: Hussain Agah, Associate Vice Chancellor, Facilities, Planning and Development
Telephone: 951.222.8871
Email: Hussain.agah@rccd.edu

2 Project Description

2.1 Project Location

The Proposed Project is located on two RCCD campuses within Riverside County; Norco College and Moreno Valley College. Norco College is regionally accessible by the Interstate (I) 15 and State Route (SR) 91 freeways in the City of Norco (Figure 1, Project Location). Moreno Valley College is regionally accessible by the I-215 and SR 60 freeways in the City of Moreno Valley (Figure 1). The two Project sites are currently vacant.

2.2 Project Background and Objectives

In 2011, the RCCD Board of Trustees adopted Board Policy 5775–Sustainability & Environmental Responsibility which states that "The Riverside Community College District recognizes its responsibility to exercise environmental stewardship and to economically manage the use of buildings, land, and natural resources. It is the intent of the District to create a set of operating principles and guidelines in the execution of its responsibilities to facilities' design and operation; campus management and teaching and learning, thereby minimizing negative environmental impacts of activities under its control and oversight" (RCCD 2011). In alignment with Board Policy 5775, RCCD has developed a solar planning initiative to invest in on-campus PV systems. The Proposed Project would be developed under the solar planning initiative adopted by the Board in 2021 and in support of the goals of Board Policy 5775. Specifically, the objectives of the Proposed Project are as follows:

- Support RCCD's Board of Trustees Board Policy 5775—Sustainability & Environmental Responsibility
- Invest RCCD resources in on-campus PV systems to help RCCD achieve its goals of economic, social, and environmental sustainability
- Utilize undeveloped and underutilized on-campus property to further renewable energy generation
- Provide learning opportunities in new technology for students

2.3 Environmental Setting

2.3.1 Norco College Project Site

Norco College located at 2001 Third Street in Norco, California. The Project site has a General Plan land use designation (City of Norco 2012a) and zoning designation (City of Norco 2012b) of Preservation and Development. Development in the vicinity of the Project site includes City of Norco government uses and senior housing uses to the east, commercial uses to the southeast, John F. Kennedy Middle College High School to the south, the main Norco College campus to the southwest, and the United States Navy Naval Sea Systems Command to the west and north. Recently constructed projects on the Norco College campus include the Veterans Center building in the southeast portion of campus and currently a new Kinesiology and Human Performance building is being planned in the core of campus as guided by the Facilities Master Plan (RCCD 2019).

2.3.2 Moreno Valley College Project Site

Moreno Valley College located at 16130 Lasselle Street in Moreno Valley, California. The Project site has a General Plan land use designation (City of Moreno Valley 2020a) and zoning designation (City of Moreno Valley 2020b) of Public Facilities. Land uses surrounding the Project site consists of two Eastern Municipal Water District water tanks immediately north of the Project site, open, hilly land to the north, east and south, a park and playground associated with the college to the southwest, and the main college campus to the west. More broadly, Laselle Elementary school is to the south of the college campus and residential uses are located to the west north, and south of the campus. A new Welcome Center and Student Services building has been recently constructed in the center of campus as depicted in the Comprehensive Master Plan (RCCD 2021). Approximately half the campus, including the Project site, is identified as being within a Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE 2022).

2.4 Project Characteristics

2.4.1 Norco College Solar

The Norco College Project component includes installation of a 2.1-megawatt (MW), ground-mounted fixed tilt PV array approximately 6 acres in size on the undeveloped hillside to the northeast of the main Norco College campus (Figure 2A, Project Site–Norco College). The Project includes installation of a new alternating current (AC) station at the southwest corner of the array and a 12-kilovolt (KV) underground transmission line running southwest from the AC station to a new battery storage/battery switchboard that will be located on the site of an existing fuel cell, which will be demolished as part of the Project. Electricity will run from the new 500 kilowatt (kW) battery site through an existing 12KV underground transmission line along the northern edge of the main campus. The existing line will connect to a new Project 12KV underground transmission line at the location of a new power pole at the northwest corner of the main campus. The new line will run along the western edge of the main campus where it will connect to a new AC station at the southwest corner of campus which will then be connected to new AC conduit for an EV charger switchboard (Figure 3A, Site Plan – Norco College).

Norco College, including the Project site, is encumbered with a Land Use Covenant (LUC). According to the covenant "hazardous substances, including antimony, cadmium, copper, lead, silver, zinc, dioxins, and furans remain at the Property above levels acceptable for unrestricted land use. Additionally, the Property has not been fully surveyed and characterized to determine if other hazardous substances above levels acceptable for unrestricted land use also remain in soils, soil gases, or groundwater." (RCCD and DTSC 2016). A Historical Hazards Evaluation conducted to assess the property did not identify any historical sites of contamination that overlap with the Project site (Dudek 2021a). The nearest historically contaminated site is a landfill site located to the south of the Project site where John F. Kennedy Middle College High School is currently located. Remediation of this area was completed in 2005 for construction of the school. However, one of the requirements of the LUC is that a soil management plan, approved by the Department of Toxic Substances Control (DTSC), is required prior to disturbance of soils at or below 4 feet below ground surface (bgs) in developed areas or any soils in undisturbed areas on the campus. Any soils brought to the surface must be managed according to applicable provisions of state and federal law. The Proposed Project involves ground disturbing activities. The depth of subsurface disturbances for installation of the PV array is estimated to be 8 feet below grade for the single footing. As such, the Project will be required to comply with the applicable restrictions outlined in the LUC. The subject property is also currently under a voluntary cleanup agreement (VCA), initiated in 2011 and updated in 2019 (CalEPA 2019). Multiple requirements are included in the VCA, such as requirements for completion of work plans, health risk assessments, soil management plans, and remediation work plans for activities conducted on the subject property which require excavation/disturbance of soil. These requirements are applicable to the Proposed Project. Conditional approval of the Subsurface Investigation Report completed for the Proposed Project was granted by DTSC on October 4, 2022.

2.4.2 Moreno Valley College Solar

The Moreno Valley College Project component includes installation of a 0.9-MW ground-mounted fixed tilt PV array approximately 2.7 acres in size on undeveloped land on the easternmost edge of the campus, including a solar switchboard at the northern edge of the array (Figure 2B, Project Site–Moreno Valley College). The array will tie into an existing 12KV underground transmission line via a new 12KV underground transmission line running west from the new switchboard and a 400 kW battery storage facility. This Project component includes installation of a new battery storage/switchboard at the northern edge of the main campus and a new 12KV underground transmission line connecting the new battery storage/switchboard to new PV canopies in the parking lots which are not part of the Proposed Project (Figure 3B, Site Plan – Moreno Valley College).

2.4.3 Proposed Construction

Construction of the Proposed Project would include site preparation, grading, paving, boring and conduit installation, installation of racking and other mechanical components, PV panel installation and other electrical component installation (AC stations, battery storage/switchboards, power pole). Construction is anticipated to begin in late 2022 and end in mid-2023. The construction duration of approximately 6 months for each Project site, with the Norco College Project component starting construction approximately 2 months before the Moreno Valley College Project component. Construction equipment would be staged on site adjacent to the areas of construction. The approximate maximum depth of disturbance would be approximately 8 feet.

Construction activities would typically occur Monday through Friday during daytime hours, beginning no earlier than 7:00 a.m. and generally ending by 5:00 p.m. Personnel may arrive to the site prior to 7:00 a.m. to conduct safety meetings and other preconstruction activities, but no noise-generating construction activities would occur before 7:00 a.m. Likewise, personnel may remain on site after 5:00 p.m., conducting closeout activities, but noise-generating construction activities would generally not occur after 5:00 p.m., except under unusual circumstances. Construction on Saturdays may also occasionally be necessary but is generally not anticipated. On Saturdays, noise-generating construction activities would not begin before 8:00 a.m. and would normally end by 5:00 p.m. No construction work would occur on Sundays or federal holidays, except under emergency conditions.

2.4.4 Proposed Operation

Operation of the Proposed Project will require periodic maintenance including inspection and preventive maintenance, as well as system washing. Annual servicing is expected to require up to three days of work per site on an annual basis with two workers per maintenance event. System washing will occur with three or four workers twice annually per site for 2 to 4 days per washing event. Together, the anticipated annual maintenance is expected to be up to 11 business days per site per year.

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3 Initial Study Checklist

1. Project title:

Riverside Community College District Solar Plan Project

Lead agency name and address:

Riverside Community College District
3801 Market Street
Riverside, California 92501

Contact person and phone number:

Hussain Agah, MSCE, PMP, CCM, LEED AP BD+C
Associate Vice Chancellor, Facilities Planning & Development
951.222.8871

4. Project location:

- Norco College, 2001 Third Street, Norco California 92860
- Moreno Valley College, 16130 Lasselle Street, Moreno Valley California 92551

5. Project sponsor's name and address:

Riverside Community College District
3801 Market Street
Riverside, California 92501

6. General plan designation:

- Norco College Project Site: Preservation and Development
- Moreno Valley College Project Site: Public Facilities

7. Zoning:

- Norco College Project Site: Preservation and Development
- Moreno Valley College Project Site: Public Facilities

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

See Chapter 2 of this document

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

   See Section 2.3 of this document

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

    - Approval of the Project by the District Board of Trustees.
    - Southern California Edison approval of Interconnection Request

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

    See Section 3.18 of this document

Environmental Factors Potentially Affected

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

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

Determination (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

HUSSAIN AGHA

Signature HUSSAIN AGAH

OCTOBER 6, 2022

Date

Evaluation of Environmental Impacts

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

3.1 Aesthetics

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

3.1.1 Environmental Setting

Existing Conditions

The following discussion is based on the Visual Resources Constraints Analysis for Districtwide Solar Planning Initiative Project, Riverside County, California prepared by Dudek in September 2021 (Dudek 2021b), as well as additional photographic field investigations and visual simulations completed by DLR Group in August 2022. The following discussion also focuses on work areas included in the project and does not include a discussion of existing conditions associated with the Norco and Moreno Valley College campuses as a whole.

Norco College

Work areas on the Norco College campus primarily consist of a 6-acre, undeveloped hillside area to the northeast of the main campus that would support a future solar array, a BESS component on a developed portion of the main campus, and an EV charger switchboard (and associated AC conduit) in the southwest corner of the main campus. New 12 kV underground lines are also included and generally connect these areas to one another and/or to power sources.

With regard to the proposed 6-acre solar array, the underlying terrain lightly slopes northward, with grassland habitat dominating most of the rectangular area. Similar grassland habitat is found to the immediate west, north and south of this area; however, off-campus development further away consists of the multi-structure campus of

Naval Sea Systems Command (located to the west) and one- and two-story commercial and office style development in the City of Norco.

Due to the somewhat remote location of the solar array area in relation to public roads, the presence of federal lands to the west and north, and private development to the east, the availability of available public views to the proposed solar array area is generally limited to partially screened views from a short, public segment of Fourth Street and westerly views from nearby parking lots to the east.

As noted above, the proposed BESS component is located on the flat, developed/paved northerly portion of the main campus which currently supports the Main Plant, Operations Center, and campus staff parking. With the exception of persons associated with Norco College, the BESS site is not visible to the off-campus public.

Lastly, the EV charger switchboard and associated AC conduit are primarily proposed to be located to the immediate west of the Wilfred J. Airey Library and east of campus Parking Lot D. More specifically, the proposed switchboard is proposed in an existing shrub and tree vegetated planting area bordered by concrete sidewalk and paved parking and conduit would be installed beneath existing portions of the nearby parking lot. Views to the switchboard would generally be limited to on-campus students and personnel in the immediate adjacent area.

Scenic Vistas

While the City's General Plan Open Space Element identifies local hills as "particularly valuable landscape features" (City of Norco 1986), there are no local scenic vistas designated as such by the City of Norco in the immediate area surrounding the Norco College campus. Prominent local terrain including Beacon Hill (1,017 feet above mean sea level [amsl]; located approximately 1.1 miles to the north of campus) and Norco Mountain (located nearly 2 miles to the east of campus) may receive some use based on information on a publicly accessible trails database (alltrails.com 2021) and given their elevation, these locations ostensibly provide opportunities for long, scenic views of the surrounding area. Lastly, partial views to the distant San Gabriel Mountains are occasionally available from Third Street along the campus frontage; however, overall visibility of these regional features is regularly interrupted by intervening campus landscaping.

Scenic Highways

The nearest state scenic highways, SR 91 (from Route 55 near Santa Ana Canyon to I-15) and I-15 (from SR 76 to SR 91) are located 2.4 and 2.5 miles away, respectively, from the Norco College campus (Caltrans 2021).

Visual Character and Quality

The general visual character and quality of the proposed work areas on the Norco College campus is described above under the Norco College heading.

Light and Glare

Existing source of light and glare near the proposed work areas area consists of interior and exterior lighting (e.g., parking lot lighting, pathway lighting, lighting mounted on building exteriors, etc.) on the Norco College campus, streetlight and sidewalk lighting off Third Street, and buildings and grounds lighting on the Naval Sea Systems Command campus. In addition, building and parking lot lighting associated with warehouse and office development to the east of the proposed solar array area contributes to nighttime illumination levels in the local area.

Other than overhead lighting sources (e.g., streetlight and sidewalk lighting), sources of glare appear to be limited to glass in building construction.

Moreno Valley College

Work areas on the Moreno Valley College campus primarily consist of an approximately 2.7-acre, undeveloped area on the easternmost edge of campus (and upslope of adjacent College Park) that would support a future solar array, a BESS component on a developed portion of the campus located to the north of the library, and an EV charger switchboard (and associated AC conduit) to the south of College Drive in campus Parking Lot B. New 12 kV underground lines are also included and generally connect these areas to one another and/or to power/electrical generating sources such as photovoltaic canopies in Parking Lot B. The future solar array area is surrounded by undeveloped hilly terrain to the north, east, and south, College Park to the southwest, and a previously graded yet undeveloped portion of the campus (and an adjacent surface parking lot) to the west and lightly developed portions of the campus to the northwest. Two large water storage tanks are located less than 200 feet northeast of this work area and public trails border the area to the north, east, and south. The BESS component encompasses a small, 0.04-acre area that consists of mostly of barren, rocky soils with a canopy of mature pine trees (*Pinus* sp.). With the exception of the nearby internal campus walkway and maintenance road, the BESS area is not visible to the off-campus public.

Scenic Vistas

According to the City of Moreno Valley General Plan Conservation Element, views of mountains and southerly views the valley comprise the major aesthetic resources within the City (City of Moreno Valley 2006a). Specific scenic vistas are not designated and/or identified in the City of Moreno Valley General Plan; however, scenic views to the north from trails and peaks in the Bernasconi Hills are available to trail-based recreationists near the Moreno Valley College campus. Specifically, the peak of the most prominent landform in the nearby hilly terrain, Mount Russell, sits at approximately 2,704 feet amsl and is located over 3 miles to the northeast of the proposed solar array area. Terri Peak (2,569 feet amsl) is located 0.85 mile to the southeast of the solar array area and is accessible via a 9-mile-long, public multiuse trail circling Lake Perris and climbing the adjacent mountainous terrain contained within the Lake Perris State Recreation Area. Views from Terri Peak tend to be long and generally extend north to the San Bernardino and San Gabriel Mountain ranges. As public trails to Mount Russell were not observed during the preparation of the Visual Constraints Report, effects to existing views from Mount Russell are not evaluated in this environmental document.

Scenic Highways

The nearest state scenic highway, SR 74 (from I-5 near San Juan Capistrano to SR 111 in Indian Wells), is located more than 7 miles from the Moreno Valley College campus (Caltrans 2021).

Visual Character and Quality

The general visual character and quality of the proposed work areas on the Moreno Valley College campus is described above under the Moreno Valley College heading.

Light and Glare

Existing source of light and glare in the surrounding area consists of campus parking lot lighting, exterior mounted campus building lighting, and interior and exterior lighting elements associated with residential neighborhoods to the north (approximately 0.2 miles away) and southwest (approximately 0.2 miles away) of the proposed solar array. Similar lighting elements are located off-campus to the west and south of campus Parking Lot B. Other than overhead lighting sources (e.g., streetlight and sidewalk lighting), sources of glare appear to be limited to glass in building construction.

3.1.2 Regulatory Setting

City of Norco General Plan

The following policies of the Norco General Plan pertain to the protection of aesthetics/visual themes and/or promotion of distinct themes and thus, are applicable to the Project:

- **Policy 2.4.1e.** New office, research, and industrial projects shall be developed in accordance with approved guidelines and/or within height limits to minimize encroachment into expansive views of the horizon.
- **2.6.1 Land Form Conservation Policy.** In areas not already designated for permanent open space in the Conservation or Open Space Easements, land development should be done in such a manner that the City's primary land forms and scenic vistas are protected.

City of Norco Municipal Code

Chapter 18.41 of the Norco Municipal Code governs the local architectural review process. Among many reasons (a number of which are identified in Municipal Code Section 18.41.02), the intent of architectural review is to protect the City's natural setting of rural, scenic, and historical beauty and relatedly, the community development in an orderly manner with compatible uses. However, because architectural review is chiefly concerned with building architecture and is not seeming applicable to ground- or roof-mounted solar generating systems, Chapter 18.41 of the Norco Municipal Code is not particularly relevant to the Project and is thus not further discussed.

City of Moreno Valley General Plan

The following policies of the Moreno Valley General Plan (City of Moreno Valley 2006a) concern the preservation of scenic views and pertain to the protection of aesthetics/visual themes and/or promotion of distinct themes and thus, are applicable to the Project:

- **Policy 7.7.1.** Discourage development directly upon a prominent ridgeline.
- **Policy 7.7.2** Require new electrical and communication lines to be placed underground.

City of Moreno Valley Municipal Code

Title 9, Chapter 9.16 Design Guidelines (Article IV Applications for Lighting) establishes local requirements for exterior lighting. Included in the requirements are the encouragement of energy efficiency, high-sensitivity fixture design that complements the overall design theme of the project in which they are located, and the concealment of high-intensity security lighting with landscaping or building architectural elements.

3.1.3 Impact Analysis

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

Less than Significant Impact. Despite the presence of elevated landforms within 2 miles of the Norco College campus, project development would not significantly impair or degrade available scenic views from either Beacon Hill or Norco Mountain. Due to distance, the elevated vantage points assumed to be available from Beacon Hill and Norco Mountain which are substantially higher in elevation than the Norco College campus, and the vast geographic area ostensibly visible from these landforms, ground-based development on the Norco College campus would not result in view blockage or substantial interruption of available views. While proposed solar arrays may be visible from both Beacon Hill and Norco Mountain (neither the BESS or EV charger switchboard would be visible on account of intervening development and terrain), development of the 6-acre site would not be visually prominent as experienced from these locations (both located over 1 mile away) and would instead blend into the existing urban setting of the I-15 corridor. Therefore, impacts to scenic vistas associated with development of the project on Norco College would be **less than significant.**

Despite the elevated vantage point available at nearby Terri Peak (approximately 0.85 miles to the southeast of the proposed solar array area), the peak is situated toward the southern extent of a relatively broad expanse of rolling to flat terrain. As a result, neither Moreno Valley College nor project development are visible from the peak. As such, installation and operation of project components would not result in adverse effects to existing views from Terri Peak. Thus, impacts would be **less than significant.**

Short segments of the public trail that borders the proposed solar array area offers partially blocked to relatively unimpeded views of the landscape to the immediate north (including the solar array area and nearby water storage tanks). While the trail offers elevated vantage points and relatively long-distance views to the west, views towards the proposed solar array shortened by the presence of hilly terrain and water storage tanks to the north. Therefore, because proposed solar array development would not substantially block or impair existing westerly views from the trail (and because users of the trail would be mobile and offered dynamic views of the surrounding landscape), impacts to scenic vistas associated with proposed solar array development would be **less than significant.**

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

No Impact. Due to distance and intervening features including development, terrain, and vegetation, views to the Norco College campus (including potential work areas considered in this analysis) are not available from the nearest state scenic highways (i.e., SR 91 and I-15). Thus, **no impact** to scenic resources within a designated state scenic highway would occur as a result of proposed development on the Norco College campus.

Due to distance between the college campus and the nearest state scenic highway (approximately 7 miles) and the presence of intervening features including development, terrain, and vegetation, views to the Moreno Valley College campus (including the BESS and proposed solar array) would not be available from SR 74. Thus, **no impact** to scenic resources within a state scenic highway would occur as a result of proposed development on the Moreno Valley College campus.

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

Less than Significant Impact. According to the California Department of Finance, the estimated January 1, 2022, population of Norco was 24,909 persons (CDF 2022). While on its own the City of Norco would not be considered an "urbanized area" pursuant to Public Resources Code Section 21071 (a)(1), adjacent City of Riverside had an estimated January 1, 2022, population of 317,847 persons. Thus, when combined with the population of an adjacent incorporated city, the City of Norco is an urbanized area in accordance with Public Resources Code Section 21071 (2). Regarding Moreno Valley College and according to the California Department of Finance, the City of Moreno Valley had an estimated January 1, 2022, population of 209,407 persons (CDF 2022). Therefore, the City of Moreno Valley is considered an urbanized area pursuant to Public Resources Code Section 21071 (a)(1).

To aid in the assessment of impacts concerning conflicts with scenic quality requirements and more generally, contrasts with visual character, Key Observation Points (KOPs) were identified and function as representative public vantage points from which visual change associated with development of the project would be experienced. To provide a comparison of existing and proposed aesthetic conditions, existing photographs of the landscape as viewed from KOPs and visual simulations of project development as viewed from KOPs were taken and prepared. Three KOPs each were established for the Norco and Moreno Valley College campuses. The location of KOPs associated with Norco College is depicted on Figure 4, Key Observation Points – Norco College, and those developed for Moreno Valley College are shown on Figure 5, Key Observation Points–Moreno Valley College. Existing and proposed conditions are presented on Figures 6 and 7 (for Norco College) and Figures 8, 9, and 10 (for Moreno Valley College).

Regulations Governing Scenic Quality

As detailed in Section 3.1.2, Regulatory Setting, there are a limited number of scenic quality regulations in City of Norco and City of Moreno Valley planning documents. Further, implementation of the Project would not conflict with any of the identified regulations in the Norco General Plan, the Moreno Valley General Plan, and the Moreno Valley Municipal Code. With regard to Norco General Plan Policy 2.4.1e, ground-mounted solar panels and associated infrastructure are not considered to be industrial as these components/features are installed atop structures on a variety of land use designations (i.e., residential, commercial, etc.). In addition, and as demonstrated in Figures 6 and 7, the proposed ground-mount system on Norco College would be partially to fully blocked from public views by intervening development (i.e., fencing and parking lot features), and vegetation/trees. And due to the presence of these features in the landscape, expansive views of the horizon and across the Project site are generally not available from local roads in the area surrounding Norco College. Regarding Moreno Valley College and General Plan Policy 7.7.1, the proposed ground-mount solar system would not be situated atop a prominent ridgeline and a new 12 kV electrical line associated with the Project is proposed to be installed underground (consistent with Policy 7.7.2). Lastly, any permanent lighting installed at Moreno Valley College and associated with the Project (no high-intensity security lighting is anticipated) would comply with applicable City of Moreno Valley lighting regulations.

Thus, proposed solar development at Norco College and Moreno Valley College would not conflict with regulations governing scenic quality and impacts would be **less than significant.**

Visual Character

Norco College

Conceptual digital renderings of proposed ground-mounted solar development at Norco College are depicted on Figures 6 and 7. As demonstrated in the exhibits, solar panels and associated fencing would be visible from the nearby parking lot and from a short segment of westbound Fourth Street near the entrance to United States Navy Naval Sea Systems Command. While the undeveloped character of the site would be fundamentally altered by construction and operation of the Project, public views to the future solar development would be somewhat limited and anticipated contrasts in form, line and color between the existing grass-covered terrain and solar panels (and fencing) would be muted by intervening vegetation (i.e., trees). Figures 6 and 7 depict the overall minor changes to the characteristic form, line, and color in the landscape. Based on the visual change depicted in the digital renderings and the overall limited visibility of ground-mounted solar development from public vantage points in the surrounding area and based on the low-vertical profile of solar panels which would result in partially obscured views of panels from off-site locations, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Impacts would be **less than significant.**

Moreno Valley College

Conceptual digital renderings of the proposed ground-mounted solar development at Moreno Valley College as experienced from nearby College Park (and trail) are included as Figures 8, 9, and 10. As depicted on Figure 8, future solar development would be detectable in northeasterly views from near the “center” of College Park; however, the prominence of solar panels and fencing would be somewhat subdued by distance (solar development would be sited approximately 750 feet from View A; see Figure 8). Further and despite its comparatively higher topographic elevation, future solar development would not substantially block or otherwise degrade the quality of existing views to scenic regional and/or local terrain. Compared to the visual effects anticipated at View A, at View B (i.e., College Park playground) future solar panels would be nearly 0.2 miles away and their visual prominence would be further reduced due to a wider available view and partial blockage of the view to proposed solar panels (see Figure 9). Lastly and while located in closer proximity to the solar development than either View A or View B, perceptible Project-related contrasts at View C would be weak due to partial blockage of solar panels by perimeter fencing and intervening terrain and backscreening of solar panels by aboveground water storage reservoirs as shown on Figure 10. Therefore, based on the visual change depicted in the digital renderings, implementation of the Project at Moreno Valley College would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Impacts would be **less than significant.**

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

Norco College

Less than Significant Impact. Limited lighting is anticipated to be installed within the proposed work areas. Some lighting may be required to accommodate as needed and/or emergency evening and nighttime work, but the majority of construction and operational phase maintenance activities would occur during daylight hours and would not require the use of overhead or handheld lighting elements. Regarding glare, BESS structures are generally constructed of finished steel and exteriors are painted based on the preference of the client. As such, battery storage containers are not anticipated to generate problematic glare that would be a nuisance to motorists and residents in the surrounding area. Lastly, proposed solar arrays are proposed to be installed on the moderate, east facing slope in the northeastern portion of the Norco College campus. Assuming a southerly orientation of panels, Project-generated glare (if any) would not be reflected to the north towards Fourth Street and the presence of undulating terrain to the south would prohibit views to the panels from Third Street. While partial views to solar arrays would be available to the east, these areas comprise private parking lots associated with commercial businesses and are not considered to be sensitive from a CEQA perspective. Given these factors, operation of the proposed solar array would not create a new source of substantial glare that would adversely affect daytime views. Impacts would be **less than significant.**

Moreno Valley College

Less than Significant Impact. Limited lighting is anticipated to be installed within the proposed work areas. Some lighting may be required to accommodate as needed and/or emergency evening and nighttime work, but the majority of construction and operational phase maintenance activities would occur during daylight hours and would not require the use of overhead or handheld lighting elements. As previously stated for BESS development on the Norco College campus, these components are generally constructed of finished steel with painted exteriors which limit potential for materials to create/produce glare. Given the proposed location, BESS containers would not be visible to the members of the off-campus public. Thus, no element of BESS (structures or otherwise) would be visible to local motorists or residents. Due to their elevated location in relation to the solar panels, users of the Bernasconi Hills to Terri Peak Trail (i.e., the trail bordering the solar array site) may experience glare. However, modern solar panels are designed to be highly absorptive of incoming light and panel surfaces feature anti-reflective coatings to further minimize the potential for creation of glare. Also, future panels would generally be oriented to the south and any generated glare reaching the trail would be received by a low volume of transient trail users (the trail is assumed to receive light use throughout the year). Given these factors, operation of the proposed solar array would not create a new source of substantial glare that would adversely affect daytime views. Impacts would be **less than significant.**

3.2 Agriculture and Forestry Resources

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

No Impact. The Project sites are not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as mapped by the Farmland Mapping and Monitoring Program (CDOC 2021). There is Farmland of Local Importance located near the Moreno Valley College Project site (approximately 0.2 miles north and 0.4 miles southwest), but it would not be impacted by the Proposed Project. Therefore, the Proposed Project would not convert Farmland to non-agricultural uses and **no impact** would occur.

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

No Impact. Neither Project site is zoned for agricultural use. The Norco College Project site has a zoning designation of Preservation and Development, and the Moreno Valley College Project site has a zoning designation of Public Facility. Both Project sites are on publicly owned college campuses that are not currently under Williamson Act contracts would not be suitable sites for agricultural preservation. Therefore, the Proposed Project would not conflict with zoning for agricultural uses or Williamson Act Contracts and **no impact** would occur.

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

No Impact. Neither Project site contains forest land or is zoned as forest land. The Norco College Project site has a zoning designation of Preservation and Development, and the Moreno Valley College Project site has a zoning designation of Public Facility. There is no forest land or timberland in the vicinity of either Project site. Therefore, the Proposed Project would have not conflict with forest land or timberland and **no impact** would occur.

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

No Impact. As described in 3.2 (c), neither Proposed Project site contains forest land. Therefore, the Proposed Project would not result in the loss or conversion of forest land and **no impact** would occur.

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

No Impact. As described in 3.2 (a) through (d), the Proposed Project sites do not contain agricultural or forest land and would not convert any agricultural or forest uses and **no impact** would occur.

3.3 Air Quality

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

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

Less Than Significant Impact. The Project site is located within the South Coast Air Basin (SCAB), which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County, and is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD).

SCAQMD administers SCAB's Air Quality Management Plan (AQMP), which is a comprehensive document outlining an air pollution control program for attaining all California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recent adopted AQMP for the SCAB is the 2016 AQMP (SCAQMD 2017), which was adopted by SCAQMD's Governing Board in March 2017. The 2016 AQMP focuses on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities seeking to promote reductions in greenhouse gases (GHGs) and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). Notably, the 2022 update to the AQMP is currently being developed but has yet to be adopted.

The purpose of a consistency finding with regard to the AQMP is to determine if a project is consistent with the assumptions and objectives of the regional air quality plans, and if it would interfere with the region's ability to comply with federal and state air quality standards. SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD CEQA Air Quality Handbook. These criteria are the following (SCAQMD 1993):

- Whether the Project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- Whether the Project would exceed the assumptions in the AQMP or increments based on the year of Project buildout and phase.

To address the first criterion, Project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed under Section 3.3(b). Detailed results of this analysis are included in Appendix A, CalEEMod Emissions Outputs. As presented in Section 3.3(b), construction and operation of the Project would not generate criteria air pollutant emissions that exceed SCAQMD's thresholds.

The second criterion regarding the Project's potential to exceed the assumptions in the AQMP or increments based on the year of Project buildout and phase is primarily assessed by determining consistency between the Project's land use designations and its potential to generate population growth. In general, projects are considered consistent with, and not in conflict with or obstructing implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016). This document, which is based on general plans for cities and counties in the SCAB, is used by SCAQMD to develop the AQMP emissions inventory (SCAQMD 2017).[1] The SCAG 2016 RTP/SCS and the associated Regional Growth Forecast are generally consistent with the local plans;[2] therefore, the 2016 AQMP is generally consistent with local government plans.

The Project is consistent with the existing land use designation and implementation of the Project would not generate an increase in growth demographics that would conflict with existing projections within the region. Accordingly, the Project is consistent with the SCAG RTP/SCS forecasts used in the SCAQMD AQMP development.

In summary, based on the considerations presented for the two criteria, impacts relating to the Project's potential to conflict with or obstruct implementation of the applicable AQMP would be **less than significant.**

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

Less Than Significant Impact. A quantitative analysis was conducted to determine whether proposed activities might result in emissions of criteria air pollutants that may cause exceedances of the NAAQS or CAAQS, or cumulatively contribute to existing nonattainment of ambient air quality standards. Criteria air pollutants

1 Information necessary to produce the emissions inventory for the SCAB is obtained from SCAQMD and other governmental agencies, including the California Air Resources Board (CARB), California Department of Transportation (Caltrans), and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

2 Demographics from the 2016 RTP/SCS are still applicable for the purposes of the air quality analysis, since those are included and used in the current AQMP.

include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide, particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}; course particulate matter), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$; fine particulate matter), and lead. Pollutants that are evaluated herein include volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), which are important because they are precursors to O_3, as well as CO, sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$.

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

SCAQMD has adopted thresholds to address the significance of air quality impacts resulting from a project. A project would result in a substantial contribution to an existing air quality violation of the NAAQS or CAAQS for O_3, which is a nonattainment pollutant, if the project's construction emissions would exceed SCAQMD's VOC or NO_x significance thresholds shown in Table 1. These emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly, and the effects of an individual project's emissions of O_3 precursors (VOC and NO_x) on O_3 levels in ambient air cannot be reliably and meaningfully determined through air quality models or other quantitative methods. The SCAB is also nonattainment for the state PM_{10} and federal and state $PM_{2.5}$ standards.

Table 1. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	**Construction (Pounds per Day)**	**Operation (Pounds per Day)**
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic and acute hazard index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[c]		
  NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)	

Table 1. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	**Construction (Pounds per Day)**	**Operation (Pounds per Day)**
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state /federal)	
PM_{10} 24-hour average PM_{10} annual average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation) 1.0 μg/m³	
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction)[d] 2.5 μg/m³ (operation)	

Source: SCAQMD 2019.
Notes: SCAQMD = South Coast Air Quality Management District; VOCs = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; NO_2 = nitrogen dioxide; ppm = parts per million; μg/m³ = micrograms per cubic meter.

[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the Project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.
[b] TACs include carcinogens and non-carcinogens.
[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.
[d] Ambient air quality threshold is based on SCAQMD Rule 403.

In addition to the emission-based thresholds listed in Table 1, SCAQMD also recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the Project as a result of construction activities. Such an evaluation is referred to as a localized significance threshold (LST) analysis. The LST analysis focuses on construction equipment and does not include mobile sources. Therefore, the LST analysis only applies to the construction equipment on site, not the worker vehicles, vendor trucks, or haul trucks. For project sites of 5 acres or less, the SCAQMD LST Methodology (SCAQMD 2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing Project-specific dispersion modeling. Based on the Project-specific equipment list, the Project would disturb approximately 1.5-acres on a daily basis at each campus site, so it is appropriate to use the lookup tables for the LST evaluation.

The LST significant thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for $PM_{2.5}$ is intended to ensure that construction emissions do not contribute substantially to existing exceedances of the $PM_{2.5}$ ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source-receptor area (SRA) in which the Project is located
- Size of the Project site
- Distance between the Project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The Norco College site is located in SRA 22 (Norco/Corona) and the Moreno Valley College site is located in SRA 24 (Perris Valley). LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. As a conservative comparison, the worst-case LST values (i.e., for a 1-acre site and receptor distance of 25 meters) from the SCAQMD lookup tables for SRA 22 and SRA 24 were used in the analysis and are shown in Table 2.

Table 2. Localized Significance Thresholds for Construction of the Project Sites

Pollutant	Threshold (pounds/day)
Norco College Site – SRA 22 (Norco/Corona)	
NO_2	118
CO	674
PM_{10}	4
$PM_{2.5}$	3
Moreno Valley College Site – SRA 24 (Perris Valley)	
NO_2	118
CO	602
PM_{10}	4
$PM_{2.5}$	3

Source: SCAQMD 2009.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SRA = Source Receptor Area
Localized significance thresholds were determined based on the values for a 1-acre site at 25 meters from the nearest sensitive receptor.

Construction Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from construction and operation of the Project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with construction activities and operation of a variety of land use projects, such as educational, residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the Project and its size, construction schedule, and anticipated use of construction equipment, were based on information provided by the applicant or default model assumptions if Project specifics were unavailable. The construction of the Project is scheduled to begin in late 2022 and be complete in mid-2023. The construction period for each Project site will be approximately 6 months, with construction at the Norco College Project site beginning approximately 2 months before the Moreno Valley College Project site.

The construction equipment and on-road vehicles used for estimating the construction emissions of the Project at each campus site is based on applicant-provided information and CalEEMod default values as shown in Table 3.

Table 3. Construction Scenario Assumptions for Each Campus Site

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Daily Usage Hours
	20	8	0	Graders	1	8

Table 3. Construction Scenario Assumptions for Each Campus Site

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Daily Usage Hours
Site Preparation				Rubber Tired Dozers	1	8
				Tractors/Loaders/ Backhoes	1	8
Grading	28	8	0	Graders	1	8
				Rollers	1	8
				Tractors/Loaders/ Backhoes	1	8
Boring/ Conduit	28	16	0	Crawler Tractors	1	8
				Excavators	1	8
				Rollers	1	8
				Rough Terrain Forklifts	1	8
Racking/ Other Mechanical	36	24	0	Bore/Drill Rigs	1	8
				Off-Highway Tractors	1	8
				Rough Terrain Forklifts	1	8
PV Panel Installation	36	28	0	Rough Terrain Forklifts	1	8
Other Electrical	16	4	0	Aerial Lifts	1	8
				Graders	1	8
				Skid Steer Loaders	1	8

Notes: See Appendix A for details.

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road vendor trucks and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$, PM_{10}, and $PM_{2.5}$ emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. The Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. Table 4 presents the estimated maximum daily construction emissions generated during construction of the Project at each campus site, as well as the worst-case scenario where the maximum day at each site were to overlap. Details of the emission calculations are provided in Appendix A.

Table 4. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOc	NOx	CO	SOx	PM10	PM2.5
	pounds per day					
Norco College Site						
2022	1.51	16.12	13.08	0.02	4.14	2.24
2023	0.60	6.21	7.43	0.02	0.75	0.33
Moreno Valley College Site						
2022	1.50	16.03	8.41	0.02	4.14	2.24
2023	1.29	13.56	12.93	0.02	4.01	2.12
Worst-Case Overlap						
Maximum D–y - 2022	3.01	32.15	21.49	0.05	8.28	4.48
Maximum D–y - 2023	1.90	19.76	20.36	0.05	4.76	2.45
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
The values shown are the maximum summer or winter daily emissions results from CalEEMod and provided in Appendix A. Emissions include compliance with SCAQMD Rule 403.

As shown in Table 4, the Project construction would not exceed SCAQMD's daily thresholds. Therefore, construction impacts associated with criteria air pollutant emissions would be **less than significant.**

Operational Emissions

Operations would begin in 2023. The proposed facilities would be unmanned during operations and only require infrequent maintenance activities. Annual servicing is expected to require up to 3 days of work per site on an annual basis. System washing would occur twice annually per site for 2 to 4 days per washing event. Together, the anticipated annual maintenance is expected to be up to 11 business days per site per year. These on-road emissions sources were also modeled using CalEEMod. Table 5 presents the estimated maximum daily operational emissions generated based on combined maintenance/panel washing at both campus sites concurrently. Details of the emission calculations are provided in Appendix A.

Table 5. Estimated Maximum Daily Operation Criteria Air Pollutant Emissions

Emissions Source	VOc	NOx	CO	SOx	PM10	PM2.5
	Pounds per Day					
Maintenance/Panel Washing On-Road Vehicles	0.07	0.52	0.70	<0.01	0.25	0.07
Total	**0.07**	**0.52**	**0.70**	**<0.01**	**0.25**	**0.07**
SCAQMD Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

"<0.01" means that emissions would be less than 0.01 pounds per day.
The values shown are the maximum summer or winter daily emissions results from CalEEMod and provided in Appendix A.

As shown in Table 5, the Project would not exceed SCAQMD's significance thresholds during operations. Therefore, operational impacts associated with criteria air pollutant emissions would be **less than significant.**

In considering cumulative impacts from the Project, the analysis must specifically evaluate a Project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a Project's emissions would exceed SCAQMD's significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. If a project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing the Project's cumulatively considerable contribution is if the Project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and consistency with SCAQMD's 2016 AQMP, which addresses cumulative emissions in the SCAB.

The SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the Project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. As indicated in Tables 4 and 5, Project-generated construction and operational emissions would be minimal and would not exceed SCAQMD's emission-based significance thresholds for VOC, NO_x, CO, SO_2, PM_{10}, or $PM_{2.5}$.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the Project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative.[3] However, future projects would be subject to CEQA and would require an air quality analysis and, where necessary, mitigation if the Project would exceed SCAQMD's significance thresholds. Criteria air pollutant emissions associated with construction activity of future proposed projects would be reduced through implementation of control measures required by SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

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

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

Less than Significant Impact. The Proposed Project would have a less-than-significant impact on the exposure of sensitive receptors to substantial pollutant concentrations, as discussed below.

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

Localized Significance Thresholds

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993).

Construction activities associated with the Project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria are presented in Table 6 and compared to the maximum daily on-site construction emissions at each campus site. Notably, based on the substantial distance between Norco College and Moreno Valley College, unlike the regional criteria air pollutants detailed in Tables 4 and 5, the localized emissions generated during construction would not be additive.

Table 6. Localized Significance Thresholds Analysis for Project Construction

Pollutant	Project Construction Emissions (Pounds per Day)	LST Criteria (Pounds per Day)	Exceeds LST?
Norco College Site			
NO_2	15.71	118	No
CO	11.73	674	No
PM_{10}	3.86	4	No
$PM_{2.5}$	2.16	3	No
Moreno Valley College Site			
NO_2	15.62	118	No
CO	11.69	602	No
PM_{10}	3.86	4	No
$PM_{2.5}$	2.16	3	No

Source: SCAQMD 2009.
Notes: LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
See Appendix A for detailed results.
Worst-case LSTs are shown for 1-acre project sites corresponding to an approximate distance to a sensitive receptor of 25 meters.
These estimates reflect control of fugitive dust required by Rule 403.

As shown in Table 6, the Project LST would not exceed the established significance thresholds at either campus site and, thus, would result in a less-than-significant localized impact to any proximate sensitive receptors during construction.

CO Hotspots

If traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. However, the Project would only result in a minimal and infrequent increase in vehicular trips associated with maintenance and panel washing. Therefore, the Project would not result in a CO hotspot and would result in a **less-than-significant impact.**

Toxic Air Contaminants

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

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

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Project construction would result in emissions of diesel particulate from heavy construction equipment and trucks accessing the site. Diesel particulate matter is characterized as a TAC by the State of California. The Office of Environmental Health Hazard Assessment has identified carcinogenic and chronic noncarcinogenic effects from long-term exposure, but has not identified health effects due to short-term exposure to diesel exhaust. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the Project (OEHHA 2015). Thus, the duration of the proposed construction activities would only constitute a small percentage of the total 30-year exposure period. Due to this relatively short period of exposure at each campus site (6 months) and minimal localized particulate emissions on-site (see Table 6), TACs generated by the Project during construction would not result in concentrations causing significant health risks. Overall, the Project would not result in substantial TAC exposure to sensitive receptors in the vicinity of the Project, and impacts would be **less than significant.**

Health Impacts of Criteria Air Pollutants

Construction of the Project would generate criteria air pollutant emissions; however, the Project would not exceed the SCAQMD mass-emission thresholds.

The SCAB is designated as nonattainment for O_3 for the NAAQS and CAAQS. Thus, existing O_3 levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O_3 generally relate to reduced lung function. Because the Project would not involve construction activities that would result in O_3 precursor emissions (VOC or NO_x) that would exceed the SCAQMD thresholds, the Project is not anticipated to substantially contribute to regional O_3 concentrations and associated health impacts. Similar to construction, no SCAQMD threshold would be exceeded during operation.

In addition to O_3, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for NO_2 (since NO_2 is a constituent of NO_x). Exposure to NO_2 can cause lung irritation, bronchitis, and pneumonia, and lower resistance to respiratory infections. As depicted in Table 6, Project construction would not exceed the SCAQMD localized thresholds for NO_2. Operational emissions would be negligible based on the minimal on-road vehicle trips associated with routine maintenance and panel washing. Thus, the Project would not be expected to exceed the NO_2 standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less-than-significant impact. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as nonattainment for PM_{10} under the CAAQS and nonattainment for $PM_{2.5}$ under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (EPA 2016). As with O_3 and NO_x, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed SCAQMD's LSTs. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project would not result in any potentially significant contribution to local or regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be **less than significant.**

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

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

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

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities (SCAQMD 1993). The Project would not create any new sources of odor during operation. Therefore, Project operations would result in an odor impact that is **less than significant.**

3.4 Biological Resources

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

3.4.1 Environmental Setting

Existing Conditions

The following discussion is based on the Biological Constraints Analysis for Districtwide Solar Planning Initiative Project, Riverside County, California prepared by Dudek in August 2021 (Dudek 2021c), as well as additional survey work conducted in 2022. This assessment included a pre-field review of the latest available relevant literature, published research, maps, soil data, data on biological baselines, special-status vegetation communities, and special-status species distributions to determine those resources that have the potential to occur within the two potential project sites (e.g., Norco College and Moreno Valley College) and surrounding 100-foot buffers (the study area) (Figures 12A, and 12B). Dudek used the following definitions of special-status biological resources for the CEQA analysis:

- Plants – species listed as threatened or endangered under the federal and state Endangered Species Acts; species listed as rare, special, or Species of Special Concern as defined by the California Department of Fish and Wildlife (CDFW); and species with a California Rare Plant Rank of 1 or 2 as defined by the California Native Plant Society
- Wildlife – species listed as threatened or endangered under the federal and state Endangered Species Acts; Birds of Conservation Concern as defined by the U.S. Fish and Wildlife Service; and species with state designations such as Migratory Nongame Birds of Management Concern, California Species of Special Concern, Special Animals List species, and Fully Protected species as defined by the CDFW
- Vegetation communities – natural communities designated as sensitive by CDFW (Global Rank 1–3, State Rank 1–3) and riparian habitat

As part of the report, Dudek biologists Anna Cassady and Dylan Ayers conducted a general biological survey of the study area on July 16, 2021, with a follow-up survey conducted on May 23, 2022. A focused habitat assessment for Delhi Sands flower-loving fly was conducted on September 15, 2021, by permitted biologist Dale Powell. All native and naturalized plant species encountered within the study area were identified and recorded. The potential for special-status plant and wildlife species to occur within the study area was evaluated based on the vegetation communities, soils present, and documented occurrences within 5 miles of the study area. In addition, an investigation of presence and distribution of jurisdictional waters of the United States regulated by the U.S. Army Corps of Engineers, jurisdictional waters of the state regulated by the Regional Water Quality Control Board, and jurisdictional streambed and associated riparian habitat regulated by CDFW was conducted.

Vegetation Communities and Land Covers

The following vegetation communities and land cover types were observed throughout the study area: non-native grassland, brittle bush scrub, California buckwheat scrub, nonvegetated channel, ornamental plantings, disturbed habitat, and urban/developed land. These were identified and mapped within the study area based on general characteristics and/or species composition. The amount of acreage observed for each community and land cover type is described in Table 7.

Non-Native Grassland

California non-native grassland or California annual grassland is dominated by annual grasses and herbs in the ground layer, including bromes (*Bromus* spp.), filaree (*Erodium* spp.), mustards (*Brassica* spp.), and oats (*Avena* spp.). Although annual brome grasses and wild oats are the dominant plant species in this community composition, native annual forbs also constitute significant cover.

Neither CDFW (2022) nor the California Native Plant Society (CNPS 2022) gives California annual grassland/annual brome grasslands a rarity ranking because it is a non-native plant community that is widespread.

This community was only mapped within Norco College.

Brittle Brush Scrub

The brittle bush scrub alliance community includes brittle bush (*Encelia farinosa*) as a dominant or co-dominant species in the shrub canopy, intermixed with shrubs and herbaceous plant species including white sage (*Saliva apiana*), California buckwheat, California sagebrush (*Artemisia californica*), and chapparal yucca (*Hesperoyucca whipplei*). Some trees or tall shrubs may appear in small numbers, though average community height is less than two meters (CNPS 2022).

Brittle bush scrub is ranked by CDFW as a G5S4 alliance. This ranking indicates that globally and within California the alliance is widespread, abundant, and secure (CDFW 2022).

This community was mapped within Norco College and Moreno Valley College.

California Buckwheat Scrub

The California buckwheat scrub alliance community includes California buckwheat as the dominant or co-dominant shrub in the canopy. California buckwheat scrub has a continuous or intermittent shrub canopy less than 2 meters (7 feet) in height with a variable ground layer that may be grassy (CNPS 2022). Species associated with the California buckwheat scrub alliance include California sagebrush, Mendocino bushmallow (*Malacothamnus fasciculatus*), red bush monkeyflower (*Mimulus aurantiacus* var. *puniceus*), California brittlebush, goldenbush (*Isocoma menziesii*), coyote brush (*Baccharis pilularis*), deerweed (*Acmispon glaber*), black sage (*Salvia mellifera*), and white sage (CNPS 2022).

The California buckwheat scrub alliance is ranked by CDFW as a G5S5 alliance. This ranking indicates that globally and within California the alliance is widespread, abundant, and secure (CDFW 2022).

This community was only mapped within Moreno Valley College.

Nonvegetated Channel

Although not recognized by the Manual of California Vegetation*,* Online Edition (CNPS 2022), or the Natural Communities List (CDFW 2022), unvegetated channels (or non-vegetated floodplains) are described by Oberbauer et al. (2008). Oberbauer describes non-vegetated floodplains or channels as sandy, gravelly, or rocky areas along waterways or flood channels that are unvegetated on a relatively permanent basis due to variable water levels. Vegetation, if present, comprises non-native grasses at the outer edges with usually less than 10% absolute cover.

Unvegetated channel is not a listed vegetation community under the California Natural Communities List (CDFW 2022); however, it best describes what was observed in the field. As such, this mapping unit would not be considered a sensitive natural community by CDFW; however, unvegetated channel is considered a potentially jurisdictional aquatic resource.

This community was only mapped within Moreno Valley College.

Parks and Ornamental Plantings

Parks and ornamental plantings refers to areas where non-native ornamental species and landscaping schemes have been installed and maintained, usually as part of a commercial or residential property/park. This habitat type typically supports ornamental species, including Bermudagrass (*Cynodon dactylon*), hottentot fig (*Carpobrotus edulis*), Peruvian peppertree (*Schinus molle*), Brazilian peppertree (*Schinus terebinthifolius*), and red apple iceplant (*Aptenia cordifolia*).

Parks and ornamental plantings is not a listed vegetation community under the California Natural Community List (CDFW 2022), but it is used in this report because it best describes what was observed in the field. As such, this community is not globally or state ranked, and is not considered a sensitive natural community.

This community was only mapped within Moreno Valley College.

Urban/Developed

Urban or developed land covers refer to areas that have been constructed on or otherwise physically altered to the point where vegetation is no longer present. Urban or developed areas are characterized by permanent or semi-permanent structures, hardscapes, and landscaped areas that require irrigation.

Developed land is not a listed vegetation community under the California Natural Community List (CDFW 2022), but it is used in this report because it best describes what was observed in the field. As such, this community is not globally or state-ranked, and is not considered a sensitive natural community.

This community was mapped within Norco College and Moreno Valley College.

Disturbed Habitat

Disturbed habitat refers to areas where soils have been recently or repeatedly disturbed by grading, compaction, or clearing of vegetation. Structures are typically not present within disturbed habitats, and these areas provide marginal value for most plant and wildlife species. When vegetated, disturbed habitat supports predominantly non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance.

Disturbed habitat is not a listed vegetation community under the California Natural Community List (CDFW 2022), but it is used in this report because it best describes what was observed in the field. As such, this community is not globally or state ranked, and is not considered a sensitive natural community.

This community was mapped within Norco College and Moreno Valley College.

Table 7. Vegetation Communities and Land Covers in the Study Areas

Vegetation Communities	Norco College (acres)	Moreno Valley College (acres)
Urban/Developed	6.01	2.72
Disturbed Habitat	4.58	1.92
California Buckwheat Scrub	—	2.75
Brittle brush scrub	0.14	3.90
Non-Native Grassland	11.12	—
Non-vegetated Channel	—	0.24

Table 7. Vegetation Communities and Land Covers in the Study Areas

Vegetation Communities	Norco College (acres)	Moreno Valley College (acres)
Ornamental Plantings	—	0.61
Total*	**21.85**	**12.14**

Note:
* Totals may not add due to rounding.

Soils

The following nine soil series are mapped within the study area (Figures11a and 11b, Soils–Norco College and Soils–Moreno Valley College, respectively):

- **Bonsall Series** consists of soils found on gently to moderately sloping lands at elevations of 200 to 2,500 feet. They formed in residuum weathered from granite or granodiorite and are found in climates with long dry summers and short, mostly mild winters. Average annual precipitation is 10 to 16 inches. Bonsall soils are used mainly for range or for growing grain or grain hay and, to a limited extent, irrigated citrus and truck crops. Naturalized vegetation is mainly annual forbs and grasses.
- **Cieneba Series** soils consist of very shallow, shallow, and somewhat excessively drained soils that formed in material weathered from granitic rock. These soils are found on hills and mountains with slopes that range from 9% to 85%. Mean annual precipitation is about 25 inches. Cieneba soils are typically used for wildlife, recreation, watershed, and incidental grazing. Natural vegetation is mainly chaparral and chamise with pine and oak intermixed.
- **Delhi Series** soils are found on 0% to 15% slopes at elevations of 25 to 1,400 feet. They formed in wind-modified alluvium derived from granitic rock sources on floodplains, alluvial fans, and terraces. The climate is dry subhumid with cool, moist winters and hot, dry summers. Mean annual precipitation, all in the form of rain, is 10 to 16 inches. Delhi soils are used for growing grapes, peaches, truck crops, and alfalfa, and for homesites. Principal native plants are buckwheat and a few shrubs and trees. Typical vegetation is annual grasses and forbs.
- **Fallbrook Series** soils are found on gently rolling to very steep hills at elevations of 200 to 3,000 feet or as high as 3,500 feet on south-facing slopes. They formed in material weathered from granite and closely related granitic rocks that are usually deeply weathered. Rock outcrops are common in some areas. The climate is dry subhumid with warm, dry summers and cool, moist winters. The mean annual precipitation is 12 to 18 inches. Extensive areas are used for grazing, but there is production of irrigated avocados, citrus, and truck crops, and nonirrigated small grain and hay. Uncultivated areas are mainly annual grasses and forbs with considerable chaparral, chamise (*Adenostoma fasciculatum*), flattop buckwheat (*Eriogonum fasciculatum* v. *polifolium*), and other shrubs.
- **Hanford Series** soils are found on stream bottoms, floodplains, and alluvial fans at elevations of 150 to 3,500 feet. Slopes range from 0% to 15%. The soils formed in deep, moderately coarse textured alluvium, dominantly from granite and other quartz-bearing rocks of similar texture. The climate is dry subhumid mesothermal with hot, dry summers and cool, moist winters. The mean annual precipitation is 9 to 20 inches. Hanford soils are used for growing a wide range of fruits, vegetables, and general farm crops. They are also used for urban development and dairies. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants.

- **Monserate Series** soils are found on level to moderately steep lands dissected by terraces and fans at elevations of 700 to 2,500 feet elevation. These soils are derived from granitic parent rocks and occur in areas with dry subhumid mesothermal with long dry summer and mild moist winters. Mean annual precipitation is 12 to 18 inches. They are principally used for growing grain, citrus, pasture grasses, and field and truck crops when irrigation water is available. Naturalized vegetation cover is mainly non-native grasses, forbs, oaks, and shrubs on eroded cliffs.
- **Placentia Series** soils are found on nearly level to moderately sloping lands on fans and terraces at elevations of 50 to 2,500 feet. They formed in alluvium from granite and other rocks of similar composition and texture. The climate is dry subhumid mesothermal with long, dry, warm summers and cool, moist winters; the mean annual precipitation is approximately 12 to 18 inches. Placentia soils are used for the production of citrus, truck crops, small grain, hay, and forage. Most uncultivated areas have annual grasses and forbs.
- **Ramona Series** consists of well-drained soils formed in alluvium derived mostly from granitic materials. Ramona soils are on terraces and alluvial fans at elevations of 500 feet to 3,500 feet amsl with slopes of 0% to 25%. The natural vegetation consists primarily of annual grasses, forbs, chamise, sages (*Salvia* spp.), and California buckwheat (*Eriogonum fasciculatum*). Soils at the surface include sandy loam to very fine sandy loam, with some loamy sand, gravelly sandy loam, and gravelly fine sandy loam.
- **Vista Series** soils are found on hilly slopes at elevations of 400 to 3,900 feet in Southern California and at lower than 3,500 feet elevation in Central California. Slopes range from 2% to 75%. The soils formed in material weathered from decomposed granite and other closely related rocks. The climate is subhumid mesothermal. The average annual precipitation is 10 to 22 inches. Under irrigation, avocados and citrus are grown in areas of favorable temperature. A few small areas are used for growing winter truck crops. On areas of moderate relief, grain and hay are grown without irrigation. Range is a common use in areas that are not cultivated. The natural vegetation is annual grasses and forbs and such shrubs as California sagebrush (*Artemisia californica*), scrub oak (*Quercus berberidifolia*), lilac, chamise, sumac, and flattop buckwheat.

Floral Diversity

A total of 20 species of vascular plants (8 natives and 12 non-natives) were recorded across the study area. The low plant diversity reflects the study area's relatively small size, its proximity to surrounding commercial and residential development, and previous development occurring throughout the study area. Plant species observed within the study areas are listed in Appendix B1.

Wildlife

A total of 8 bird species were detected within the study area, including northern mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), California towhee (*Melozone crissalis*), and red-tailed hawk (*Buteo jamaicensis*). No bird nests were observed during the survey. One reptile species, western side-blotch lizard (*Uta stansburiana*), was observed. No amphibian species were observed. Wildlife species observed within the study area are listed in Appendix B2.

Special-Status Plants

No plant species listed or proposed for listing as rare, threatened, or endangered by either CDFW or the U.S. Fish and Wildlife Service were detected within the study area. The study area is not within Critical Habitat for any special-status plant species (USFWS 2022). Based on the results of the literature review and database searches, 60 special-status plant species have been documented within the region. All of these species were evaluated for potential to occur within the study areas. Criteria used include soils, current disturbance levels, vegetation communities present, elevation ranges, and previous known locations based on the California Natural Diversity Database, California Native Plant Society, and Calflora (2022) records. There are no federally or state-listed as endangered plant species with a potential to occur in the study area. Due to the absence or marginal-quality of suitable habitat within the study area, all non-listed special-status species were determined to either have low potential or were not expected to occur within the study area.

Special-Status Wildlife

No wildlife species listed or proposed for listing as rare, threatened, or endangered by either CDFW or the U.S. Fish and Wildlife Service were detected within the study area. The study area is not within critical habitat for any special-status wildlife species (USFWS 2022). Based on the results of the literature review and database searches, 54 special-status wildlife species have been documented within the region. For each species listed, a determination was made regarding potential use of the study area based on information gathered during the field reconnaissance, known habitat preferences, and knowledge of the species' relative distributions in the area.

One federally threatened species (coastal California gnatcatcher [*Polioptila californica californica*]) and one federally endangered species Delhi Sands flower-loving fly [*Rhaphiomidas terminatus abdominalis*]) each have a low potential to occur in the study area. In addition, one federally endangered species (Stephens' kangaroo rat [*Dipodomys stephensi*] has a moderate potential to occur within the study area. Burrowing owl (*Athene cunicularia*), a CDFW species of special concern has a moderate potential to occur. Due to the absence or marginal-quality of suitable habitat within the study area, all other non-listed special-status species were determined to either have low potential or were not expected to occur within the study area.

Jurisdictional Waters

Three drainage features, totaling approximately 700 linear feet, were observed in the study area at Moreno Valley College. These features are potential non-wetland waters of the United States and State. No features were observed at the Norco College study area. No blue line streams or waterways are mapped on U.S. Geological Survey topographic maps for the study area. No areas potentially supporting vernal pools, ephemeral ponds, or wetlands were observed during the survey. The study area does not contain topographic low points, clay soils, bedrock, or other poorly drained soils typically associated with vernal pools, and vernal pool plant species were not observed.

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 Game or U.S. Fish and Wildlife Service?

Less than Significant with Mitigation Incorporated. The Proposed Project has the potential to impact candidate, sensitive or special status species, as discussed below. With the incorporation of mitigation, impacts are **less than significant.**

Special-Status Plant Species

No special-status plant species were detected within the study area during the general biological survey. Furthermore, no federally or state-listed as endangered plant species have potential to occur in the study area and all non-listed special-status species were determined to either have low potential or were not expected to occur within the study area. As such, impacts to special-status plants are not expected to occur.

Special-Status Wildlife

No special-status wildlife species were detected within the study area during the general biological survey.

One federally threatened species (coastal California gnatcatcher) and one federally endangered species Delhi Sands flower-loving fly) each have a low potential to occur in the study area. In addition, one federally endangered species (Stephens' kangaroo rat) has a moderate potential to occur within the study area. Burrowing owl, a CDFW species of special concern, has a moderate potential to occur. Due to the absence or marginal-quality of suitable habitat within the study area, all other non-listed special-status species were determined to either have low potential or were not expected to occur within the study area.

California gnatcatcher

The federally listed threatened coastal California gnatcatcher has a low potential to forage near the portion of the study area at Moreno Valley College; however, this portion of the study area does not contain suitable coastal sage scrub suitable for nesting. The adjacent vegetation community does not contain a dominance or sub-dominance of California sagebrush (*Artemisia californica*) that would elevate the quality of the habitat to support nesting coastal California gnatcatcher. As such, nesting coastal California gnatcatcher is not expected to occur within the Project site and impacts are not expected to occur.

Stephens' Kangaroo Rat

The federally listed endangered and state-listed threatened Stephens' kangaroo rat has a moderate potential to occur within the portion of the study area at Moreno Valley College.

The Moreno Valley portion of the study area is within the Stephens' Kangaroo Rat Habitat Conservation Plan area, which provides take authorization for Stephens' kangaroo rat within its boundaries (RCHCA 1996). With implementation of Mitigation Measure (MM)-BIO-1, which consists of payment of the Stephens' Kangaroo Rat Habitat Conservation Plan Development Mitigation Fee, the Proposed Project would be consistent with the Stephens' Kangaroo Rat Habitat Conservation Plan and any impacts to Stephens' kangaroo rat would be **less than significant with mitigation incorporated**.

Delhi Sands flower-loving fly

Norco College contains mapped Delhi series soils, which can provide potential habitat for the federally listed endangered Delhi Sands flower-loving fly. According to the focused habitat assessment conducted by permitted biologist Dale Powell (Dudek 2021d), the portion of the study area within Norco College contains minimal indicator plants for Delhi Sands flower-loving fly and has been degraded through disking, causing organic matter to mix with the Delhi series soil. As a result, the native soils do not remain and the study area within Norco College does not contain suitable habitat for Delhi Sands flower-loving fly. As such, **no impacts** are expected to occur.

Nesting Birds

The study area contains trees, shrubs, and bare ground that would potentially be used by migratory birds for breeding. Direct impacts to migratory nesting birds must be avoided to comply with the Migratory Bird Treaty Act (16 USC 703–712) and California Fish and Game Code. Indirect impacts to nesting birds from short-term, construction-related noise could result in decreased reproductive success or abandonment of an area as nesting habitat if construction were conducted during the breeding/nesting season (i.e., January through August). Direct and indirect impacts to nesting birds are significant absent mitigation. Implementation of **MM-BIO-2** would ensure nesting birds would not be impacted by project construction activities during nesting season. As such, impacts to nesting birds would be **less than significant with mitigation incorporated**.

Burrowing Owl

Burrowing owl is a Species of Special Concern and has a moderate potential to occur in the Norco College portion of the study area. As such, project implementation could result in direct impacts on burrowing owl in the form of habitat destruction, and potential death, injury, or harassment of nesting birds, their eggs, and their young. Injury or mortality occurs most frequently during the vegetation clearing stage of construction and affects eggs, nestlings, and recently fledged young that cannot safely avoid equipment. Indirect impacts to burrowing owl include vibration, excess noise, chemical pollution, fugitive dust, and increased human presence. Direct and indirect impacts to burrowing owl are potentially significant, absent mitigation.

Direct and/or indirect impacts to burrowing owl would be avoided and minimized through implementation of **MM-BIO-3A.** This mitigation measure requires pre-construction surveys, establishment of exclusion buffers around occupied burrows or burrow complexes (buffer width is dependent upon breeding versus non-breeding season), and burrowing owl specific monitoring throughout construction to ensure full avoidance of owls.

Should it be determined that full avoidance of occupied burrowing owl burrows or burrow complexes is not possible, **MM-BIO-3B** requires preparation of a Burrowing Owl Relocation and Mitigation Plan that would include methods for passive relocation; description of surrounding suitable habitat conditions; monitoring and management requirements for replacement burrow sites in coordination with CDFW; reporting requirements; and compensatory mitigation, if required by CDFW. In addition, implementation of **MM-BIO-4**, which requires clear marking of work limits, measures to ensure toxicants are kept within the development footprint, and measures to ensure that trash and debris are disposed of properly, would avoid and minimize indirect impacts to burrowing owl. With implementation of **MM-BIO-3A**, **MM-BIO-3BA**, and **MM-BIO-4**, impacts to burrowing owl would be **less than significant with mitigation incorporated.**

MM-BIO-1 Stephens Kangaroo Rat

The project shall make payment of the Stephens' Kangaroo Rat Habitat Conservation Plan Development Mitigation Fee to be consistent with the Stephens' Kangaroo Rat Habitat Conservation Plan (RCHCA 1996).

MM-BIO-2 Nesting Birds

In conformance with the requirements of the Migratory Bird Treaty Act and California Fish and Game Code, should vegetation clearing, cutting, or removal activities be required during the nesting season (i.e., January 1 through August 31), a qualified biologist shall conduct a nesting bird survey within 72 hours of such activities. The survey shall consist of full coverage of the project footprint and an appropriate buffer, as determined by the biologist. If no occupied nests are found, no additional steps shall be required. If nests are found that are being used for breeding or rearing young, the biologist shall recommend further avoidance measures, including establishing an appropriate buffer around the occupied nest. The buffer shall be determined by the biologist based on the species present, surrounding habitat, and existing environmental setting/level of disturbance. No construction or ground-disturbing activities shall be conducted within the buffer until the biologist has determined that the nest is no longer being used for breeding or rearing.

MM-BIO-3A Burrowing Owl Avoidance and Mitigation Measures. Prior to the initiation of construction activities, a qualified biologist shall conduct pre-construction surveys for burrowing owl to determine presence/absence of the species. The survey shall be conducted in accordance with the most current and applicable California Department of Fish and Wildlife (CDFW) protocol within 30 days of site disturbance. If burrowing owls are not detected during the clearance survey, no additional mitigation is required. Preconstruction surveys shall include suitable burrowing owl habitat within the Project footprint and within 500 feet of the Project footprint (or within an appropriate buffer as required in the most recent guidelines and where legal access to conduct the survey exists). If burrowing owls are not detected during the clearance survey, no additional mitigation is required.

If burrowing owl is located, occupied burrowing owl burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through non-invasive methods that either the birds have not begun egg laying and incubation, or that juveniles from the occupied burrows are foraging independently and capable of independent survival. Disturbance buffers shall be implemented by a qualified biologist in accordance with the recommendations included in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). A biologist shall be contracted to perform monitoring during all construction activities approximately every other day. The definitive frequency and duration of monitoring shall be dependent on whether it is the breeding versus non-breeding season and the efficacy of the exclusion buffers, as determined by a qualified biologist and in coordination with CDFW.

If burrowing owl is detected during the non-breeding season (September 1 through January 31) or confirmed to not be nesting, a non-disturbance buffer between the project activities and the occupied burrow shall be installed by a qualified biologist in accordance with the recommendations included in the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

MM-BIO-3B Burrowing Owl Relocation and Mitigation Plan. If avoidance is not possible, either directly or indirectly, a Burrowing Owl Relocation and Mitigation Plan shall be prepared and submitted for approval by CDFW. Once approved, the Plan would be implemented to relocate non-breeding burrowing owls from the Project site. The Plan shall include the following:

- Confirmation with site surveillance that burrow/burrows are vacated prior to burrow scoping
- Information on scope type and timing of scoping events
- Metrics to determine vacancy and burrow excavation timing
- Details regarding how burrow/burrows will be excavated, including proposed tools
- Removal of other potential surrogate burrows and/or refugia within the disturbance footprint
- Photo documentation
- Metrics for determining relocation success
- Monitoring to evaluate success criteria and implement remedial measures, as necessary

- Details regarding how the project will continue to maintain an inhospitable environment for burrowing owl during construction activities and project operations

The Project applicant shall submit at least one burrowing owl pre-construction survey report to the satisfaction of CDFW to document compliance with this mitigation measure. For the purposes of this mitigation measure, "qualified biologist" is a biologist who meets the requirements set forth in the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012).

MM-BIO-4 General Avoidance and Minimization Measures

The following avoidance and minimization measures shall be implemented during Project construction activities.

- Construction limits shall be clearly flagged so that adjacent native vegetation is avoided.
- Construction work and operations and maintenance areas shall be kept clean of debris, such as trash and construction materials. Fully covered trash receptacles that are animal-proof shall be installed and used during construction to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Trash contained within the receptacles shall be removed from the work area at least once a week.
- Staging and storage areas for spoils, equipment, materials, fuels, lubricants, and solvents shall be located within the designated impact area or adjacent developed areas.
- Best management practices shall be implemented to ensure water quality in existing drainages would not be affected during Project activities.

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

No Impact. Table 8 describes the proposed temporary and permanent impacts for the Project.

Table 8. Potential Impacts to Land Covers and Vegetation Communities at the Project

Vegetation Communities	Norco College (acres)		Moreno Valley College (acres)	
	Temporary	Permanent	Temporary	Permanent
Urban/ Developed	0.06	0.01	0.08	<0.01
Disturbed Habitat	0.01	0.74	0.3	0.02
Brittle brush scrub	—	—	0.05	2.39
Non-Native Grassland	—	5.34	—	—
Total*	**0.07**	**6.09**	**0.43**	**2.41**

Note:
* Totals may not add due to rounding.

The study area does not contain riparian vegetation communities or any vegetation communities identified as sensitive according to CDFW (CDFW 2022). As a result, **no direct or indirect impacts** to sensitive vegetation communities are expected to occur.

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

Less than Significant with Mitigation Incorporated. The study area does not contain wetland waters of the United States or State. The study area contains potential non-wetland waters of the United States and non-wetland waters of the State; however, all features are located outside of the Project footprint and direct impacts will be avoided. Indirect short-term impacts to jurisdictional waters include changes to hydrology, erosion, chemical pollution, and fugitive dust, and substantial long-term impacts include hydrology alterations and chemical pollution. Indirect impacts to jurisdictional waters would be significant without mitigation. **MM-BIO-4** requires that the work limits are appropriately flagged, and that equipment and spoil sites are placed in uplands within the proposed development area. These measures would further reduce potential indirect impacts to aquatic resources. Implementation of **MM-BIO-4** would reduce indirect impacts to potentially jurisdictional waters outside of the Project footprint to **less than significant with mitigation incorporated**.

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

No Impact. The Project site is not located within an area that functions as a wildlife movement or migration corridor. As such, the Proposed Project would not constrain natural wildlife movement in its vicinity and impacts are **not expected to occur**.

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

No Impact. The Project would traverse City of Moreno Valley, City of Norco, and County of Riverside jurisdictions. As proposed, the Project would not conflict with any local policies or ordinances protecting biological resources in the City of Moreno Valley or the City of Norco. The County of Riverside established Ordinance Number 559, Regulating the Removal of Trees (County of Riverside 2022). The ordinance was established to ensure protection of timberlands within the county. The ordinance applies to parcels greater than 0.5 acres in size and above 5,000 feet in elevation in unincorporated areas of the county. As such, Ordinance No. 559 does not apply to the Proposed Project. Therefore, **no impact** would occur to any biological resources protected by a local ordinance.

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?***

Less than Significant with Mitigation Incorporated. The Proposed Project is located within the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) and the Stephens' Kangaroo Rat Habitat Conservation Plan (HCP) areas. The District is not a Permittee under either Plan; however, pursuant to CEQA, the Proposed Project must not conflict with either Plan.

Stephens' Kangaroo Rat HCP

The Project is located within Stephens' Kangaroo Rat HCP area, but not located within an Stephens' Kangaroo Rat HCP Core Area (RCHCA 1996). The District is not a signatory to this HCP; however, it can participate in the plan for project mitigation. Mitigation for potentially significant impacts on Stephens' kangaroo rat are addressed in **MM-BIO-1**, and this mitigation measure is consistent with the goals and objectives of the Stephens' Kangaroo Rat HCP.

Western Riverside MSHCP

The Project is located within the Western Riverside MSHCP area (RCA 2003). The District is not a permittee of the MSHCP; therefore, projects under its authority are not subject to the MSHCP, nor are said projects granted any take authorization unless the District chooses to apply for take under the Participating Special Entity Process. Nevertheless, the Regional Conservation Authority MSHCP Information Map (RCA 2022) was reviewed for requirements that could result in a potential conflict between the Proposed Project and the MSHCP. The Project footprint is not located within a Criteria Cell. The portion of the Project footprint at Norco College is within a burrowing owl habitat assessment area, but not in a survey area where habitat assessments for narrow endemic plants, criteria area plants, small mammals, and/or amphibians are required (RCA 2022). The portion of the Project footprint at Moreno Valley College is not located within any MSHCP survey areas. For plant and wildlife species that are covered under the MSHCP, impacts are fully mitigated for covered activities within Riverside County by payment of the Development Mitigation fee and through consistency with MSHCP Section 6 policies and requirements. Although the District is not a Permittee in the MSHCP or required to be consistent with the MSHCP, implementation of mitigation as part of the Proposed Project is beneficial to the MSHCP. Specifically, **MM-BIO-3A, MM-BIO-3B**, and **MM-BIO-4** as proposed are consistent with the MSHCP requirements for burrowing owl. In addition, **MM-BIO-4** is consistent with the MSHCP requirements for Section 6.1.2 Riparian/Riverine and Vernal Pool Resources and Section 6.1.4 Urban/Wildlands Interface Guidelines.

Because there would be no conflicts with the Stephens' Kangaroo Rat HCP nor the Western Riverside MSHCP, there would be **no impacts**.

3.5 Cultural Resources

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

The Proposed Project is located on two RCCD campuses within Riverside County: Norco College and Moreno Valley College. The Norco College Project component includes installation of a 2.1- MW, ground-mounted fixed tilt PV array approximately 6 acres in size on the undeveloped hillside to the northeast of the developed Norco College campus. The Moreno Valley College (MVC) Project component includes installation of a 0.9-MW ground-mounted fixed tilt PV array approximately 2.7 acres in size on undeveloped land on the easternmost edge of the MVC campus, including a solar switchboard at the northern edge of the PV solar array. For the purposes of this MND section, the two campuses that collectively represent the Proposed Project site will be referred to as the Norco College Solar Site and the MVC Solar Site.

The following analysis is based on a Phase I Archaeological Resources Assessment Report prepared by Dudek in October 2022 (Appendix E) in support of the MND for the Proposed Project. The cultural assessment included a California Historical Resources Information System (CHRIS) records search conducted at the Eastern information Center, located on the campus of University of California, Riverside; a review of the California Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) search results; in-depth review of geotechnical, archival, academic, and ethnographic information; and an archaeological pedestrian survey. A brief summary of the assessment results, for both the Norco College Solar Site and the MVC Solar Site, are provided below.

Norco College Project Site

Historical topographic maps and aerial photographs through the Nationwide Environmental Title Research, LLC (NETR) were consulted to better understand any natural or human-made changes to the Norco College Solar Site and surrounding properties over time. The first available topographic map of 1947 depicts the Norco College Solar Site as within the 678-acre luxury resort known as the Lake Norconian Club. By 1955, the topographic map shows that it is evident that the resort complex has been sold to the U.S. Navy as "NAVAL RESERVATION" is labeled over the complex. Norco College is first depicted on the 2012 topographic map as "Riverside Community College Norco Campus," indicating the sale of the government-owned land to District. Though the map does not show any structures, the roads are in their present-day alignments. There are no features depicted within the Norco College Solar Site. The 1938 historic aerial photograph shows the Norco College Solar Site within vacant and undeveloped land with the exception of a few dirt roads. The Lake Norconian resort complex is visible north of the Norco College Solar Site along the north shore of Lake Norconian. By 1966, two small sheds and a graded dirt parking lot/turn-around are visible southwest of the Norco College Solar Site's proposed locations of the EV charger switchboard and associated AC conduit, and possible route of the new underground 12 kV underground line. More substantial disturbances are visible within the Norco College Solar Site on the 1980 aerial photograph. Numerous informal dirt roads of varying widths cut through each work area making a network of scars. The work areas are entirely altered due to the construction of Norco College campus as seen on the 1994 aerial photograph. There are no other substantial alterations to the work areas through 2018 besides the routine disking and/or plowing of the area southwest of the proposed locations of the EV charger switchboard and associated AC conduit, and possible route of the new underground 12 kV underground line, and proposed BESS area.

Present site conditions for the Norco College Solar Site primarily consist of a 6-acre, undeveloped hillside area to the northeast of the main campus that would support a future PV solar array, a BESS component on a developed portion of the main campus, and an EV charger switchboard (and associated AC conduit) in the southwest corner of the main campus. The proposed new 12 kV underground lines are within partially developed and undeveloped/vacant settings. At the location of the proposed 6-acre PV solar array, the underlying terrain lightly slopes northward, with grassland habitat dominating most of the rectangular area. Similar grassland habitat is found to the immediate west, north and south of this area; however, off-campus development further away consists of the multi-structure campus of Naval Sea Systems Command (located to the west) and one- and two-story commercial and office style development in the City of Norco. The proposed BESS component is located on the flat, developed/paved northerly portion of the main campus which currently supports the Main Plant, Operations Center, and campus staff parking. The EV charger switchboard and associated AC conduit are primarily proposed to be located to the immediate west of the Wilfred J. Airey Library and east of campus Parking Lot D. More specifically, the proposed switchboard is proposed in an existing shrub and tree vegetated planting area bordered by concrete sidewalk and paved parking and conduit would be installed beneath existing portions of the nearby parking lot.

A review of the CHRIS database results (completed August 10, 2018) for the Norco College Solar site indicates that 24 previously recorded cultural resources were identified within 1-mile of the site; none of these resources were identified within the Norco College Solar Site. These resources consist of five (5) prehistoric sites, one (1) prehistoric isolated artifact, two (2) historic-age archaeological sites, and sixteen (16) historic-age built environment resources. Amongst the prehistoric archaeological resources are four (4) bedrock milling stations, one (1) low density lithic scatter, and one (1) isolated handstone fragment. The historic-age archaeological sites consist of foundation remnants of previously extant single-family properties. Additionally, results of the CHRIS records search indicate that 18 previous cultural resources studies have been conducted within 1-mile of the Norco College Solar Site. These studies were conducted between 1980 and 2017. One study, RI-01108, overlaps the Norco College Solar Site and indicates the prehistoric sensitivity of the surrounding area. According to report RI-01108, four prehistoric archaeological sites were identified (P-33-001229/CA-RIV-001229, P-33-002315/CA-RIV-002315, and P-33-002316/CA-RIV-002316). All of these sites consist of bedrock milling features. No associated prehistoric artifacts, ecofacts, or midden soils were documented at any of the bedrock milling sites; however, none of the sites were within close proximity to the present Norco College Solar Site. The prehistoric resources were located west of the work areas within the present Norco College Solar Site, with the closest milling site within 305 meters (1,000 feet) of the proposed work areas. Additionally, a review of historical aerial photographs for the indicates that the area where the four prehistoric resources were encountered during the 1987 study has since been developed into a residential neighborhood. As a result, it is likely that these prehistoric resources have since been destroyed. No record of previously recorded historic-period or prehistoric archaeological resources are on file with the Eastern information Center as being present within the Norco College Solar Site.

The SLF record is maintained at a public land survey system section level meaning the negative or positive result is respective of a general area covering approximately 1 square mile (640 acres) rather than the exact area of study. As part of the process of identifying cultural resources within or near the Norco College Solar Site, a search of the NAHC's SLF database was requested on May 13, 2022. The NAHC's SLF search result (received June 16, 2022) was positive; however, as previously stated, the SLF record is maintained at a public land survey system section level, which indicates a recorded sacred site could be anywhere within this 1 square mile (640 -acre) area and therefore, does not necessarily equate to the existence of resources within the specific area occupied by the Norco College Solar Site.

Subsurface exploratory investigations were conducted within the location of the 2.1- MW, ground-mounted fixed tilt PV array within the Norco College Solar Site. According to the boring logs for the two locations investigated (BH-05 and BH-06) within the Norco College Solar Site's proposed PV solar arrays work area, alluvium (native soils) was encountered from the surface to 15 feet below existing ground surface at both boring locations. Underlying the alluvium is bedrock. No fill soils were encountered within the locations subjected to subsurface investigation.

Archaeological pedestrian surveys of the Norco College Solar Site were conducted in August 2021 and September 2022. At the time of the surveys, the areas within the Norco College Solar Site proposed for construction and operation were observed to be within disturbed and mostly undeveloped land. Due to the present site conditions, including a paved parking lot/roadways/walkways, and extant buildings/structures, providing for no exposed ground soils or limited ground surface visibility as a result of dense vegetation, or excellent visibility as a result of informal dirt roads, weed abatement activities, mechanical sloping of the hilly terrain, including plowing and tilling activities, ground surface visibility was variable and ranged between non-existent to excellent (0% to 100%), dependent on the area surveyed. No cultural resources were identified within the Norco College Solar Site as a result of the survey.

Moreno Valley College Project Site

Historical topographic maps and aerial photographs through the Nationwide Environmental Title Research, LLC (NETR) were consulted to better understand any natural or human-made changes to the Norco College Solar Site and surrounding properties over time. The first available topographic map from 1954 depicts the MVC Solar Site as mostly undeveloped aside from a north-south trending tract road that meanders the perimeter of the Mount Russell Hills, eventually bisecting the proposed BESS area. The 1963 map depicts a second tract road within the MVC Solar Site. This north-south trending road runs adjacent to the western border of proposed PV solar array area. The 1968 map details a shift in the tract road alignments. The road that once intersected the proposed BESS area is offset to the west, and the road adjacent to the proposed PV solar array location is no longer depicted. There are no changes to the topographic maps until 2012, at which time the surrounding area is shown as entirely developed, and Moreno Valley College is labeled on the map, though no individual features are depicted. There are no additional updates to the topographic maps through 2018. The 1966 aerial photograph shows the MVC Solar Site within disturbed land denuded of vegetation and with little to no boulder outcrops. The location of the proposed PV solar array has been graded and prepped for possible cultivation and a natural drainage bisects this area north-south. A dirt road encircles the cleared area encompassing the proposed PV solar array area. Similarly, the proposed BESS area has also been subject to earth moving activities as evidenced by the lack of vegetation and an informal dirt road bisects this area northwest to southeast. Immediately south of the MVC Solar Site is a large, flat parcel of cultivated land that is the eventual location of the MVC campus. There are no substantial changes to the MVC Solar Site until 1997, when the development of the MVC campus has completely altered the landscape. Two large water tanks have been erected immediately north of the proposed PV solar array location. Additionally, a network of informal dirt roads crisscross and delineate the boundaries of proposed PV solar array area and paved roads and campus buildings surround this area to the north, east, and south. By 2005, the proposed PV solar array area has been graded and shaped into a flat pad. At this point, the MVC Solar Site appears as it does in its current condition. No discernable changes occurred within the MVC Solar Site through 2018.

Present site conditions for the MVC Solar Site primarily consist of an approximately 2.7-acre, undeveloped area on the easternmost edge of campus (and upslope of adjacent College Park) that would support a future PV solar array, a BESS component on a developed portion of the campus located to the north of the library, and an EV charger switchboard (and associated AC conduit) to the south of College Drive in campus Parking Lot B. The proposed new 12 kV underground lines are within partially developed and undeveloped/vacant settings. The proposed PV solar array area is surrounded by undeveloped hilly terrain to the north, east, and south, College Park to the southwest, and a previously graded yet undeveloped portion of the campus (and an adjacent surface parking lot) to the west and lightly developed portions of the campus to the northwest. Two large water storage tanks are located less than 200 feet northeast of this work area and public trails border the area to the north, east, and south. The BESS component encompasses a small, 0.04-acre area that consists of mostly of barren, rocky soils with a canopy of mature pine trees (Pinus sp.).

A review of the CHRIS database results (completed November 13, 2018) for the MVC Solar Site indicates that 17 previously recorded cultural resources were identified within 1-mile of the site and all 17 resources are prehistoric archaeological sites; none of these resources were identified within the MVC Solar Site. The prehistoric archaeological sites consist of bedrock milling stations distributed along the foothills of Mount Russell Hills north and east of the MVC Solar Site. No associated prehistoric artifacts, ecofacts, or midden soils were documented at any of the bedrock milling sites. Additionally, results of the CHRIS records search indicate two studies (RI-00137 and RI-01843) overlap the MVC Solar Site and indicate the prehistoric sensitivity of the immediate surroundings of the MVC Solar Site. According to report RI-00137, 61 prehistoric archaeological sites were located as a result of the survey and of those, 14 were captured in the CHRIS records search results for the present Proposed Project. These 14 prehistoric archaeological sites (P-33-000530 through P-33-000543) located within 1-mile of the MVC Solar Site consist of bedrock milling stations that were interpreted to be food processing sites. The study area for report RI-01843 subsumes the entire MVC Solar Site. According to report RI-01843, 51 archaeological resources were identified. Of these, 24 were previously recorded prehistoric resources (including sites P-33-000530 through P-33-000543 discussed above), 26 were newly identified prehistoric sites, and one (1) was a newly identified historic-age archaeological site. No historic-period or prehistoric resources were identified within the present MVC Solar Site as a result of the overlapping/adjacent studies.

Subsurface exploratory investigations were conducted within the location of the 0.9-MW ground-mounted fixed tilt PV array within the MVC Solar Site. According to the boring logs for the two locations investigated (BH-01 and BH-02) within the MVC Solar Site's proposed PV solar arrays work area, alluvium (native soils) was encountered from surface to between 15 to 45 feet below existing ground surface at BH-01 and BH-02, respectively. Underlying the alluvium is bedrock. No fill soils were encountered within the locations subjected to subsurface investigation.

Archaeological pedestrian surveys of the MVC Solar Site were conducted in August 2021 and September 2022. At the time of the surveys, the areas within the MVC Solar Site proposed for construction and operation were observed to be within disturbed and undeveloped land. Due to the present site conditions, including a paved parking lot/roadways/walkways, and extant buildings/structures, providing for no exposed ground soils or limited ground surface visibility as a result of dense vegetation, or excellent visibility as a result of informal dirt roads, walking trails, weed abatement activities, mechanical sloping of the hilly terrain, deep erosional cuts caused by a storm water event, graded areas, and landscaped areas, ground surface visibility was variable and ranged between non-existent to excellent (0% to 100%), dependent on the area surveyed. No cultural resources were identified within the MVC Solar Site as a result of the survey.

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

Less Than Significant Impact with Mitigation Incorporated. As defined by the CEQA Guidelines (14 CCR 15000 et seq.), a "historical resource" is considered to be a resource that is listed in or eligible for listing in the National Register of Historic Places or California Register of Historical Resources (CRHR), has been identified as significant in a historical resource survey, or is listed on a local register of historical resources. Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a historical resource and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

A review of historical aerial photographs indicates that the Proposed Project site (both the Norco College Solar Site and Moreno Valley College Solar Site) have been disturbed since at least the mid-twentieth century, shifting from vacant and undeveloped land to the present site conditions.

The Proposed Project would not cause a substantial adverse change in the significance of a known historical resource pursuant to Section 15064.5. However, the potential for subsurface intact historical cultural deposits to exist within native soils to the depths of proposed ground disturbance (between 4 and 8 feet bgs) for Proposed Project construction activities, including site preparation, grading, paving, boring and conduit installation, installation of racking and other mechanical components PV solar arrays panel installation and other electrical component installation, although considered low, is possible. In the event that unanticipated cultural resources are encountered during Project implementation, an assessment and evaluation of the resource would be conducted potentially resulting in the determination that the resource is historical in accordance with the definition outlined in Section 15064.5. As a result, the Proposed Project has a potential to impact and thus cause a substantial adverse change in the significance of a yet unknown historical resource.

Thus, mitigation is required to address impacts related to the inadvertent discovery of yet unknown historical resources, as outlined in **MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**. All mitigation has been subject to review by consulting tribes; recommended management strategies provided by the tribes have been directly integrated with the exception of minor revisions for clarity. **MM-CUL-1** requires that all Project construction personnel participate in a Workers Environmental Awareness Program training for the proper identification and treatment of inadvertent discoveries. **MM-CUL-2** requires the retention of an on-call qualified archaeologist to conduct spot monitoring and respond to and address any inadvertent discoveries. **MM-CUL-3** requires construction work occurring within 100 feet of a cultural resource discovery be immediately halted until the qualified archaeologist, meeting the Secretary of Interior's Professional Qualification Standards for Archaeology, in coordination with Tribal Representatives that have consulted on the Project, can assess and evaluate the discovery pursuant to CEQA; this measure also outlines the protocols for the final disposition of inadvertent discoveries. Additionally, **MM-CUL-3** requires the inadvertent discovery clause be included on all construction plans. With implementation of **MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**, significant impacts to historical resources would be reduced to **less than significant with mitigation incorporated.**

MM-CUL-1 Workers Environmental Awareness Program–Prior to the start of construction activities, all construction personnel and monitors shall be trained regarding identification and treatment protocol for inadvertent discoveries of cultural resources (archaeological and tribal) and human remains. A basic presentation and handout or pamphlet shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries of cultural resources and human remains. The purpose of the Workers Environmental Awareness Program (WEAP) training is to provide specific details on the kinds of materials that may be identified during ground disturbing activities and explain the importance of and legal basis for the protection of human remains and significant cultural resources. Each worker shall also be trained in the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground disturbing activities. These procedures include but are not limited to work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitoring staff.

MM-CUL-2 Retention of an On-Call Qualified Archaeologist – A qualified archaeologist shall be retained and on-call to conduct spot monitoring and respond to and address any inadvertent discoveries identified during ground disturbing activities whether within disturbed, imported, or native soils. A qualified archaeologist shall be retained to conduct monitoring of initial ground disturbance. Initial ground disturbance is defined as initial construction-related earth moving of sediments from their place of deposition. As it pertains to archaeological monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by current project-related construction. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material. The archaeological monitor shall be responsible for maintaining daily monitoring logs for those days monitoring occurs.

MM-CUL-3 Inadvertent Discovery Clause – If during ground disturbance activities, unique cultural resources are discovered that were not assessed by the archaeological report(s) and/or environmental assessment conducted prior to Project approval, the following procedures shall be followed:

Unique cultural resources are defined, for this condition only, as being multiple artifacts in close association with each other, but may include fewer artifacts if the area of the find is determined to be of significance due to its sacred or cultural importance as determined in consultation with the Native American Tribe(s). Tribal cultural resources are excluded from the definition of unique cultural resources as those resources are defined by the tribal values ascribed to the them by their affiliated communities. Treatment of tribal cultural resources inadvertently discovered during the Project's ground-disturbing activities shall be subject to the consultation process required by state law and AB 52.

i. All ground disturbance activities within 100 feet of the discovered cultural resources shall be halted until a meeting is convened between the Project Archaeologist, the Tribal Representative(s), and the lead agency representative to discuss the significance of the find.

ii. At the meeting, the significance of the discoveries shall be discussed and after consultation with the Tribal Representative(s) and the Project Archaeologist, a decision shall be made, with the concurrence of the lead agency representative, as to the appropriate mitigation (documentation, recovery, avoidance, etc.) for the cultural resources.

iii. Further ground disturbance, including but not limited to grading, trenching etc., shall not resume within the area of the discovery until an agreement has been reached by all parties as to the appropriate mitigation. Work shall be allowed to continue outside of the buffer area and will be monitored by additional Tribal Monitors if needed.

iv. Treatment and avoidance of the newly discovered resources shall be consistent with the Cultural Resources Management Plan and Monitoring Agreements entered into with the appropriate tribes. This may include avoidance of the cultural resources through project design, in-place preservation of cultural resources located in native soils and/or re-burial on the Project property so they are not subject to further disturbance in perpetuity as identified in Non-Disclosure of Reburial Condition/Mitigation Measures.

v. If the find is determined to be significant and avoidance of the site has not been achieved, a Phase III data recovery plan shall be prepared by the Project Archeologist, in consultation with the Tribe, and lead agency for their review and approval prior to implementation of the said plan.

vi. Pursuant to California PRC Section 21083.2(b), avoidance is the preferred method of preservation for archaeological resources and cultural resources. If the assigned lead agency contact and the Tribe(s) cannot agree on the significance or the mitigation for the archaeological or cultural resources, these issues will be presented to other lead agency supervisory staff and/or assigned council for review. This the lead agency shall make the determination based on the provisions of the California Environmental Quality Act with respect to archaeological resources, recommendations of the project archeologist and shall consider the cultural and religious principles and practices of the Tribe. Evidence of compliance with this mitigation measure, if a significant archaeological resource is found, shall be provided to lead agency upon the completion of a treatment plan and final report detailing the significance and treatment finding.

vii. Final Disposition. In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries: a) One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the lead agency:

viii. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place where they were found with no development affecting the integrity of the resources.

ix. Reburial of the resources on the Project property. The measures for reburial shall include, at least, the following: Measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed, with an exception that sacred items, burial goods, and Native American human remains are excluded. Any reburial process shall be culturally appropriate. Listing of contents and location of the reburial shall be included in the confidential Phase IV report. The Phase IV Report shall be filed with the lead agency under a confidential cover and not subject to Public Records Request.

x. If preservation in place or reburial is not feasible then the resources shall be curated in a culturally appropriate manner that meets State Resources Department Office of Historic Preservation Guidelines for the Curation of Archaeological Resources ensuring access and use pursuant to the Guidelines. The collection and associated records shall be transferred, including title, and are to be accompanied by payment of the fees necessary for permanent curation. Evidence of curation in the form of a letter from the curation facility stating that subject archaeological materials have been received and that all fees have been paid, shall be provided to the lead agency. There shall be no destructive or invasive testing on sacred items, burial goods, and Native American human remains. Results concerning finds of any inadvertent discoveries shall be included in the Phase IV monitoring report. Evidence of compliance with this mitigation measure, if a significant archaeological resource is found, shall be provided to lead agency upon the completion of a treatment plan and final report detailing the significance and treatment finding

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

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

Less Than Significant Impact with Mitigation Incorporated. No prehistoric or historic-era archaeological resources have been identified within the Proposed Project site as a result of background research, CHRIS database records search, or the archaeological pedestrian survey. However, the results of the NAHC SLF search yielded positive results for one of the campuses for the Proposed Project. A brief summary of the CHRIS database records search results, NAHC SLF results, historical maps and aerial photographs review, and pedestrian survey results, for both the Norco College Solar Site and the MVC Solar Site, are provided below.

Although the CHRIS records search results indicate that the areas surrounding the Proposed Project site (inclusive of both the Norco College Site and Moreno Valley College Site) are highly sensitive for the presence of prehistoric archaeological sites, the previously recorded resources are a singular site type consisting of bedrock milling stations with no associated midden or artifacts. Moreover, it is unlikely that such sites would be encountered within the Proposed Project site as there are no bedrock outcrops within the work areas. However, although the potential to encounter subsurface intact deposits to exist within native soils to the depths of proposed ground disturbance (between 4 and 8 feet bgs) is considered low, there is a possibility for archaeological resources to be encountered during Project implementation. For these reasons, the Proposed Project site should be treated as potentially sensitive for archaeological resources. In the event that unanticipated archaeological resources are encountered during Project implementation, impacts to these resources would be potentially significant.

Thus, mitigation is required to address impacts related to the inadvertent discovery of archaeological resources during construction, as outlined in **MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**. All mitigation has been subject to review by consulting tribes; recommended management strategies provided by the tribes have been directly integrated with the exception of minor revisions for clarity. **MM-CUL-1** requires that all project construction personnel participate in a Workers Environmental Awareness Program training for the proper identification and treatment of inadvertent discoveries. **MM-CUL-2** requires the retention of an on-call qualified archaeologist to conduct spot monitoring and respond to and address any inadvertent discoveries. **MM-CUL-3** requires construction work occurring within 100 feet of a cultural resource discovery be immediately halted until the qualified archaeologist, meeting the Secretary of Interior's Professional Qualification Standards for Archaeology, in coordination with Tribal Representatives that have consulted on the Project, can assess and evaluate the discovery pursuant to CEQA; this measure also outlines the protocols for the final disposition of inadvertent discoveries. Additionally, **MM-CUL-3** requires the inadvertent discovery clause be included on all construction plans. With implementation of **MM-CUL-1**, **MM-CUL-2**, and **MM-CUL-3**, potentially significant impacts to unknown archaeological resources would be reduced to **less than significant with mitigation incorporated.**

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

Less Than Significant Impact with Mitigation Incorporated. No prehistoric or historic burials were identified within the Proposed Project site as a result of the CHRIS records search or pedestrian survey. Moreover, the Proposed Project site is not part of a dedicated cemetery and as such, the likelihood of disturbing human remains is low. However, the possibility of encountering human remains within the Proposed Project site exists. In the event that human remains are inadvertently encountered during Project construction activities, impacts to these resources would be potentially significant.

Thus, mitigation is required to address impacts related to the inadvertent discovery of human remains, as outlined in **MM-CUL-4**, and **MM-CUL-5.** Adherence to these measures would ensure that impacts to human remains resulting from the Proposed Project would be **less than significant.**

MM-CUL-4 Human Remains - If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 24 hours of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

MM-CUL-5 It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or associated grave goods shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, pursuant to the specific exemption set forth in California Government Code 6254 (r), parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code 6254 (r).

3.6 Energy

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

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

Less Than Significant Impact. Impacts related to wasteful, inefficient, or unnecessary use of energy would be less than significant for both construction and operations, as discussed below.

Construction

Electricity. Temporary electric power for as-necessary lighting and electronic equipment would be provided by Southern California Edison for the Norco College site and by Moreno Valley Utility for the Moreno Valley College site. The amount of electricity used during construction would be minimal because typical demand would be generated by electrically powered hand tools. The electricity used for construction activities would be temporary and minimal; therefore, Project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity.

Natural Gas. Natural gas is not anticipated to be required during construction of the Project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below. Therefore, Project construction would not result in wasteful, inefficient, or unnecessary consumption of natural gas.

Petroleum. The primary energy consumed during construction would be associated with petroleum usage. Potential impacts were assessed for off-road equipment and on-road vehicle trips during construction, as provided by the CalEEMod outputs (see Appendix A). Fuel consumption from construction equipment and vehicle trips was estimated by converting the total carbon dioxide (CO_2) emissions anticipated to be generated by the construction of the Project to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton (MT) CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per MT CO_2 per gallon (The Climate Registry 2021). Heavy-duty construction equipment associated with construction activities, vendor trucks, and haul trucks are assumed to use diesel fuel. Worker vehicles are assumed to be gasoline fueled. All details for construction criteria air pollutant emissions modeling discussed in Appendix A are also applicable for the estimation of construction-related energy consumption.

The estimated diesel fuel usage from construction equipment, haul trucks, and vendor trucks, as well as estimated gasoline fuel usage from worker vehicles is shown in Table 9.

Table 9. Project Construction Petroleum Demand

Year	Off-Road Equipment (diesel)	Haul Trucks (diesel)	Vendor Trucks (diesel)	Worker Vehicles (gasoline)
	gallons			
2022	6,362.80	0.00	905.60	1,072.05
2023	8,998.71	0.00	2,353.19	2,393.33
Total Petroleum Consumed for Project Construction				**22,085.68**

Note: See Appendix A for details.

As shown in Table 9, the Project is estimated to consume approximately 22,086 gallons of petroleum during the construction phase.[4] Notably, the Project will be subject to the California Air Resources Board (CARB) In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles, (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled, (3) restricts the adding of older vehicles into fleets starting on January 1, 2014, and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements. Overall, because the Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state, the Project construction would not result in wasteful, inefficient, or unnecessary consumption of petroleum.

Operations

Electricity. The operational phase of the Project would require electricity for water conveyance in order to wash the panels. Approximately 6,000 gallons of water would be needed annually for panel washing, which would require about 67 kilowatt-hours (kWh) per year based on CalEEMod electricity intensity assumptions. This minimal increase in energy, as well as additional electricity currently being consumed at the campuses, would be offset by the approximately 5,045,044 kWh per year of solar electricity generated by the Project (2.1 MW at Norco College and 0.9 MW at Moreno Valley College).[5] For these reasons, electricity consumption of the Project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

Natural Gas. Natural gas would not be needed during Project operations.

Petroleum. During operations, fuel consumption would be associated with routine maintenance and panel washing at each campus site. As with construction petroleum, operational petroleum was based on converting the estimated on-road CO_2 to gallons of gasoline and diesel for worker vehicles and water trucks, respectively. Fuel estimates for the Project are provided in Table 10.

Table 10. Annual Operational Petroleum Demand

Scenario	Vehicle MT CO_2	Kg CO2/Gallon	Gallons
Gasoline	0.69	8.78	79.06
Diesel	1.29	10.21	126.76
		Total Project Petroleum Use	**205.82**

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

As depicted in Table 10, the Project would consume approximately 206 gallons of petroleum per year during operations. Over the lifetime of the Project, the fuel efficiency of the vehicles being used by the workers and

4 For context, in 2019, California consumed about 662 million barrels of oil (EIA 2022). There are 42 U.S. gallons in a barrel, so California consumes approximately 76.2 million gallons of petroleum per day, adding up to an annual consumption of 7.8 billion gallons of petroleum.

5 The estimated kWh per year generated by the solar arrays at Norco College and Moreno Valley College are based on the National Renewable Energy Laboratory PVWatts calculator available at: https://pvwatts.nrel.gov/.

trucks for the Project is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the Project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted the Advanced Clean Cars and Advanced Clean Trucks programs to accelerate the market for zero-emission vehicles in both the passenger car and medium/heavy-duty truck sectors. As such, operation of the Project is expected to use decreasing amounts of petroleum over time, due to advances in fuel economy.

In summary, the Project would consume minimal amounts of annual petroleum for infrequent maintenance and panel washing and, over time, the on-road vehicles needed for these activities would use less petroleum due to advances in fuel economy. Given these considerations, the petroleum consumption associated with the Project would not be considered inefficient or wasteful, and impacts would be **less than significant.**

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

Less Than Significant Impact. As the Project would result in a total of 5,045,044 kWh per year solar renewable energy, it is inherently energy beneficial. In alignment with Board Policy 5775, RCCD has developed a solar planning initiative to invest in on-campus PV systems. The Project would be developed under the solar planning initiative adopted by the Board in 2021 and in support of the goals of Board Policy 5775. On this basis, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be **less than significant.**

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

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

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

No Impact. The Project sites are not located within an Alquist-Priolo Earthquake Fault Zone and are not traversed by any known active fault. The Chino Fault within the Elsinore Fault Zone is located approximately 4.5 miles southwest of the Norco College Project Site and two faults within the San Jacinto Fault Zone, including the Casa Loma Fault and Claremont Fault, are located approximately 5.5 to 6 miles east of the Moreno Valley College Project site (CDOC 2021). As such, fault rupture is not anticipated on the Project sites and **no impacts** would occur.

ii) Strong seismic ground shaking?

Less Than Significant Impact. As with all areas in Southern California, the Project sites are located in a seismically active region, within which are numerous known earthquake faults. As previously discussed in Section 3.6(a)(i), there are known earthquake faults approximately 4.5 miles southwest and 5.5 miles east of the Project sites. In addition, many other regional active faults are capable of producing severe seismically induced ground shaking at the site. As a result, the Proposed Project could be exposed to strong seismically induced ground shaking. However, the Proposed Project does not include any habitable structures. Additionally, Project structures would be designed and constructed in accordance with the latest version of the California Building Code and the City Building Code relative to seismic criteria, which would provide a measure of safety for people and structures exposed to potential substantial adverse effects involving seismic-related ground shaking. As a result, neither people nor structures would be exposed to potentially substantial adverse effects, and impacts would be **less than significant.**

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. As discussed in Section 3.7 (a)(ii), the Proposed Project sites are located within a seismically active area. Liquefaction occurs when loose, water-saturated sediments lose strength and fail during strong ground shaking. Liquefaction usually occurs in areas with young, saturated unconsolidated sediments with groundwater levels of 50 feet or less. According to the Preliminary Geotechnical Investigation Report completed for the Proposed Project, included as Appendix C, the Moreno Valley College Project site has a low liquefaction potential. Although a review of hazards maps indicates a high potential for liquefaction at the Norco College Project site, high blow counts and bedrock at a depth of 15 feet observed during field investigation indicate a low liquefaction potential that should be confirmed during final design (Converse Consultants 2021). As such, impacts related to liquefaction would be **less than significant.**

c) Landslides?

Less Than Significant Impact. According to the Preliminary Geotechnical Investigation Report completed for the Proposed Project, included as Appendix C, the Moreno Valley College Project site has a low to moderate potential for landslides due to the close proximity of local foothills. Although a review of hazards maps indicates a high potential for liquefaction at the Norco College Project site, high blow counts and bedrock at a depth of 15 feet observed during field investigation indicate a low liquefaction potential (Converse Consultants 2021). As such, impacts related to landslides would be **less than significant.**

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

Short-Term Construction Impacts

Less Than Significant Impact. Construction activities such as grading may have the potential to cause soil erosion or the loss of topsoil. Because the Project would result in more than 1 acre of ground disturbance, the Project would be subject to the National Pollutant Discharge Elimination System stormwater program, which includes obtaining coverage under the State Water Resources Control Board's General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit; Order 2009-0009-DWQ). Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation. The Construction General Permit requires development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). Among the required items that must be included within a SWPPP are project design features intended to protect against substantial soil erosion as a result of water and wind erosion, commonly known as best management practices (BMPs). Typical BMPs include maintaining or creating drainages to convey and direct surface runoff from bare areas and installing physical barriers, such as berms, silt fencing, wattles, straw bales, and gabions. The implementation of a Construction General Permit, including preparation of a SWPPP and implementation of BMPs, would reduce both stormwater runoff and soil erosion impacts to acceptable levels. Therefore, short-term construction impacts associated with soil erosion would be **less than significant.**

Long-Term Operational Impacts

Less-Than-Significant Impact. Both Project sites are unpaved and are covered with vegetation, which helps to control erosion. The Proposed Project would grade the Project sites and remove vegetation. Vegetation removal would continue for the life of the Project to reduce the risk of wildfire. However, both Project sites are relatively flat and extensive erosion is not expected. However, a site-specific hydrology report will be prepared for each Project site, which will prescribe BMPs and erosion control measures, if determined to be necessary. As such, impacts related to erosion and siltation would be **less than significant.**

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

Less Than Significant Impact. According to the Preliminary Geotechnical Investigation Report completed for the Proposed Project, included as Appendix C, the Moreno Valley College Project site has a low risk of lateral spreading due to its low liquefaction potential, but the Norco College Project site has a high potential for lateral spreading (Converse Consultants 2021). However, the Project site would not include any habitable structures and would be designed in accordance with all applicable provisions established in the current California Building Code, which sets forth specific engineering requirements to ensure structural integrity, regardless of the specific characteristics of the underlying soils. Compliance with these requirements would reduce the potential risk to both people and structures with respect to a variety of geotechnical constraints. Therefore, impacts associated with unstable geologic units/soils would be **less than significant.**

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

No Impact. Expansive soils are characterized by their ability to undergo significant volume change (shrink and swell) due to variation in soil moisture content. Changes in soil moisture could result from several factors, including rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soils are typically very fine grained with a high to very high percentage of clay. Soils with moderate to high shrink-swell potential would be classified as expansive soils. According to the Preliminary Geotechnical Investigation Report completed for the Proposed Project, included as Appendix C, the soils at the Proposed Project sites have very low expansion potential (Converse Consultants 2021). Therefore, the Proposed Project would have no impact related to expansive soils.

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

No Impact. The Proposed Project does not include installation of septic tanks or alternative wastewater disposal systems. If necessary during Project construction, sanitary waste would be handled by temporary portable chemical toilets. The waste from temporary restroom facilities would be removed by a private contractor and disposed of an approved off-site location. As such, **no impacts** would occur related to the ability of on-site soils to support septic tanks or alternative wastewater disposal systems.

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

Moreno Valley College Project Site

Less Than Significant With Mitigation Incorporated. The Proposed Project is located within the northernmost Peninsular Ranges Geomorphic Province (CGS 2002; Norris and Webb 1990). This geomorphic province is characterized by northwest trending mountain ranges and valleys that extend over 900 miles from the tip of the Baja Peninsula to the Transverse Ranges (i.e., the San Bernardino and San Gabriel Mountains in Southern California). Regionally, the Peninsular Ranges are bounded to the east by the Colorado Desert and the west by the continental shelf and offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente) (CGS 2002; Norris and Webb 1990). Regional mountain ranges in the Peninsular Ranges Geomorphic Province include the Santa Ana, San Jacinto, and Santa Rosa Mountains. Geologically, these mountains are dominated by Mesozoic, plutonic igneous and metamorphic rocks that are part of the Peninsular Ranges Batholith (Southern California Batholith) (Jahns 1954).

More specifically, the Proposed Project is located within the Perris Structural Block, between the Elsinore and San Jacinto fault zones (Kennedy 1977). The Elsinore and San Jacinto fault zones are part of the greater San Andreas fault system, which is characterized by numerous strike-slip faults. According to surficial geological mapping by Dibblee and Minch (2003) at a scale of 1:24,000 and the current geological time table of Cohen et al. (2022), the study area is entirely underlain by Pleistocene (approximately 2.58 million years ago – 11,700 years ago) alluvial fan deposits (map unit Qoa). These alluvial fan deposits are flanked on the north and the south by Cretaceous (approximately 145–66 million years ago), plutonic quartz diorites (map unit qdx).

A paleontological records search request was sent to the Natural History Museum of Los Angeles County (LACM) on November 09, 2018 (McLeod 2018a), for another project on the Moreno Valley College campus and the results were received on November 27, 2018. According to the records search, no paleontological localities are documented within a 1-mile radius buffer of that project's boundaries (McLeod 2018a), which includes the Proposed Project site. However, localities are documented nearby from similar geological units that may occur beneath portions of the Proposed Project site. The nearest locality, LACM 4540, was recovered almost due east and from deposits similar to those that occur at the surface throughout most of the Proposed Project area. The specimen consisted of a fossil horse (*Equus*) recovered from an unspecified depth below the surface (McLeod 2018a). LACM did not recommend paleontological monitoring in areas underlain by igneous rocks because they do not preserve recognizable fossils; nor did they recommend monitoring of shallow excavations into older Quaternary alluvial deposits because, being so close to the source area, they are likely coarse grained, which is not conducive to fossil preservation (McLeod 2018a). However, during construction monitoring for the new student welcome center project on campus, Dudek paleontologists observed medium- to coarse-grained sandstone throughout the excavations for that project (Dudek 2020). These deposits had the potential to preserve significant paleontological resources.

Past excavation activities in the area surrounding the Proposed Project site have encountered paleontological resources in Pleistocene alluvial fan deposits. Review of the paleontological literature revealed numerous Pleistocene older alluvial fossil vertebrate localities within Riverside County. For instance, in his compilation of Pleistocene vertebrate localities in California, Jefferson (1991) lists many Pleistocene older alluvial or equivalent localities from Riverside County that have yielded fossil fish, amphibians, reptiles, birds, and mammals. The Diamond Valley Lake Local Fauna, which was recovered from Pleistocene lacustrine and fluvial deposits near the city of Hemet in Riverside County, yielded over

100,000 fossil specimens including plants, invertebrates, and vertebrates (Jefferson 1991; Springer et al. 2009). With the exclusion of asphaltic localities such as the La Brea Tar Pits, the Diamond Valley Lake Local Fauna represents the largest late Pleistocene vertebrate fauna in the southwest and continues to yield important scientific data (Springer et al. 2009).

No paleontological resources were identified within the Proposed Project area as a result of institutional records search and desktop geological and paleontological review, and the Proposed Project site is not anticipated to be underlain by unique geologic features. Intact paleontological resources may be present within the Pleistocene alluvial fan deposits mapped within the Proposed Project area. Plutonic igneous rocks, which are likely present at an unknown depth beneath the surface, have no paleontological sensitivity, Given the proximity of past fossil discoveries within Pleistocene sedimentary deposits in the surrounding area and the potential for intact, undisturbed, fine-grained Pleistocene age deposits on the surface or at depth, the Proposed Project is moderately to highly sensitive for supporting paleontological resources in areas underlain by Pleistocene alluvial fan deposits. In the event that intact paleontological resources are located beneath the Proposed Project site, ground-disturbing activities associated with construction of the Proposed Project, such as grading during site preparation, trenching for utilities, and large diameter drilling (more than 2 feet diameter), have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of MM-GEO-1, impacts would be reduced to below the level of significance. Impacts of the Proposed Project are considered **less than significant with mitigation incorporated** during construction.

MM-GEO-1 Prior to commencement of any grading activity on site, the Riverside Community College District shall retain a certified Riverside County paleontologist. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP 2010) and shall outline the following:

- Requirements for a preconstruction meeting that shall include a worker environmental awareness training
- Requirements for the number of construction workers that shall attend the preconstruction meeting
- Locations within the Proposed Project site at which paleontological monitoring shall be required based on construction plans and/or geotechnical reports
- Procedures for adequate paleontological monitoring and discoveries treatment, and paleontological methods (including sediment sampling for microvertebrate fossils), reporting, and collections management

The certified paleontologist shall attend the preconstruction meeting and a paleontological monitor shall be on site during all rough grading and other significant ground-disturbing activities in previously undisturbed, fine-grained older Quaternary alluvial deposits. These deposits may be encountered at any depth below any fill materials. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find.

Following the paleontological monitoring program, a final monitoring report shall be submitted to RCCD for review and approval. The report should summarize the monitoring program and include geological observations and any paleontological resources recovered during paleontological monitoring for the Proposed Project.

Norco College Project Site

Less Than Significant With Mitigation Incorporated. The Proposed Project is located within the northernmost Peninsular Ranges geomorphic province (CGS 2002; Norris and Webb 1990). This geomorphic province is characterized by northwest-trending mountain ranges and valleys that extend over 900 miles from the tip of the Baja Peninsula to the Transverse Ranges (i.e., the San Bernardino and San Gabriel Mountains in Southern California). Regionally, the Peninsular Ranges are bounded to the east by the Colorado Desert and the west by the continental shelf and offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente) (CGS 2002; Norris and Webb 1990). Regional mountain ranges in the Peninsular Ranges geomorphic province include the Santa Ana, San Jacinto, and Santa Rosa Mountains. Geologically, these mountains are dominated by Mesozoic, plutonic igneous and metamorphic rocks that are part of the Peninsular Ranges batholith (Southern California batholith) (Jahns 1954).

More specifically, the Proposed Project is located within the Santa Ana Structural Block, along the Chino Fault zone (Morton et al. 2002). The Chino fault zone is part of the greater San Andreas Fault system, which is characterized by numerous strike-slip faults. The Chino fault zone is a northern extension of the Elsinore Fault zone. According to surficial geological mapping by Morton et al. (2002) and Morton and Miller (2006) at a scale of 1:24,000 and 1:100,000, respectively, and the current geological time table of Cohen et al. (2022) the southernmost Proposed Project area is underlain by Cretaceous (approximately 145 million years ago – 66 million years ago) Micropegmatitic granite of Gavilan Ring Complex, consisting of pink-tinted leucocratic granite (map unit Kmp), and the northern Proposed Project area is underlain by Cretaceous La Sierra Tonalite (map unit Klst).

A paleontological records search request was sent to LACM on August 16, 2018 (McLeod 2018b) for another project on the Norco College campus, and the results were received on August 30, 2018. According to the records search, no paleontological localities are documented within of the Proposed Project boundaries (McLeod 2018b), but the LACM did report a few localities nearby from sedimentary deposits that are not anticipated within the Proposed Project area.

No paleontological resources were identified within the Proposed Project area as a result of institutional records search and desktop geological and paleontological review, and the proposed Project site is not anticipated to be underlain by unique geologic features. The Proposed Project area is mapped as being underlain by Cretaceous plutonic igneous rocks that have no potential to yield significant paleontological resources. As is the case with most other development projects that involve earthwork activity, there is always a possibility that subsurface construction activity could unearth a potentially significant paleontological resource. In the event that intact paleontological resources are inadvertently uncovered during Project excavations, there is the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. If such discoveries occur, a qualified paleontologist should be retained to evaluate the discovery. As such, implementation of **MM-GEO-2** would be required to ensure that subsurface construction activity complies with the standard procedures for treatment of unanticipated discoveries of paleontological resources.

MM-GEO-2 In the event that paleontological resources (e.g., fossils) are unearthed during Project earthmoving, the area of discovery will be roped off with a 50-foot radius buffer and qualified paleontologist should be notified and retained to assess the find and provide appropriate mitigation. Once documentation and collection of the find is completed, the qualified paleontologist will remove the rope and allow grading to recommence in the area of the find. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the Proposed Project that outlines the future mitigation required for the Project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP 2010).

3.8 Greenhouse Gas Emissions

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

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

Less Than Significant Impact. Climate change refers to any significant change in measures of climate (e.g., temperature, precipitation, or wind patterns) lasting for an extended period of time (i.e., decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system, and many factors (natural and human) can cause changes in Earth's energy balance. The greenhouse effect is the trapping and buildup of heat in the atmosphere near the Earth's surface (the troposphere). The greenhouse effect is a natural process that contributes to regulating the Earth's temperature, and it creates a livable environment on Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise. Global climate change is a cumulative impact; a project contributes to this impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. Thus, GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008).

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (see also CEQA Guidelines Section 15364.5).[6] The three GHGs evaluated herein are CO_2, CH_4, and N_2O because these gases would be emitted during Proposed Project maintenance.

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare each GHG's ability to trap heat in the atmosphere relative to another gas. The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in MT of CO_2 equivalent (CO_2e). Consistent with CalEEMod Version 2020.4.0, this GHG emissions analysis assumed the GWP for CH_4 is 25 (i.e., emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008a). This guidance document explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO_2e per-year screening level threshold for stationary source/ industrial projects for which the SCAQMD is the lead agency (SCAQMD 2008b). The 10,000 MT CO_2e per-year threshold, which was derived from GHG reduction targets established in Executive Order S-03-05, was based on the conclusion that the threshold was consistent with achieving an emissions capture rate of 90% of all new or modified stationary source projects.

Construction Emissions

Construction of the Project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. CalEEMod was used to estimate GHG emissions during construction based on the same assumptions described in Section 3.3, Air Quality, and Appendix A. Table 11 presents total construction GHG emissions for the Project (both Norco and Moreno Valley sites).

Table 11. Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons			
2022	83.62	0.02	<0.01	84.64
2023	136.92	0.03	<0.01	138.90
			Total	**223.55**
			Annualized emissions over 30 years (metric tons per year)	***7.45***

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gas.
See Appendix A for complete results. Values of "<0.01" indicate that the estimated emissions are less than two decimals.

6 Climate-forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in the California Health and Safety Code Section 38505; impacts associated with other climate-forcing substances are not evaluated herein.

As shown in Table 11, the estimated total GHG emissions during construction would be approximately 224 MT CO_2e. Estimated Project-generated construction emissions amortized over 30 years would be approximately 7.5 MT CO_2e per year.

Operational Emissions

CalEEMod was used to estimate potential operational GHG emissions from mobile sources and water supply associated with routine maintenance and panel washing for the Project. Table 12 presents the increase in GHG emissions from the Project.

Table 12. Estimated Annual Operation GHG Emissions

Emissions Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Mobile	1.99	<0.01	<0.01	2.05
Water	0.01	0.00	0.00	<0.01
			Total	**2.05**
			Amortized Construction Emissions	*7.45*
			Total Project Operations with Amortized Construction Emissions	**9.50**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix A for complete results. Values of "<0.01" indicate that the estimated emissions are less than two decimals.

As shown in Table 12, the estimated increase in GHG emissions from operation of the Project would be approximately 10 MT CO_2e per year, including amortized construction emissions. This increase in GHGs would be negligible. In addition, the increase of 2.1 MW of solar electricity generation at Norco College (about 3,523,447 kWh per year) and 0.9 MW of solar electricity generation at Moreno Valley College (about 1,521,597 kWh per year) would offset approximately 628 MT CO_2e per year and 314 MT CO_2e per year, respectively, for a total reduction of 942 MT CO_2e per year from the Project.[7] After subtracting the GHGs generated by the Project, there would be a net reduction of approximately 932 MT CO_2e per year associated with Project operations. This impact would be **less than significant.**

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

Less Than Significant Impact. The Proposed Project would have a less than significant impact related to applicable plans, policies, or regulations, as discussed below.

RCCD's Board of Trustees Board Policy 5775 - Sustainability & Environmental Responsibility

In alignment with Board Policy 5775, RCCD has developed a solar planning initiative to invest in on-campus PV systems. The Project would be developed under the solar planning initiative adopted by the Board in 2021 and in support of the goals of Board Policy 5775, including the generation of renewable energy for the campuses.

7 The GHGs offset by the solar power generated at each campus site are based on estimated kWh per year generated by the solar arrays at each campus (per the National Renewable Energy Laboratory PVWatts calculator, available at: https://pvwatts.nrel.gov/) and the GHG intensity factors of the respective utility company (i.e., SCE for Norco College and the Statewide Average for Moreno Valley College, since Moreno Valley Utility was not available in CalEEMod).

County of Riverside Climate Action Plan

The County of Riverside Climate Action Plan (CAP) is not applicable to the Project; however, a brief analysis of the Project's potential to conflict with the County of Riverside CAP is provided for informational purposes.

The County of Riverside CAP, originally adopted in 2015 and updated in 2019, presents a comprehensive set of actions to reduce its internal and external GHG emissions to 15% below 2008 GHG emission levels by 2020, consistent with the AB 32 Scoping Plan. The County provided the CAP update in November 2019 and was adopted on December 17, 2019. The CAP update builds upon the information gathered by the GHG inventories and forecasts emissions for 2030 and 2050. The CAP update was designed under the premise that the County of Riverside, and the community it represents, is uniquely capable of addressing emissions associated with sources under Riverside County's jurisdiction and that Riverside County's emission reduction efforts should coordinate with the state strategies of reducing emissions in order to accomplish these reductions in an efficient and cost-effective manner. The CAP update proposes new targets consistent with the state targets to meet the requirements of Senate Bill (SB) 32. The state recommends a 15% reduction below 2005–2008 baseline levels by 2020, a 49% reduction below 2008 levels by 2030, and an 80% reduction below 2008 levels by 2050. In order to meet these goals, the County plans to reduce community-wide emissions to 3,576,598 MT CO_2e per year by 2030 and 1,192,199 MT CO_2e per year by 2050 (County of Riverside 2019a). Per the CAP, each new project within the County subject to CEQA would require to meet one of the following criteria:

- Projects below the screening threshold of 3,000 MT CO_2e per year for GHGs are determined to be less than significant, and no further GHG analysis would be required, or
- Projects that exceed the screening threshold are able to tier from the GHG analysis associated with the CAP by accumulating 100 points from the Screening Tables in Appendix F of the CAP.

As discussed under threshold 3.8(a), the Project would result in a net reduction of 932 MT CO_2e per year; therefore, the Project would not exceed the County of Riverside's CAP threshold of 3,000 MT CO_2e per year. As such, the Project would not conflict with the County of Riverside's CAP.

Senate Bill 32 and Executive Order S-3-05

Executive Order No. S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. CARB has outlined a number of potential strategies for achieving the 2030 reduction target of 40% below 1990 levels, as mandated by SB 32. These potential strategies include using renewable resources for half of the State's electricity by 2030, increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles, reducing the rate of growth in vehicle-miles traveled, supporting other alternative transportation options, and use of high-efficiency appliances, water heaters, and HVAC systems. The Project would support the statewide GHG reduction goals by providing renewable solar electricity to Norco and the Moreno Valley Colleges and offsetting equivalent utility provided energy, which would result in an approximate net reduction of 932 MT CO_2e per year. Moreover, the Project would not exceed the County of Riverside CAP threshold of 3,000 MT CO_2e per year. While the Project is not subject to the County of Riverside CAP requirements, compliance with goals set out in the document shows that the Project emission rates align with regional and statewide goals. Because the Project would result in an overall reduction in GHG emissions, this analysis provides support for the conclusion that the Project would not impede the state's trajectory toward the previously described statewide GHG reduction goals for 2030 or 2050.

Summary

Based on the considerations previously outlined, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; therefore, the impact would be **less than significant.**

3.9 Hazards and Hazardous Materials

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

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk 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?

Less than Significant Impact. Construction of the Projects would involve the use of small amounts of hazardous materials typically used for construction, such as fuels and greases, to fuel and service construction equipment. The small quantities of chemicals to be stored at the sites during construction would be stored in appropriate containers in an enclosed and secured location, such as portable outdoor hazardous materials storage cabinets equipped with secondary containment to prevent contact with rainwater. The use, storage, transport, and disposal of hazardous materials used in construction of each facility would be completed in accordance with federal, state, and County regulations. Construction of the Projects is not anticipated to produce, use, store, transport, or dispose of extremely hazardous substances (i.e., those governed pursuant to 40 CFR 335). Material Safety Data Sheets for all applicable materials present on site would be made readily available to on-site personnel.

The Project will use crystalline silicone PV technology. None of the panels being considered contain materials that are classified as hazardous wastes because the chemicals within PV modules are highly stable and would not be available for release to and interaction with the environment. If a panel is broken during construction or operation, the pieces would be cleaned up completely and returned to the manufacturer for recycling. During future decommissioning, the solar panels would be removed, placed in secure transport containers for storage, and transported to another facility for reuse, material recycling, or disposal in accordance with regulations in effect at the time of closure.

Throughout construction, waste materials would be sorted on site and transported to appropriate waste management facilities. Non-hazardous construction materials that cannot be reused or recycled would likely be disposed of at municipal county landfills. Hazardous waste and electronic waste would not be placed in a landfill but would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling).

As discussed in detail in Section 3.9 (d) below, Norco College, including the Project site, is currently under a VCA, initiated in 2011 and updated in 2019 (CalEPA 2019) and is encumbered with a 2016 LUC between RCCD and DTSC (RCCD and DTSC 2016). As detailed in Section 3.9(d), adherence to the applicable requirements of the LUC and VCA would ensure that impacts would be **less than significant.**

During operation of the Proposed Project, small quantities of a variety of hazardous materials would be transported to the site for miscellaneous, general maintenance activities. Chemicals would be stored in appropriate chemical storage facilities. Bulk chemicals are not expected to be used on site; chemicals would be stored in smaller returnable delivery containers. Waste lubricating oil would be recovered and recycled by a waste oil recycling contractor. Small quantities of diesel fuel and gasoline may also be used and stored at the facility for use in off-road service vehicles and generators. Transformers located on site would be equipped with coolant that is biodegradable and contains no polychlorinated biphenyls or other toxic compounds. BMPs would be employed in the use and storage of all hazardous materials within the Project sites, including the use of containment systems in appropriate locations. Compliance with applicable state and federal regulations, would minimize the risk of damage or injury from use, disposal, and transport of hazardous materials to **less-than-significant levels.**

Therefore, through conformance with applicable regulations and adherence to the applicable requirements of the LUC and VCA at the Norco College Project site, the Proposed Projects would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and impacts would be **less than significant.**

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?

Less than Significant Impact. As noted above, construction of the Proposed Project would involve the use of small amounts of hazardous materials, such as fuels and greases to fuel and service construction equipment. Improper handling and storage of these hazardous materials could result in accidental release if not managed appropriately. The small quantities of chemicals to be stored at the Project sites during construction would be stored in appropriate containers, in an enclosed and secured location, such as portable outdoor hazardous materials storage cabinets equipped with secondary containment to prevent contact with rainwater.

The required SWPPP must include a list of potential pollutants (i.e., hazardous materials, fugitive dust, sediment, concrete waste), identify fueling areas, and include BMPs to prevent and limit these pollutants from reaching stormwater runoff. Spill response plans would be developed prior to each Project construction and operation, and personnel would be made aware of the procedures for spill cleanup and the procedures to report a spill. Spill cleanup materials and equipment appropriate to the type and quantity of chemicals and petroleum products expected would be located on site and personnel would be made aware of their location. The Projects would implement a Project SWPPP, and spill response plans, and would comply with all applicable local, state, and federal regulations to reduce the potential that spills or leaks of hazardous materials would occur. In addition, if quantities exceed regulatory thresholds, a Spill Prevention, Control and Countermeasure Plan and a Hazardous Materials Business Plan, which will include additional hazardous material requirements, would be developed for the Projects.

The Norco College Project component includes operation of a BESS that would consist of batteries housed in storage containers. Potential hazards related to BESS could include fire, gaseous build up, explosion, and hazardous materials. The major components of the battery system include the inverter, cells, modules, enclosure, and safety system. The inverter converts the direct current electricity produced by the solar system into alternating current electricity that can safely be transferred into the electrical grid. The inverter contains no liquids or chemicals. The battery cell and modules for the Projects would use lithium ion technology, which would be housed in an enclosure that contains integrated fire suppression technology and controls.

The BESS would be designed, constructed, and operated in accordance with applicable industry best practices and regulatory requirements, including, but not limited to, National Fire Protection Association 855 (Standard for the Installation of Stationary Energy Storage Systems) and Section 1206 of the California

Fire Code and, if applicable, certified to UL 9540. The configuration of the safety system would be determined based on site-specific environmental factors and associated fire response strategy and would contain a safety system that would be triggered automatically when the system senses imminent fire danger. A fire safety system would be provided within each on-site battery enclosure. Components of the system could include a fire panel, aspirating hazard detection system, smoke/heat detector, strobes/sirens, and suppression tanks. If applicable, the BESS would be tested to UL 9540A, which would confirm that the system will self-extinguish without active fire-fighting measures. The results of this test are used to inform facility safety system design and emergency response plans, which would be shared with first responders. If applicable, the system would use a chemical agent suppressant-based system to detect and suppress fires. If smoke or heat were detected, or if the system were manually triggered, an alarm would sound, horn strobes would flash, and the system would release suppressant, typically FM 200, NOVEC 1230, or similar from pressurized storage cylinders. However, final safety design would follow applicable standards and would be specific to the battery technology chosen. Implementation and compliance with these design and safety regulations would reduce the impact to **less than significant.**

In summary, through conformance with applicable regulations, the proposed Projects would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be **less than significant.**

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

Less than Significant Impact. Both Proposed Project sites are located within 0.25 miles of existing schools. John F. Kennedy Middle College High School is immediately south of the Norco College Project site and Lasselle Elementary School is approximately 0.25 miles southwest of the Moreno Valley College Project site. However, as detailed in Sections 3.9(a), 3.9(b) and 3.9(d), impacts related to the handling of hazardous materials, substances or wastes would be less than significant with adherence to applicable regulations and adherence to the applicable requirements of the LUC and VCA at the Norco College Project site and therefore, impacts to schools within 0.25 miles of the Project sites would also be **less than significant.**

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

Less than Significant Impact. The Moreno Valley College Project site is not included on any list of hazardous materials sites compiled pursuant to Government Code Section 65962. The discussion contained herein pertains to the Norco College Project site. Norco College is currently under a VCA, initiated in 2011 and updated in 2019 (CalEPA 2019) and is encumbered with a 2016 LUC between RCCD and DTSC (RCCD and DTSC 2016).

The Norco College property was historically owned by the U.S. Navy, which conducted various operations at the site including a hospital incinerator and landfill, ordnance bunkers and explosive load testing, small ordnance burn piles and ordnance and explosives testing (Dudek 2021e). According to the LUC, "hazardous substances, including antimony, cadmium, copper, lead, silver, zinc, dioxins, and furans remain at the Property above levels acceptable for unrestricted land use. Additionally, the Property has not been fully surveyed and characterized to determine if other hazardous substances above levels acceptable for unrestricted land use also remain in soils, soil gases, or groundwater." However, the LUC further states that "The Department has also concluded that the Property, as remediated and when in compliance with the Environmental Restrictions of this Covenant, does not present an unacceptable risk to present human health or safety or the environment from exposure to hazardous substances in soils or groundwater".

A Historical Hazards Evaluation conducted to assess the property does not identify any historical sites of contamination that overlap with the Project site or identify the Project site as an area of- concern (Dudek 2021a). The nearest historically contaminated site is a landfill site located to the south of the Project site where John F. Kennedy Middle College High School is currently located. Remediation of this area was completed in 2005 for construction of the school. However, one of the requirements of the LUC is that a soil management plan, approved by DTSC, is required prior to disturbance of soils at or below 4 feet bgs in developed areas or any soils in undisturbed areas on the campus. Any soils brought to the surface must be managed according to applicable provisions of state and federal law. The Proposed Project involves ground disturbing activities, estimated to be 6 to 10 feet below grade. As such, the Project will be required to comply with the applicable restrictions outlined in the LUC.

Multiple requirements are included in the VCA and are applicable to the Proposed Project, such as requirements for completion of work plans, health risk assessments, soil management plans, and remediation work plans for activities conducted on the subject property which require excavation/disturbance of soil.

A Subsurface Investigation Work Plan (Work Plan) was prepared for several solar array sites within the Norco campus, including the Project site, pursuant to the VCU and LUC and was submitted to DTSC in November of 2021 (Dudek 2021e). The Work Plan was approved by DTSC in January of 2022 (DTSC 2022). Subsequently, a Subsurface Investigation Report, Norco College Proposed Solar Project (Report) was prepared and submitted to DTSC in August of 2022 (Dudek 2022). DTSC granted conditional approval of the Report on October 4, 2022. Resubmittal of the Report is required within 60 days of October 4 which addresses comments received by DTSC's Geological Services Branch and Human and Ecological Risk Office.

Therefore, with adherence to the applicable requirements of the LUC and VCA, including adherence to the approved Work Plan, impacts would be **less than significant**.

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

No Impact. Neither Project site is within an airport land use plan. The nearest airport to the Norco College Project site is the Corona Municipal Airport, located approximately 2.5 miles southwest of the Project site. The nearest airport to the Moreno Valley College Project site is Perris Valley Airport, located approximately 8.5 miles south of the Project site. As such, neither Project site is within 2 miles of a public airport and there would be **no impact** related to safety or excessive noise.

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

Less than Significant Impact. The Draft Riverside Community College District Emergency Operations Plan addresses how RCCD will respond to extraordinary events, major incidents, or disasters, from mitigation and preparation through response and recovery. The Plan is designed to protect lives and property through effective use of pre-planning and training, exercises and drills, and available personnel and resources during emergency operations (RCCD 2019).

Construction of the Proposed Project at both Project sites would occur at a distance from the main campuses and all habitable structures. No lane closures would be required and access to campus buildings would not be impeded. Once constructed, operation of the Proposed Project would not result in any actions that would significantly impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts associated with adopted emergency response plans or emergency evacuation plans are **less than significant.**

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

Less than Significant Impact with Mitigation Incorporated. The Norco College Project site in not located within a Moderate, High or Very High Fire Hazards Severity Zone (City of Norco 2013). The closets VHFHSZ is located approximately 1.5 miles east of the Project site. The Project site is separated from this VHFHSZ by intervening urban development as well as the I-15 freeway. The next closest VHFHSZ, which is much larger, is located approximately 2.3 miles from the Project site in the same direction. There are also VHFHSZs to the west and southwest of the Project site, but they are also separated by intervening urban development and, excepting a small sliver of VHFHSZ immediately adjacent to the SR 91 in Corona (more than 4 miles from the Project site), are also separated from the Project site by either the SR 91 or SR 71 freeways (CAL FIRE 2022). As such, the Norco College Project site would not expose people or structures to a significant risk involving wildland fires. The Moreno Valley College Project site is located in a VHFHSZ in a Local Responsibility Area (CAL FIRE 2022) and is adjacent to open, undeveloped hillsides. As such, the Moreno Valley College Project site could expose people or structures to risk involving wildland fires. However, safety design standards and the incorporation of applicant proposed measure (APM) FIRE-1 and MM FIRE-1 would reduce impacts to **less than significant.** See Section 3.2 for APM and MM language and a detailed discussion of wildfire risk associated with the Moreno Valley College Project site.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. **HYDROLOGY AND WATER QUALITY** – Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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?

Short-Term Construction Impacts

Less than Significant Impact. Construction of the Proposed Project would include earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Stormwater runoff during the construction phase may contain silt and debris, resulting in a short-term increase in the sediment load of the municipal storm drain system. Substances such as oils, fuels, and solvents may be inadvertently spilled on the Project site and subsequently conveyed via stormwater to nearby drainages, watersheds, and groundwater.

Because the Project at each Project site would result in more than 1 acre of ground disturbance, each Project site would be subject to the National Pollutant Discharge Elimination System stormwater program, which includes obtaining coverage under the State Water Resources Control Board's Construction General

Permit. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation. The Construction General Permit requires development and implementation of a SWPPP. A SWPPP would be developed and implemented at each Project site. Among the required items that must be included within a SWPPP are project design features intended to protect against substantial soil erosion as a result of water and wind erosion, commonly known as BMPs. The implementation of a Construction General Permit, including preparation of a SWPPP and implementation of BMPs, would reduce stormwater runoff during Project construction impacts to acceptable levels. It follows that because construction of the Project would not violate any water quality standards or waste discharge requirements, the Project would not otherwise substantially degrade surface or groundwater quality. Therefore, short-term construction impacts associated with water quality would be **less than significant.**

Long-Term Operational Impacts

Less than Significant Impact. Both Project sites are currently unpaved and undeveloped. The Proposed Project would not include paving and would not substantially increase the amount of impervious surfaces such that stormwater runoff would increase. As discussed in 3.9(a), small quantities of hazardous materials would be used during operation for miscellaneous, general maintenance activities. Chemicals would be stored in appropriate chemical storage facilities. BMPs would be employed in the use and storage of all hazardous materials within the Project sites, including the use of containment systems in appropriate locations. Compliance with applicable state and federal regulations, would minimize the risk of spills which could impact water quality and impacts would be **less than significant.**

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?***

Less than Significant Impact. Construction and operation of the Proposed Project would not require a substantial amount of water. Water would be used for dust control during construction such as during grading and other ground-disturbing activities. Water use during operations would be primarily for twice-annual panel washing (under 1,000 gallons per MW) and general maintenance activities, which would occur on a limited periodic basis. The water used during construction and operation would be provided by water trucks that would be filled off site, as no water utility connections are present at the site and none are proposed as part of the Project. In the event that water trucks used for the Proposed Project were filled from sources utilizing a high percentage of groundwater, the minimal water requirements of the Project would not substantially decrease groundwater supplies from those sources.

With respect to groundwater recharge, the Project sites are currently undeveloped, and the surface is pervious, allowing groundwater recharge. The Project would introduce minimal new impervious surfaces from solar panels and other equipment. However, the solar panels would only nominally impede infiltration of rainfall as and the intervening areas between panel foundations would be unpaved and pervious. As such, the Proposed Project would not interfere substantially with groundwater recharge. Therefore, impacts related to groundwater management would be **less than significant.**

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

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

Less than Significant Impact. Both Project sites are unpaved and are covered with vegetation, which helps to control erosion. The Proposed Project would grade the Project sites and remove vegetation. Vegetation removal would continue for the life of the Project to reduce the risk of wildfire. However, both Project sites are relatively flat and extensive erosion is not expected. However, a site-specific hydrology report will be prepared for each Project site, which will prescribe BMPs and erosion control measures, if determined to be necessary. As such, impacts related to erosion and siltation would be **less than significant.**

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

Less than Significant Impact. As discussed in 3.10(b), the Proposed Project would only minimally increase the amount of impervious surface at the Project sites and would largely retain the ability for surface water to infiltrate. As such, the Proposed Project would not substantially increase the rate or amount of surface runoff which would result in flooding and impacts would be **less than significant.**

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?***

Less than Significant Impact. As discussed in 3.10(b), the Project would not use a substantial amount of water during either construction or operations and would largely retain the ability for surface water to infiltrate on site. As such, the Project would not create or contribute a substantial amount of runoff water that would exceed stormwater drainage capacity. As discussed in 3.10(a) and in Section 3.9, the Project would not involve the use of substantial quantities of chemicals or other hazardous materials during either construction or operations and the use of any such materials would adhere to applicable regulations and would not add substantial polluted runoff. As such, the Project would not contribute substantial runoff water or create a substantial source of polluted runoff and impacts would be **less than significant.**

iv) ***Impede or redirect flood flows?***

No Impact. Neither Project site contains a stream or river which would be redirected as a result of the Project. Additionally, as discussed in 3.10(b), the Project would introduce minimal new impervious surfaces and the intervening areas between individual solar panel foundations would be unpaved and pervious, allowing existing on site infiltration to continue. As such, the Proposed Project would have **no impact** related to impeding or redirecting flows.

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

No Impact. Both Project sites are located in unshaded (X) Federal Emergency Management Agency Flood Zones, indicating areas not identified as flood zones (County of Riverside 2022). As such, the Proposed Project sites are not at risk of inundation by flood, tsunami or seiche and there would be **no impact.**

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

Less than Significant Impact. As described in Sections 3.10(a) through (c), the Proposed Project would not involve the use of a substantial amount of water during either construction or operations. The Project would not involve a substantial increase in the amount of impervious surface at the Project sites and onsite infiltration would continue. Construction of the Proposed Project would require obtaining coverage under the State Water Resources Control Board's Construction General Permit and would include development and implementation of a SWPPP and appropriate BMPs. Operation of the Project would involve minimal use of common chemicals, which would be used and stored in compliance with applicable regulations and would not add substantial polluted runoff. Therefore, impacts associated with conflict with a water quality control plan or sustainable groundwater management plan would be **less than significant.**

3.11 Land Use and Planning

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

a) Would the project physically divide an established community?

No Impact. The Proposed Project would be located on undeveloped land within the property of two RCCD campuses. Both Project sites are located away from the main campus buildings and would not impede access to any campus facilities. As such, the Proposed Project would have **no impact** related to physically dividing an established community.

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

No Impact. In 2011, the RCCD Board of Trustees adopted Board Policy 5775 – Sustainability & Environmental Responsibility which states that "[t]he Riverside Community College District recognizes its responsibility to exercise environmental stewardship and to economically manage the use of buildings, land, and natural resources. It is the intent of the District to create a set of operating principles and guidelines in the execution of its responsibilities to facilities' design and operation; campus management and teaching and learning, thereby minimizing negative environmental impacts of activities under its control and oversight" (RCCD 2011). In alignment with Board Policy 5775, RCCD has developed a solar planning initiative to invest in on-campus PV systems. The Proposed Project would be developed under the solar planning initiative adopted by the Board in 2021 and in support of the goals of Board Policy 5775. As such, the Proposed Project would be supportive of RCCD's policy established for environmental stewardship and protection and would have **no impact** related to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

3.12 Mineral Resources

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

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?

Less than Significant Impact. The Norco College Project site is located in an MRZ-3a Zone, which indicates an area of known mineral deposits that may qualify as mineral resources. The potential resource is crushed rock for construction-related purposes (City of Norco 2014). However, the Proposed Project site is small, is located within the Norco College campus property and is surrounded by urban development, making it an undesirable site for mineral extraction. Additionally, the City of Norco General Plan indicates that in general, the City's position is that there are more suitable areas in other jurisdictions where construction material is available in larger quantities that are more easily accessible and marketable for long-term extraction (City of Norco 2014). Therefore, use of the Project site for mineral extraction would be highly unlikely even if resources are present.

The Moreno Valley College Project site is located in an MRZ-3 Zone, which indicates an area that contains known mineral deposits, the significance of which cannot be evaluated from available data (City of Moreno Valley 2021). However, the Proposed Project site is small, is located within the Moreno Valley College campus property and has urban development to the north, west and south, making it an undesirable site for mineral extraction. Additionally, there are no active mineral resource extraction facilities within the City of Moreno Valley and no areas delineate as mineral resource recovery sites or designate for mineral resource production (City of Moreno Valley 2021).

Therefore, the Proposed Project would have a **less-than-significant impact** on the availability of known mineral resources.

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

No Impact. As described in 3.13(a), neither Proposed Project site is delineated as a locally important mineral resource recovery site. As such, the Proposed Project would have **no impact** on the availability of a locally important mineral resource recovery site.

3.13 Noise

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

Noise is defined as unwanted sound. Sound may be described in terms of level or amplitude (measured in decibels [dB]), frequency or pitch (measured in hertz or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the amplitude of sound is the dB. Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale is used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against low and very high frequencies in a manner approximating the sensitivity of the human ear. Several descriptors of noise (noise metrics) exist to help predict average community reactions to the adverse effects of environmental noise, including traffic-generated noise, on a community. These descriptors include the equivalent noise level over a given period (L_{eq}), the statistical sound level, the day–night average noise level (L_{dn}), and the community noise equivalent level (CNEL). Each of these descriptors uses units of dBA. Table 13 provides examples of A-weighted noise levels from common sounds. In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable; a change of 5 dB is clearly noticeable; and a change of 10 dB is perceived as doubling or halving of the sound level.

Table 13. Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
—	110	Rock band
Jet flyover at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 mph)	80	Food blender at 1 meter (3 feet) Garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area Heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban daytime	50	Large business office Dishwasher, next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime	30	Library
Quiet rural night time	20	Bedroom at night, concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.

L_{eq} is a sound energy level averaged over a specified period (typically no less than 15 minutes for environmental studies). L_{eq} is a single numerical value that represents the amount of variable sound energy received by a receptor during a time interval. For example, a 1-hour L_{eq} measurement would represent the average amount of energy contained in all the noise that occurred in that hour. L_{eq} is an effective noise descriptor because of its ability to assess the total time-varying effects of noise on sensitive receptors. L_{max} is the greatest sound level measured during a designated time interval or event.

Unlike the L_{eq} metrics, L_{dn} and CNEL metrics always represent 24-hour periods, usually on an annualized basis. L_{dn} and CNEL also differ from L_{eq} because they apply a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when speech and sleep disturbance is of more concern). "Time weighted" refers to the fact that L_{dn} and CNEL penalize noise that occurs during certain sensitive periods. In the case of CNEL, noise occurring during the daytime (7:00 a.m.–7:00 p.m.) receives no penalty. Noise during the evening (7:00 p.m.–10:00 p.m.) is penalized by adding 5 dB, while nighttime (10:00 p.m.–7:00 a.m.) noise is penalized by adding 10 dB. L_{dn} differs from CNEL in that the daytime period is defined as 7:00 a.m.–10:00 p.m., thus eliminating the evening period. L_{dn} and CNEL are the predominant criteria used to measure roadway noise affecting residential receptors. These two metrics generally differ from one another by no more than 0.5 dB to 1 dB and as such, are often treated as equivalent to one another.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as blasting, pile driving, and heavy earthmoving equipment.

Several different methods are used to quantify vibration. Peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square amplitude is most frequently used to describe the effect of vibration on the human body and is defined as the average of the squared amplitude of the signal. Decibel notation is commonly used to measure root mean square. The decibel notation acts to compress the range of numbers required to describe vibration.

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. In addition, high levels of vibration can damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes). Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

Sensitive Receptors

Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would be considered noise and vibration sensitive and may warrant unique measures for protection from intruding noise. The nearest sensitive receptors near the Norco College Solar Project site include residential uses and a senior center located to the east and the Norco College central core campus located southwest of the proposed solar site. Sensitive receptors near the Moreno Valley solar Project site include residential uses located to the north and northwest of the proposed solar site and the Moreno Valley College central core campus located to the southeast. These sensitive receptors represent the nearest land uses with the potential to be impacted by construction and operation of the Proposed Project.

Existing Noise Conditions

Noise measurements were conducted near the Norco College Project site on July 13, 2022, to characterize the existing noise levels (Figure 13a, Noise Measurement Locations–Norco College and 13B, Noise Modeling Locations – Moreno Valley College). Additionally, noise measurements were conducted in and around the Norco College and Moreno Valley College Project sites for prior projects. Table 14 provides the location, date, and time the noise measurements were taken. The noise measurements were taken using a Soft dB Piccolo II sound level meter equipped with a 0.5-inch, pre-polarized condenser microphone with pre-amplifier. The sound level meter meets the current American National Standards Institute standard for a Type 2 (General Use) sound level meter. The accuracy of the sound level meter was verified using a field calibrator before and after the measurements, and the measurements were conducted with the microphone positioned approximately 5 feet above the ground.

Table 14. Measured Noise Levels

Receptors	Location	Date	Time	L_{eq} (dBA)	L_{max} (dBA)
ST1	East of proposed solar panel site, north end of gardens at Norco Senior Center	7/13/22	2:51 p.m.–3:06 p.m.	43.3	58.5
ST2	East of proposed solar panel site, south end of gardens at Norco Senior Center and north of multi-family residences	7/13/22	3:07 p.m.–3:23 p.m.	45.1	61.2
ST3	West of proposed BESS adjacent to Norco College Applied Technology Building,	10/12/21	10:48 a.m.–11:03 a.m.	49.1	67.1
ST4	Southwest of proposed solar panel site, adjacent to play area north of residences on Clydesdale Lane near Moreno Valley College	11/08/18	12:28 p.m.–12:43 p.m.	64.6	85.3
ST5	Southeast of proposed BESS, On campus, on pathway between Moreno Valley College Science and Technology Building and student parking lot.	11/08/18	11:42 a.m.–11:57 a.m.	54.5	67.1
ST6	On campus, in quad in front of student Academic Services Building.	11/08/18	11:22 a.m.–11:37 a.m.	58.3	75.2

Source: Appendix D.
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; L_{max} = maximum sound level during the measurement interval.

Six short-term noise measurement locations (ST1–ST6) were conducted adjacent to nearby noise-sensitive land uses. The measured L_{eq} and maximum noise levels are provided in Table 14. The field noise measurement data sheets are provided in Appendix D. The primary noise sources consisted of traffic on the local roadways and distant aircraft overflights; secondary noise sources included birds, distant barking dogs and distant conversations. As shown in Table 14, the measured sound levels ranged from approximately 43 to 65 dBA L_{eq}.

Regulatory Setting

City of Norco

The Norco College Project component is located within the City of Norco, as are the existing residences and other noise-sensitive land uses in the surrounding area. The City of Norco outlines its noise regulations and standards as they pertain to this Project in its General Plan (City of Norco 2003) and Municipal Code (City of Norco 2014). As a state-funded agency, the District is not regulated by City of Norco noise standards; although the District will make every effort to adhere to the Municipal Code regulations, it is not bound by them. The information provided below is presented for informational purposes.

City of Norco General Plan

The City of Norco has adopted the compatibility guidelines documented by the State Department of Health Services, which specify average noise limits for long-term, stationary noise sources, but does not document specific thresholds for temporary activities, such as construction noise. The following policies within the General Plan Noise Element (City of Norco 2003) pertain to construction noise:

> Policy 2.2.2b: All construction equipment should be equipped with noise attenuation features including mufflers and engine shrouds that are at least as effective as original manufacturer equipment.

> Policy 2.2.2c: The City should regulate wherever feasible the hours of operation for construction areas including haul routes that may include residential streets and/or sensitive land uses.

City of Norco Municipal Code

Pursuant to Municipal Code Section 9.07.040, general sound level standards, no person shall create any sound, or allow the creation of any sound, on any property that causes the exterior sound level on any other occupied residential property to exceed a maximum noise level of 55 dBA between 7:00 a.m. and 10:00 p.m., and 45 dBA between 10:00 p.m. and 7:00 a.m. However, construction-related events subject to a permit issued by the City of Norco are exempt from the general sound level (City of Norco 2014). In addition, Sections 15.01.110 and 15.30.020 of the City of Norco Municipal Code limit construction activity to between 6:30 a.m. and 7:00 p.m. from Monday through Friday (City of Norco 2014).

The operational noise levels contained in Municipal Code Section 9.07.040 are not applicable to:

- Facilities owned or operated by or for a governmental agency;
- Capital improvement projects of a governmental agency;
- The maintenance or repair of public properties;
- Public safety personnel in the course of executing their official duties, including, but not limited to, sworn peace officers, emergency personnel and public utility personnel. This exemption includes, without limitation, sound emanating from all equipment used by such personnel, whether stationary or mobile;
- Public or private schools and school-sponsored activities;
- City Sanctioned Events. The provisions of this title shall not apply to those reasonable sounds emanating from occasional public and private outdoor or indoor gatherings that require a City permit, public dances, shows, bands, sporting and entertainment events conducted and in compliance with such permit;
- Private construction projects involving no more than one unit located within one-quarter of a mile from an inhabited dwelling; provided that: Construction does not occur between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday and 7:00 p.m. and 8:00 a.m., on Saturday and Sunday, unless specified by permit, (5) Property maintenance, including, but not limited to, the operation of lawnmowers, leaf blowers, etc., provided such maintenance occurs between the hours of 8:00 a.m. and 7:00 p.m., (6) Motor vehicles, other than off-highway vehicles, or (7) Construction-related single events or continuous events subject to a permit issued by the City of Norco. (Municipal Code Section 9.07.020.);
- Heating, exhaust, and air conditioning equipment

City of Moreno Valley

The Moreno Valley College Project component is located within the City of Moreno Valley, as are the existing residences and other noise-sensitive land uses in the surrounding area. The City of Moreno Valley outlines its noise regulations and standards as they pertain to this Project in the Municipal Code (City of Moreno Valley 2007). As a state-funded agency, the District is not regulated by City of Moreno Valley noise standards; although the District will make every effort to adhere to the Municipal Code regulations, it is not bound by them. The information provided below is presented for informational purposes.

City of Moreno Valley Municipal Code

The City of Moreno Valley Municipal Code, Chapter 11.80, Noise Regulation, provides performance standards and noise control guidelines for determining and mitigating non-transportation or stationary-source noise impacts from operations at private properties. The City of Moreno Valley Municipal Code defines maximum sound levels (in terms of dBA L_{eq}) for source land uses in Table 11.80.030-2 for residential and commercial land uses. As defined by the Municipal Code, Section 11.80.020, Definitions, commercial land use means all uses of land not otherwise classified as residential, and residential land use means all uses of land primarily for dwelling units, hospitals, schools, colleges and universities, and places of religious assembly. Based on this classification, the operational noise level limits for the adjacent noise-sensitive land uses (residences and the elementary school) would be 60 dBA L_{eq} during the daytime hours (8:00 a.m. to 10:00 p.m.) and 55 dBA L_{eq} during the nighttime hours (10:01 p.m. to 7:59 a.m.) at a distance of 200 feet or more from the real property line of the source of the sound, if the sound occurs on privately owned property, or from the source of the sound, if the sound occurs on public right-of-way, public space, or other publicly owned property. These noise standards are shown in Table 15.

Table 15. Operational Noise Standards at 200 feet from Source

Land Use	Time Period	Maximum Permissible Exterior Noise Level at 200 feet (dBA Leq)
Residential	Daytime (8:00 a.m. to 10:00 p.m.)	60
	Nighttime (10:01 p.m. to 7:59 a.m.)	55
Commercial	Daytime (8:00 a.m. to 10:00 p.m.)	65
	Nighttime (10:01 p.m. to 7:59 a.m.)	60

Source: City of Moreno Valley Municipal Code, Chapter 11.80 Noise Regulation, Table 11.80.030-2, Maximum Sound Levels (in dBA) for Source Land Uses when measured at a distance of 200 feet from the property line of the source land use.
Note: dBA = A-weighted decibel; L_{eq} = equivalent noise level.

Construction Noise Regulation. In subsection D(7), Specific Prohibitions, of Section 11.80.030, Prohibited Acts, the City requires that no person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 8:00 p.m. and 7:00 a.m. the following day such that the sound there from creates a noise disturbance.

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

Less Than Significant Impact with Mitigation Incorporated. Construction noise and vibration levels are temporary phenomena, which can vary from hour to hour and day to day, depending on the equipment in use, the operations being performed, and the distance between the source and receptor.

Equipment that would be in operation during proposed construction would include, in part, excavators, concrete saws, compressors, welders, and paving equipment. Table 16 presents typical maximum noise levels for various pieces of construction equipment at a distance of 50 feet (note that these are maximum noise levels). Typically, construction equipment operates in alternating cycles of full power and low power, producing average noise levels less than the maximum noise level presented in Table 16. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of construction activities during that time. Construction noise in a well-defined area typically attenuates at approximately 6 dB per doubling of distance.

Table 16. Typical Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Air compressor	81
Backhoe	80
Compactor	82
Concrete mixer	85
Concrete pump	82
Concrete vibrator	76
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Impact wrench	85
Jackhammer	88
Loader	85
Paver	89
Pneumatic tool	85
Pump	76
Roller	74
Saw	76
Truck	88

Source: FTA 2018.
Note: dBA = A-weighted decibels.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels for the Norco College and the Moreno Valley College components of the Proposed Project, each of which are addressed separately below. Although the model was funded and promulgated by the Federal Highway Administration, the RCNM is often used for non-roadway projects because the same types of construction equipment used for roadway projects are often used for other types of construction. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis.

Construction scenario assumptions, including phasing and equipment mix, were based on information from the District and the CalEEMod default values developed for the air quality and GHG emissions impacts analysis. Table 3 (in the Air Quality section of this document) presents the assumptions used for both the Norco College and the Moreno Valley College components

Norco College Project Component

Project construction would take place within approximately 130 feet of the nearest off-site noise-sensitive land uses (the Norco Senior Center gardens east of the proposed solar panel field). Project construction would also take place within approximately 220 feet of the campus core/quad areas. Table 17 summarizes the estimated construction noise levels from the Norco College Project component by construction phase. The RCNM inputs and outputs are provided in Appendix D.

Table 17. Construction Noise Model Results Summary - Norco College

Land Use	Off-site Receptor Location	Distance from Construction Activity to Noise Receptor (feet)	Estimated Construction Noise Levels (dBA $L_{eq\ 1\text{-}hr}$)					
			Site Preparation	Grading	Boring/Conduit	Racking/Other Mechanicals	PV Panel Installation	Other Electrical
Residential (Apartments)	East of the Proposed Solar Field	Nearest Construction Activity/Receiver Distance (160’ – 500’)	75	74	62	64	58	72
Recreational (Senior Center)	East of the Proposed Solar Field	Nearest Construction Activity/Receiver Distance (130’ - 450’)	76	76	63	65	60	74
Educational (Campus Core)	East of the Proposed EV Charging Station	Nearest Construction Activity/Receiver Distance (220’ - 2000’)	72	71	70	69	36	69

Source: Appendix D

As shown in Table 17, the construction noise levels during the nearest construction work at the nearest off-site noise-sensitive receivers (the gardens at the Norco Senior Center and the adjacent apartments to the south of the Senior Center) are predicted to range from approximately 58 dBA L_{eq} (during the photovoltaic (PV) panel installation) to approximately 76 dBA L_{eq} (during site preparation and grading). On campus, construction noise levels are predicted to range from approximately 36 dBA L_{eq} to approximately 72 dBA L_{eq}. Compared to the ambient noise levels measured in the Project vicinity, noise levels from construction would (during the louder phases) result in substantial temporary noise level increases at the adjacent noise-sensitive land uses. With implementation of **MM NOI-1**, noise levels from construction activities would be reduced to a level of **less than significant.**

Moreno Valley College Project Component

Project construction would take place within approximately 890 feet of the nearest off-site noise-sensitive land uses (residences south of the proposed solar panel field). Project construction would also take place within approximately 180 feet of the campus core/quad areas. Table 18 summarizes the estimated construction noise levels from the Moreno Valley College Project component by construction phase. The RCNM inputs and outputs are provided in Appendix D.

Table 18. Construction Noise Model Results Summary - Moreno Valley College

Land Use	Off-site Receptor Location	Distance from Construction Activity to Noise Receptor (feet)	Estimated Construction Noise Levels (dBA $L_{eq\ 1\text{-}hr}$)					
			Site Preparation	Grading	Boring/Conduit	Racking/Other Mechanicals	PV Panel Installation	Other Electrical
Residential (Single-Family Homes)	South of the Proposed Solar Field	Nearest Construction Activity/Receiver Distance (890' - 1225')	60	59	55	54	43	57
Educational (Campus Core)	East of the Proposed EV Charging Station	Nearest Construction Activity/Receiver Distance (180' - 1,300')	71	70	71	68	40	68

Source: Appendix D

As shown in Table 18, the construction noise levels during the nearest construction work at the nearest off-site noise-sensitive receivers (the residences south of the proposed solar panel site) are predicted to range from approximately 43 dBA L_{eq} (during the PV panel installation) to approximately 60 dBA L_{eq} (during site preparation). On campus, construction noise levels are predicted to range from approximately 40 dBA L_{eq} to approximately 71 dBA L_{eq}. Compared to the ambient noise levels measured in the Project vicinity, noise levels from construction would (during the louder phases) result in substantial temporary noise level increases at the adjacent noise-sensitive land uses. With implementation of **MM NOI-1**, noise levels from construction activities would be reduced to a level of **less than significant.**

Operation

Less-Than-Significant Impact. Long-term (i.e., operational) noise associated with the Proposed Project would primarily consist of noise from on-site mechanical and electro-mechanical equipment such as HVAC equipment associated with the BESS units and the noise from the inverters and transformers associated with the solar panel field. Once operational, the Proposed Project would not create or require a substantial number of Project-related trips. Although vehicle trips would occur for periodic inspection and maintenance such as panel washing, the number of such trips would be negligible and, thus, **less than significant.**

On-site Mechanical Equipment Noise

HVAC and other related equipment (i.e., inverters and transformers) would have the potential to create noise impacts. Based upon the information provided by the District (included in Appendix D), a spreadsheet–based outdoor sound propagation prediction model was used to calculate the noise level from the noise-generating equipment at nearby noise-sensitive receptors using the following assumptions:

- Treatment of exposed HVAC condenser units (associated with the BESS) and other equipment as point-type sound emission sources.
- Point-source sound propagation (i.e., 6 dB per doubling of distance) that conservatively ignores acoustical absorption from atmospheric and ground surface effects.

Norco College Project Component

Using the aforementioned noise prediction method and assumptions, and without consideration of noise reduction due to acoustical shielding from structures, the noise levels from the operating equipment at the nearby receivers was estimated and summarized in Table 19. The maximum hourly noise level from the mechanical equipment at nearby residences (the apartments to the east of the proposed solar panel site, which would include the 2,500 kVA step-up transformer and inverter) would be approximately 28 dBA L_{eq}, which is well below the City's noise standard for residential land uses of 55 dBA L_{eq} during daytime hours (7 a.m. to 10 p.m.) and 45 dBA L_{eq} during nighttime hours (10 p.m. to 7 a.m.). At the Norco College campus core, noise from mechanical equipment would range from approximately 7 to 33 dBA L_{eq}. No applicable stationary-source noise standards exist for the noise levels Norco College; however, the estimated mechanical noise levels would be less than the measured ambient noise levels on-campus and the residential locations and would not result in a substantial noise increase. Therefore, impacts associated with on-site mechanical noise would be **less than significant.**

Table 19. Estimated Mechanical Equipment Noise Levels at Sensitive Receptors – Norco College

Equipment	Noise Level at Nearby Noise-Sensitive Receiver			
	Receiver Location	Average Noise Level (dBA L_{eq})	Applicable Noise Standard - Daytime (7 a.m. to 10 p.m.) / Nighttime (10 p.m. to 7 a.m.) (dBA L_{eq})[1]	Noise Standard Exceeded?
2,500 kVA step-up transformer, Inverter	Apartments to the east	28	55 / 45	No
BESS	Campus core/quad area	33	N/A	N/A
200 kVA step-up transformer	Campus core/quad area	7	N/A	N/A

Source: Appendix D
Note:
1 Municipal Code Section 9.07.040; L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; N/A – not applicable; these land uses are exempt from noise standards from mechanical noise.

Moreno Valley College Project Component

Using the aforementioned noise prediction method and assumptions, and without consideration of noise reduction due to acoustical shielding from structures, the noise levels from the operating equipment at the nearby receivers was estimated and summarized in Table 20. The maximum hourly noise level at 200 feet from the mechanical equipment near the single-family residences to the south of the proposed solar panel site (which would include the 1,000 kVA step-up transformer and inverter) would be approximately 33 dBA L_{eq}. Therefore, noise from on-site mechanical equipment would not exceed the City's stationary-source noise standard (60 dBA L_{eq} daytime, 55 dBA L_{eq} nighttime) as detailed previously in Table 15, nor would it result in a substantial noise increase. Therefore, impacts associated with on-site mechanical noise would be less than significant. At the Moreno Valley College campus core, noise from mechanical equipment would range from approximately 12 to 51 dBA L_{eq}. No applicable stationary-source noise standards exist for the noise levels at Moreno Valley College; however, the estimated mechanical noise levels would be less than the measured ambient noise levels on-campus and the residential locations and would not result in a substantial noise increase. Therefore, impacts associated with on-site mechanical noise would be **less than significant.**

Table 20. Estimated Mechanical Equipment Noise Levels at Sensitive Receptors – Moreno Valley College

	Noise levels 200' from source(s)			
Equipment	Receiver Location	Average Noise Level (dBA L_{eq})	Applicable Noise Standard - Daytime (8 a.m. to 10 p.m.) / Nighttime (10 p.m. to 8 a.m.) (dBA L_{eq})[1]	Noise Standard Exceeded?
1,000 kVA step-up transformer, Inverter	Single-family residences to the south	33	60 / 55	No
BESS	Campus core	51	N/A	N/A
600 kVA step-up transformer	Campus core	19	N/A	N/A
200 kVA step-up transformer	Campus core	12	N/A	N/A
750 kVA step-up transformer	Campus core	19	N/A	N/A

Source: Appendix D

Notes:

1 City of Moreno Valley Municipal Code, Chapter 11.80 Noise Regulation, Table 11.80.030-2, Maximum Sound Levels (in dBA) for Source Land Uses when measured at a distance of 200 feet from the property line of the source land use; L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; N/A – not applicable; these land uses are exempt from noise standards from mechanical noise.

Mitigation Measure(s)

To reduce potentially significant impacts related to construction of the Proposed Project, the following mitigation is provided.

MM-NOI-1: Prior to grading permit issuance, the Riverside Community College District shall ensure the following:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Construction noise-reduction methods, such as shutting off idling equipment, installing temporary acoustic barriers around stationary construction noise sources, maximizing the distance between construction equipment staging areas and occupied residential areas, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive noise receivers.
- During construction, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors.
- Construction activities should be limited to the hours of 7:00 a.m. to 5:00 p.m., Monday through Saturday.

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

Less Than Significant Impact. Construction activities have the potential to expose persons to excessive ground-borne vibration or ground-borne noise. Caltrans has collected ground-borne vibration information related to construction activities indicating that continuous vibrations with a PPV of approximately 0.1 inches/second begin to annoy people (Caltrans 2020). The heavier pieces of construction equipment, such as an excavator, would have PPVs of approximately 0.089 inches/second or less at a distance of 25 feet (FTA 2018). Ground-borne vibration is typically attenuated over short distances. At the distance from the Norco College Project component to the nearest noise/vibration-sensitive receptor (approximately 130 feet), and with the anticipated construction equipment, the PPV vibration level would be approximately 0.008 inches/second. At the distance from the Moreno Valley College Project component to the nearest noise/vibration-sensitive receptor (approximately 180 feet), and with the anticipated construction equipment, the PPV vibration level would be approximately 0.005 inches/second. These vibration levels would be well below the vibration threshold of potential annoyance of 0.1 inches/second.

The major concern with regard to construction vibration is related to building damage. Construction vibration as a result of the Proposed Project would not result in structural building damage, which typically occurs at vibration levels of 0.5 inches/second or greater for buildings of reinforced-concrete, steel, or timber construction. The heavier pieces of construction equipment used would include typical construction equipment for this type of project, such as backhoes, front-end loaders, and flatbed trucks. Pile driving of large columns, blasting, and other special construction techniques would not be used for construction of the Proposed Project; therefore, excessive ground-borne vibration and ground-borne noise would not be generated. Vibration levels from Project construction would be less than the thresholds of annoyance and potential for structural damage. Operation of the Proposed Project would not result in any sources of vibration. Therefore, impacts would be **less than significant.**

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

No Impact. No private airstrips are located in the vicinity of either Norco College or Moreno Valley College (AirNav 2022). The closest airport to the Norco College component of the Project is Corona Municipal Airport, which is located approximately 1.7 miles southwest of the Project site. According to Riverside County Airport Land Use Compatibility Plan (Riverside County ALUC 2004), the Project site is located outside of the Corona Municipal Airport's influence area boundary. The closest airport to the Moreno Valley College component of the Project is March Air Reserve Base/Inland Port Airport, located approximately 2.5 miles west of the Project site. According to Riverside County's March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan (Riverside County ALUC 2014), the Project site is located just outside of the March Air Reserve Base/Inland Port Airport's influence area boundary. Air traffic noise associated with the airports would not expose construction workers, operational staff, students or visitors to excessive noise levels. Therefore, **no impacts** associated with public airport and associated air traffic noise would occur.

3.14 Population and Housing

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

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

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two RCCD campuses and would not involve the development of housing or businesses or the extension of infrastructure. Therefore, the Proposed Project would have **no impact** on population growth.

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

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two RCCD campuses on undeveloped land. Therefore, the Proposed Project would have **no impact** related to the displacement of people or housing.

3.15 Public Services

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

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

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

Fire protection?

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two existing RCCD campuses which are adequately served by existing fire resources. Construction staging would be limited to the area immediately adjacent to each Project site and would not impact public roadways or emergency access. The closest fire station to the Norco College Project site is Norco Fire Department Station 57, located approximately 1 mile northwest of the Project site at 3367 Corydon Avenue. The closest fire station to the Moreno Valley College Project site is Riverside County Fire Station 91, located immediately north of the campus at 16110 Lasselle Street. The temporary increase in personnel associated with construction of the Proposed Project would be adequately served by existing fire resources. After construction, personnel at the site would be limited to periodic maintenance by a small number of personnel, which would also be adequately handled by existing fire resources. As such, the Proposed Project would not facilitate the need for new or physically altered fire protection facilities and there would be **no impact.**

Police protection?

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two existing RCCD campuses which are adequately served by existing police resources. Construction staging would be limited to the area immediately adjacent to each Project site and would not impact public roadways or emergency access. The Moreno Valley College Project site is served by the Moreno Valley Police Department, located approximately 4 miles northwest of the Project site at 22850 Calle San Juan De Los Lagos. The Norco College Project site is served by the Norco Sherriff's Department, located immediately northeast of the Project site at 2870 Clark Avenue. The temporary increase in personnel associated with construction of the Proposed Project would be adequately served by existing police resources. After construction, personnel at the site would be limited to periodic maintenance by a small number of personnel, which would also be adequately handled by existing police resources. As such, the Proposed Project would not facilitate the need for new or physically altered fire protection facilities and there would be **no impact.**

Schools?

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two RCCD campuses and would not induce population growth. As such, the Proposed Project would place no demand on the schools serving the Proposed Project. Therefore, it would not facilitate the need for new or physically altered schools and there would be **no impact.**

Parks?

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two RCCD campuses and would not induce population growth. As such, the Proposed Project would place no demand on parks near the Proposed Project sites. Therefore, it would not facilitate the need for new or physically altered parks and there would be **no impact.**

Other public facilities?

No Impact. The Proposed Project would include the installation of ground-mounted solar arrays at two RCCD campuses and would not induce population growth. As such, the Proposed Project would place no demand on parks near the Proposed Project sites. Therefore, it would not facilitate the need for new or physically altered parks and there would be **no impact.**

3.16 Recreation

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

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

No Impact. The Proposed Project would develop ground-mounted solar arrays at two RRCD campuses. It would not induce population growth and as such, would have **no impact** on the use of parks or recreational facilities.

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

No Impact. The Proposed Project would not involve the development of recreational facilities. Therefore, the Proposed Project would have **no impact** related to adverse physical effects on the environment from the construction or expansion of such facilities.

3.17 Transportation

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

This section analyzes the potential impacts of the Proposed Project based on CEQA Guidelines Section 15064.3(b), which focuses on newly adopted criteria (vehicle miles traveled [VMT]) for determining the significance of transportation impacts. Pursuant to SB 743, the focus of transportation analysis changed from level of service or vehicle delay to VMT. The related updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018. This new methodology was required to be used statewide beginning July 1, 2020.

As described in Chapter 2, Project Description, the Proposed Project is located on two RCCD campuses within Riverside County; Norco College (within the City of Norco) and Moreno Valley College (in the City of Moreno Valley). Norco College is regionally accessible by the I-15 and SR 91 freeways in the City of Norco (Figure 1). Moreno Valley College is regionally accessible by the I-215 and SR 60 freeways in the City of Moreno Valley (Figure 1).

For the purposes of this section, the City of Moreno Valley Transportation Study Guidelines for Vehicle Miles Traveled and Level of Service Assessment (City of Moreno Valley 2020), and the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) have been used. The City of Norco does not currently have transportation impact study guidelines.

Additionally, trip generation from construction of the Project has been estimated for informational purposes. The Institute of Transportation Engineers' Trip Generation Manual does not contain trip rates for construction-related activities associated with the Proposed Project, therefore, it is primarily based on the number of construction employees or workers as well as the quantity of vendor and haul related truck estimate provided by the College and used in the Proposed Project's Air Quality analysis. The construction duration is approximately 6 months for each Project site, with the Norco College Project component starting construction approximately 2 months before the Moreno Valley College Project component. Construction equipment would be staged on site adjacent to the areas of construction.

Each worker and truck are assumed to generate two daily trips, one inbound and one outbound. The construction work shift would occur between 7:00 a.m. and 4 p.m. Therefore, the majority of the workers would arrive and depart outside of the AM peak hour (generally occurs between 7:00 a.m.–9:00 a.m.) and PM peak hour (generally occurs between 4:00 p.m.–6:00 p.m.) of the adjacent street network. However, to show a conservative estimate, it is assumed that approximately 50% of the workers would travel during the peak hours. Haul truck traffic would be evenly distributed through duration of the construction phase and the 8-hour workday.

The Project's construction is comprised of six phases, including site preparation, grading, paving, boring and conduit installation, installation of racking and other mechanical components. Construction related trip generation was calculated for the peak phase which would occur during the PV panel installation. As shown in Table 21, the Proposed Project would generate 128 total daily trips and 22 peak hour trips during the peak construction phase.

Table 21. Peak Phase Construction Trip Generation

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trip Generation[1]								
Workers	36 workers	72	18	0	18	0	18	18
Haul Trucks	28 trucks	56	4	0	4	0	4	4
	Total	**128**	**22**	**0**	**22**	**0**	**22**	**22**

Source: Appendix A.
Notes:
1 Trip generation is estimated for PV panel installation phase which would occur for 30 days and during which the maximum number of haul trucks and workers would be required.

The following describes the Project's potential impacts to programs, plans and policies, VMT, hazards related to geometric design, and 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?***

Less than Significant Impact. The purpose of the Circulation Element of the City of Norco's General Plan is to provide for a safe, convenient, and efficient circulation system for the City's automobiles and equestrians (City of Norco 2000). The element describes the extent of physical improvements needed to accommodate anticipated traffic demand and also introduces other techniques which can be used to improve and maintain an acceptable level of service for the City's circulation system. The City of Moreno Valley's General Plan also states the long-term strategy for the physical development of the City. It describes the different land uses and the community's need for infrastructure and public services to create a safe, healthful, prosperous, and desirable place to live, work, and play (City or Moreno Valley 2006b). The applicable goals of each City's plan are summarized below.

City of Norco

The following transportation-related goals are included in the City's General Plan Circulation Element:

Goal 1: A circulation network of equestrian trails and streets, integrated with the planned land uses, that provide for a safe, efficient, and economic movement of people and goods.

Goal 2: Encourage the use of alternate transportation modes.

Goal 3: Separate vehicular traffic associated with regional commuter traffic and commercial users from residential areas.

Goal 4: Ensure the provision of adequate off-street parking for all land uses including Sixth Street where a provision has been made to reduce on-site parking requirements in exchange for pedestrian connections between adjoining buildings, properties, and public parking facilities.

City of Moreno Valley

The following transportation-related goals are included in the City's General Plan Circulation Element:

Goal 1: A pattern of land uses, which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.

Goal 2: An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well-being, and beauty for all areas of the community, while maintaining a sound economic base.

Goal 8: Develop a safe, efficient, environmentally and financially sound, integrated vehicular circulation system consistent with the City General Plan Circulation Element Map, Figure 9-1, which provides access to development and supports mobility requirements of the system's users.

Goal 9: Maintain safe and adequate pedestrian, bicycle, and public transportation systems to provide alternatives to single occupant vehicular travel and to support planned land uses.

Goal 11: To have emergency services which are adequate to meet minor emergency and major catastrophic situations.

The Norco College Project entails constructing and operating a single ground-mounted fixed tilt solar array approximately 6 acres in size and associated underground lines and Battery Energy Storage. Access to the Norco College Project site is provided via Third Street and Windy Way on the existing college campus (Figure 2a). Sidewalks are provided along both sides of Third Street and an equestrian trail is provided along the south side of the street. There are no bicycle facilities within the vicinity of the Project site. The Riverside Transit Agency Route 3 provides service along Third Street and services the campus. The nearest transit stop is located approximately 0.25 miles east of Windy Way (RTA 2022).

The Moreno Valley College Project component would consist of a ground-mounted fixed tilt solar array approximately 2.7 acres in size. Both PV systems would include new underground lines. Access to the Moreno Valley College Project site is provided via Laselle Street and College Drive on the existing college campus (Figure 2b). Sidewalks are provided along both sides of the streets and Riverside Transit Agency Route 41 provides service along both Lasalle Street and College Drive. The nearest transit stop is located at the end of College Drive on the college campus. There are no bicycle facilities within the vicinity of the Project site.

As shown in Table 21, the construction of the Project would generate temporary trips and maintenance of the Project would require nominal trips which not cause a measurable effect to the circulation system or warrant any traffic analysis. As discussed above, the Proposed Project would be served by existing roadway, transit, pedestrian, and equestrian facilities and would not include site improvements that would extend into the public right-of-way or interfere with existing public transit, bicycle, or pedestrian facilities, or impede the construction of new or the expansion of such existing facilities in the future. Therefore, the Project would not adversely affect, in a manner that conflicts with, an applicable program, plan, ordinance, or policy addressing the performance of the circulation system, including public transit, roadway, bicycle or pedestrian facilities. Impacts would be **less than significant**.

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

Less than Significant Impact. CEQA Guidelines Section 15064.3(b) focuses on VMT for determining the significance of transportation impacts. It is further divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. The Updated CEQA Guidelines state that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts," and define VMT as "the amount and distance of automobile travel attributable to a project." "Automobile" refers to on-road passenger vehicles, specifically cars and light trucks. The OPR has clarified in its Technical Advisory (OPR 2018) that heavy-duty truck VMT is not required to be included in the estimation of a project's VMT. Other relevant considerations may include the effects of a project on transit and non-motorized traveled.

This section uses VMT as the basis for evaluating transportation impacts of the Proposed Project under CEQA. However, it should be noted that the guidelines and thresholds apply to land use and transportation projects that are subject to CEQA analysis. The Proposed Project is not a land use or transportation project, and therefore neither Section 15064.3(b)(1) nor Section 15064.3(b)(2) of the CEQA Guidelines apply. Instead, the Proposed Project would be categorized under Section 15064.3(b)(3) qualitative analysis. The updated CEQA Guidelines do not establish a significance threshold, however, recommend a threshold of significance for land use development (residential, office, and other land uses) and transportation projects. It should be noted that there is no significance threshold for construction or maintenance projects.

The Project would involve construction that would generate temporary construction-related traffic for approximately 6 months and nominal operations traffic. Even though worker and haul trips would generate VMT, once construction is completed, the construction-related traffic would cease and would return to pre-construction conditions. Measures to reduce the VMT generated by workers and trucks are limited, and there are no thresholds or significance criteria for temporary, construction-related VMT. The Project construction would be generally consistent with construction activities in terms of the temporary nature of activities, trip generation characteristics, and the types of vehicles and equipment required. The increase in VMT associated with Projects' construction is expected to be temporary and would therefore not cause a significant VMT impact.

Operation of the Proposed Project will require periodic maintenance including inspection and preventive maintenance as well as system washing. Annual servicing is expected to require up to 3 days of work per site on an annual basis. System washing will occur twice annually per site for 2 to 4 days per washing event. Together, the anticipated annual maintenance is expected to be up to 11 business days per site per year. The operation of the Proposed Project can be considered "small project" per the City's Transportation Study Guidelines and OPR's Technical Advisory given that it would not generate greater than 110 daily trips[8] and would therefore be presumed to have a less than significant VMT impact. Therefore, the Proposed Project would not conflict or be inconsistent with CEQA Guidelines Sections 15064.3(b)(1) and 15064.3(b)(3), and impacts would be **less than significant**.

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

Less than Significant Impact. The Proposed Project would not include any new roadway design features, nor would it alter any existing geometric design features along Third Street in Norco and Lasselle Street in Moreno Valley. Access for construction related traffic (workers and trucks) to the site would be from the existing driveways on the college campuses. As such, nominal trips generated by passenger cars and trucks entering and exiting the Project site would be able to do so safely and without causing congestion at the driveways, during construction or operation of the Project. Therefore, the Project would not substantially increase hazards due to a roadway design feature or introduce incompatible uses. Impact would be **less than significant**.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. The Project site is located in an established, developed area with ample access for emergency service providers. Construction activities would occur on the Project site and no lane closures in the public right-of-way or driveway closures are anticipated that would impact adopted emergency access or response plans. The contractor would follow standard construction practices and ensure adequate on-site circulation and access is always maintained for all users. The Project would not alter Third Street or Lasselle Street or access to the Project's parking area and therefore would not create significant impediments for emergency access. As such, the Project would have a **less-than-significant impact** related to emergency access.

8 This threshold ties directly to the OPR technical advisory and notes that CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (14 CCR 15301 [e][2]) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

3.18 Tribal Cultural Resources

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

The evaluation of potential impacts to Tribal Cultural Resources is based on the findings resulting from tribal consultation conducted by the District, as the lead agency, as well as the findings of Phase I Archaeological Resources Assessment Report for the Districtwide Solar Planning Initiative Project for Norco College and Moreno Valley College prepared by Dudek in October 2022 (Appendix E), in support of the MND for the Proposed Project. Background research conducted to inform this analysis include the results of a CHRIS records search conducted at the Eastern information Center , the NAHC SLF search, pedestrian survey, and the results of formal tribal consultation completed by the lead agency, the District, pursuant to California AB 52, all of which are briefly provided in this section.

3.18.1 Assembly Bill 52 Consultation

The Proposed Project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the Proposed Project. All NAHC-listed California Native American Tribal representatives that have requested project notification pursuant to AB 52 were sent letters by the District on May 31, 2022, via United States Postal Service certified mailing and email. The notification letters contained a Project description, outline of AB 52 timing, an invitation to consult, a Project site plan, and contact information for the appropriate lead agency representative. To date, the District has received four responses as a result of the notification letters. Table 22 summarizes the results of the AB 52 process for the Proposed Project. The confidential AB 52 consultation results are on file with the District.

Table 22. Assembly Bill 52 Native American Heritage Commission–Listed Native American Contacts

Native American Tribal Representatives	Response Received
Agua Caliente Band of Cahuilla Indians	Response received on July 28, 2022, via email. Within the response, Ms. Arysa Gonzalez Romero, Cultural Resource Analyst of the Tribal Historic Preservation Office for the Tribe deferred to the following Tribal entities: Soboba, Morongo Band of Mission Indians, and San Manual Band of Mission Indians. Further, Ms. Romero concludes consultation for the Proposed Project.
Pechanga Band of Luiseño Indians	During Government-to-Government Consultation with the Pechanga Tribe on August 25, 2022, the Tribe highlighted the importance of the Project's Norco College campus area. The Project lies within a Payómkawichum (Luiseño) Village and is surrounded by several established Payómkawichum place names. In discussion of the Project's Moreno Valley College campus area, the Tribe noted that the Project sits between three Traditional Cultural properties (TCP), two of which have been recognized as Traditional Cultural Landscapes (TCL).
Jill McCormick Historic Preservation Officer Quechan Tribe of the Fort Yuma Reservation	Response received on June 30, 2022, via email. Within the response, Ms. McCormick states that the Tribe has no comments on the Proposed Project and deferred to more local Tribes. Further, the Ms. McCormick states that the Quechan Tribe of the Fort Yuma Reservation supports the decisions of the more local Tribes on the [Project]. To date, no further communication between the Tribe and the District has occurred.
Cheryl Madrigal Tribal Historic Preservation Officer Rincon Band of Luiseño Indians	Response received on June 30, 2022, via email. A consultation call between the Tribe and the District was conducted on August 2, 2022. During the call, Ms. Madrigal stated that the Moreno Valley College Site is within a district and stated that it was determined through another project not associated with the present Proposed Project. Ms. Madrigal further stated that the Moreno Valley College Site appears to have an elevated sensitivity for cultural resources. Ms. Madrigal requested the records search results maps for the Proposed Project and requested to review the MND prior to public review. Ms. Madrigal also requested an ethnographic review section be included in the MND for the Proposed Project.

3.18.2 Regulatory Context

California State Assembly Bill 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. PRC

Section 21074 describes a tribal cultural resource as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe. A TCR is considered one of the following:

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

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the Project area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report by contacting those tribal groups who have previously provided formal written request for notification of projects under the agency's jurisdiction.

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

California Health and Safety Code Section 7050.5

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

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

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

Less Than Significant Impact with Mitigation Incorporated. As discussed in Section 3.5, the NAHC SLF search for the Norco College Site yielded positive results; however, as previously discussed in Section 3.5, the SLF record is maintained at a public land survey system Section level, which indicates a recorded sacred site could be anywhere within this 1 square mile (640 acres) area and, therefore, does not necessarily equate to the existence of resources within the specific area occupied by the Norco College Site. No previously recorded archaeological resources of Native American origin or tribal cultural resources listed in the CRHR or a local register were identified within the Proposed Project site as a result of the CHRIS records. However, in discussion with the Pechanga Band of Luiseño Indians and Rincon Band of Luiseño Indians, the Norco College Project component is within a culturally sensitive area and registered TCP. The Moreno Valley College Project component is directly surrounded by several sites that play an important role in the surrounding areas cultural use. With the implementation of **MM-CUL-1** through **MM-CUL-5**, the impacts of the Project will be **less than significant with mitigation incorporated.**

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

Less Than Significant Impact with Mitigation Incorporated. The Proposed Project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to tribal cultural resources as part of the CEQA process and requires lead agencies to provide notification of proposed projects to California Native American Tribal representatives that have requested such notifications. As previously discussed in Section 3.18.1 Assembly Bill 52 Consultation, the District received four responses as a result of the notification letters. Of the responses received, two Tribes, Pechanga Band of Luiseño Indians and Rincon Band of Luiseño Indians, responded with their input on the Projects impacts to their TCRs. Through consultation, it was determined that with the implementation of **MM-CUL-1** through **MM-CUL-5,** potentially significant impacts to TCRs would be reduced to **less than significant with mitigation incorporated.**

3.19 Utilities and Service Systems

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

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

Less Than Significant Impact. The Proposed Project involves the installation of ground-mounted solar arrays which would connect to and provide electricity to the existing electrical power grid. However, the Proposed Project would expand renewable energy resources which is beneficial to the environment. The analysis contained in this MND illustrates that the Proposed Project would not cause significant environmental effects. The Proposed Project would not involve or require relocation or construction of water, wastewater treatment, stormwater drainage, natural gas, or telecommunications facilities. Therefore, impacts related to relocation or construction of utility and service system facilities would be **less than significant.**

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

No Impact. During construction of the Proposed Project, water may be required for dust suppression of unpaved areas. However, this water would only be required temporarily and would be provided by water trucks and not through a water utility connection. During operation, the Proposed Project would require only limited (under 1,000 gallons per MW) and periodic water use for twice-annual system washing. The water would be supplied by water trucks. The Proposed Project would not include connections to water utilities. As such, the Proposed Project would have **no impact** on water supplies.

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

No Impact. The Proposed Project would not generate wastewater or connect to the sewer system. During construction, portable toilets would be provided for construction workers and the waste generated would be removed off site and disposed of by a licensed contractor at an approved disposal facility. As such, the Proposed Project would have **no impact** related to wastewater treatment capacity.

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

No Impact. Solid waste generated during construction of the Proposed Project would be minimal as no demolition or construction of habitable structures is involved. During construction, some solid waste would be generated by on-site construction personnel. The waste generated would be disposed of consistent with the requirements of AB 939, which requires that at least 50% of solid waste generated by a jurisdiction be diverted from landfill disposal through source reduction, recycling, or composting. (PRC Section 40000 et seq.). Minimal construction debris would also be generated, including cardboard and other material packaging. The Norco College Project site would be subject to the City's Construction and Demolition Debris Recycling Ordinance (Norco Municipal Code Section 6.42.310), which requires recycling of 100% if inert debris and 65% of remaining debris. The Moreno Valley College Project site would be subject to the City's Construction and Demolition Waste Recycling Program (Moreno Valley Municipal Code Chapter 8.80), which requires that a best effort is made to divert any and all recyclable materials by at least 50% and requires the development and submittal of a Waste Management Plan. Compliance with these measures would reduce the already minimal solid waste produced during construction of the Proposed Project.

Minimal and episodic solid waste would be generated during operation of the Proposed Project, including waste generated by on-site personnel conducting periodic maintenance and potential minimal debris associated with maintenance and repairs. Any waste generated during operation would be subject to the requirements of AB 939, as discussed above.

Therefore, the Proposed Project would generate minimal solid waste during both construction and operation and would have **no impact** related to the generation of excess solid waste.

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

No Impact. As discussed in 3.19(d), the Proposed Project would comply with applicable regulations related to solid waste, including AB 939 and city regulations and there would be **no impact.**

3.20 Wildfire

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

As stated above and discussed in Section 3.9(g), the Norco College Project site is not located in a FHSZ within an SRA or a VHFHSZ within a Local Responsibility Area. Therefore, there would be no impact as the Norco College Project site is not located in or near areas or lands classified as SRA or VHFHSZ. Therefore, an analysis of wildfire impacts is not applicable to the Norco College Project site. The analysis contained in this section is specific to the Moreno Valley College Project site, which is located in a VHFHSZ and adjacent to open and undeveloped lands.

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

Less Than Significant Impact with Mitigation Incorporated. The Draft Riverside Community College District Emergency Operations Plan addresses how RCCD will respond to extraordinary events, major incidents, or disasters, from mitigation and preparation through response and recovery. The Plan is designed to protect lives and property through effective use of pre-planning and training, exercises and drills, and available personnel and resources during emergency operations (RCCD 2019). The County of Riverside also maintains the Riverside Emergency Operations Plan, which was formally adopted by the County Board of Supervisors in 2019 (County of Riverside 2019b).

Construction of the Proposed Project would occur at a distance from the main Moreno Valley College campus and all habitable structures. Lane closures would not be required and access to campus buildings would not be impeded during construction of the Proposed Project. Once constructed, operation of the Proposed Project would not result in any actions that would significantly impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Additionally, MM FIRE-1 would require development of a Fire Management and Prevention Plan, which would include provisions for emergency response and evacuation specifically related to wildfire and would be consistent with existing emergency response and evacuation plans. Therefore, impacts associated with adopted emergency response plans or emergency evacuation plans are **less than significant with mitigation incorporated.**

MM-FIRE-1 Fire Management and Prevention Plan. The Applicant shall prepare and implement a Fire Management and Prevention Plan to ensure the safety of workers and the public during construction, operation and maintenance, and future decommissioning activities for the Proposed Project. The Applicant must submit the Fire Management and Prevention Plan to the Riverside County Fire Department (RCFD) for review and approval prior to construction. The Fire Management and Prevention Plan shall include, but not be limited to, the following elements:

- Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, and hot work restrictions.
- Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days.
- All internal combustion engines used at the Proposed Project site shall be equipped with spark arrestors. Spark arrestors shall be in good working order.
- Fire rules shall be posted and visible all to employees at the contractor’s field office and in other common areas.
- Equipment parking areas and small stationary engine sites shall be cleared of all flammable materials.
- Smoking shall be prohibited in all vegetated areas and within 50 feet of combustible materials storage and shall be limited to paved areas or areas cleared of all vegetation.
- During construction, fire extinguishers and fire-fighting equipment sufficient to extinguish small fires will be available on site and all construction vehicles will be equipped with a fire extinguisher.
- During operations, all maintenance vehicles will be equipped with a fire extinguisher or other fire-fighting equipment in accordance with state and federal regulations
- The Applicant shall coordinate with RCFD to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the Project site.

- All construction workers, personnel, and maintenance workers visiting the Project site to perform maintenance activities shall receive training on fire prevention procedures, the proper use of fire-fighting equipment, and procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by RCFD.
- A Weed Management Plan shall be included as part of the Fire Management and Prevention Plan which will outline procedures for the control of vegetation near all solar panel arrays, ancillary equipment, and access roads through periodic cutting and spraying of weeds.
- List fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations.
- All on-site employees shall participate in annual fire prevention and response training exercises with RCFD.
- List all applicable wildland fire management plans and policies established by state and local agencies and demonstrate how the Project will comply with these requirements.
- The Applicant shall designate an emergency services coordinator from among the full-time on-site employees during construction who shall perform routine patrols of the Project site during the fire season equipped with a portable fire extinguisher and communications equipment. The Applicant shall notify of the name and contact information of the current emergency services coordinator in the event of any change.
- Remote monitoring of all major electrical equipment (transformers and inverters) will screen for unusual operating conditions. Higher than nominal temperatures, for example, can be compared with other operational factors to indicate the potential for overheating which under certain conditions could precipitate a fire. Units could then be shut down or generation curtailed remotely until corrective actions are taken.
- Fires ignited on site shall be immediately reported to RCFD.
- The engineering, procurement, and construction contract(s) for the Proposed Project shall provide reference to or clearly state the requirements of this mitigation measure.

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

Less Than Significant Impact with Mitigation Incorporated. Proposed Project construction would introduce potential ignition sources to the Project site, including the use of heavy machinery and the potential for sparks during welding activities or other hot work. This could result in an exacerbation of wildfire risk and expose the temporary Proposed Project occupants (i.e., construction workers), as well as existing occupants (i.e., students, staff and faculty) to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire. The Project would be required to comply with State and Riverside County Fire Department requirements for construction activities in hazardous fire areas, including fire safety practices to reduce the possibility of fires during construction activities. The Proposed Project would comply with California Fire Code Chapter 33, Fire Safety During Construction and Demolition, designating fire safety measures to reduce the possibility of fires during construction activities. California Fire Code Chapter 33 includes the following measures: fire watch/fire guards during hot works and heavy machinery activities (e.g., welding), spark arresters on all equipment, requiring fire access during construction, approved water supply, red flag period restrictions, required on-site fire prevention resources, and others. The Proposed Project would also incorporate **MM-FIRE-1** to reduce potential impacts during construction to **less than significant.**

The Moreno Valley College Project site is adjacent to undeveloped sloped hillsides which could exacerbate the potential for the spread of wildfire. As described in Section 3.4.1, vegetation in the Proposed Project Study Area includes non-native grassland, brittle bush scrub, California buckwheat scrub, a non-vegetated channel, ornamental plantings, disturbed habitat, and urban/developed land. The type of vegetative cover plays a significant role in affecting fire behavior. Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, the native shrub species on site are considered to exhibit higher potential hazard (higher intensity heat and flame length) than grass dominated plant communities (fast moving, but lower intensity) if ignition occurred. Additionally, vegetative cover influences fire suppression efforts through its effect on fire behavior. For example, while fires burning in grasslands may exhibit lower flame lengths and heat outputs than those burning in native shrub habitats, fire spread rates in grasslands are often more rapid. Although the Project site would be graded and all vegetation removed, vegetation surrounding the Project site could result in significant impacts.

Additionally, the prevailing wind pattern is from the west (on-shore), but the presence of the Pacific Ocean causes a diurnal wind pattern known as the land/sea breeze system. During the day, winds are from the west–southwest (sea) and at night winds are from the northeast (land). The winder part of the year last from November through June with average wind speeds of 6.5 mph. The reminder of the year has wind speeds averaging around 5.3 mph (Weather Spark 2022). The highest wind velocities are associated with downslope, canyon, and Santa Ana winds. However, the Project site is subject to periodic extreme fire weather conditions that occur throughout Riverside County, associated with drought conditions and Santa Ana winds. Wind gusts during these events can reach 74 mph or greater and can drive extreme fire behavior (Sosnowski 2021). The various slope and canyon alignments that exist in the Project Area may serve to funnel or channel winds, thus increasing wind velocities and creating the potential for influencing wildfire behavior, which could result in significant impacts.

Further, the Proposed Project includes the development of a solar array and associated infrastructure which could exacerbate fire risk. With adherence to design and construction standards, the risk of a fire resulting from operation of the Proposed Project would be minimized. The Proposed Project would be designed and constructed to industry safety design standards (i.e., Institute of Electrical and Electronic Engineers, National Electric Code) and Riverside County Building and Safety Department requirements, to reduce the risk of electrical fires at the Project site. Additionally, solar arrays are generally fire resistant, as they are constructed largely out of steel, glass, aluminum, or components housed within steel enclosures.

Although the Proposed Project could result in significant impacts related to the factors discussed above, with the incorporation of AMP FIRE-1, included in 3.20(c) below, and **MM-FIRE-1**, impacts would be reduced to **less than significant**.

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

Less Than Significant Impact with Mitigation Incorporated. The Moreno Valley College Project site is designated as a VHFHSZ within a Local Responsibility Area and is adjacent to open, undeveloped hillsides to the north, east and south. The Proposed Project includes the development of a solar array and associated infrastructure which could exacerbate fire risk. With adherence to design and construction standards, the risk of a fire resulting from operation of the Proposed Project would be minimized. The Proposed Project would be designed and constructed to industry safety design standards (i.e., Institute of Electrical and Electronic Engineers, National Electric Code) and Riverside County Building and Safety Department requirements, to reduce the risk of electrical fires at the Project site. Additionally, solar arrays are generally fire resistant, as they are constructed largely out of steel, glass, aluminum, or components housed within steel enclosures. Switchgear and transformer equipment would be sited on concrete foundations and inverters would be mounted on racking posts with steel enclosures, minimizing the risk of electrical sparks that could ignite during equipment failure. In the event of a fire or accident, the complete facility alternating current power system could be shut down, and each inverter block could be isolated and shut down individually. The inverters would automatically shut down when they no longer sense voltage from the grid.

Although the Proposed Project would be designed, constructed, and operated to minimize the likelihood of electrical fire, in the event that an electrical fire occurred, the risk of wildfire could be significant due to the location of the Project site in a VHFHSZ and adjacent to undeveloped hillsides. The following APM would reduce the potential for wildfire risk:

APM-FIRE-1 If Riverside County Fire Department determines the existing water supply is insufficient to support the Proposed Project, additional water storage would be provided to the satisfaction of Riverside County Fire Department. The required volume of water for fire use would be based on the County Fire Marshall's review of the Proposed Project.

While the incorporation of the above APM would reduce the risk of wildfire, impacts could still be significant. However, with the incorporation of **MM-FIRE-1**, which would require the development of a Fire Management and Prevention Plan, impacts would be considered **less than significant.**

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

No Impact. As discussed in 3.20(b), the Proposed Project is located adjacent to open hillsides. Although these hillsides could potentially be susceptible to post-fire slope instability, the Proposed Project does not include the construction of habitable structures; therefore, would not expose people or structures to significant risks and **no impacts** would occur.

3.21 Mandatory Findings of Significance

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

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

Less Than Significant Impact with Mitigation Incorporated. As discussed in Section 3.4, through compliance with **MM-BIO-1** through **MM-BIO-4**, Project impacts to biological resources would be less than significant. As discussed in Section 3.5, through compliance with **MM-CUL-1** through **MM-CUL-5**, Project impacts to cultural resources and tribal cultural resources would be less than significant. As discussed in Section 3.7, through compliance with **MM-GEO-1** and **MM-GEO-2**, impacts to paleontological resources would be less than significant. As discussed in Section 3.9, through compliance with **MM-FIRE-1,** Project impacts to hazards and hazardous materials (wildfire) would be less than significant. As discussed in Section 3.13, through compliance with **MM-NOI-1**, Project impacts to noise would be less than significant. As discussed in Section 3.19, through compliance with **APM-FIRE-1 and MM-FIRE-1**, Project impacts related to wildfire would be less than significant. Therefore, with mitigation incorporated, the Project would not 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, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

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

Less Than Significant Impact with Mitigation Incorporated. When evaluating cumulative impacts, it is important to remain consistent with Section 15064(h) of the CEQA Guidelines, which states that an EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is 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, the effects of other current projects, and the effects of probable future projects.

Alternatively, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable through mitigation measures set forth in an MND or if the project will comply with the requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.

The Proposed Project would potentially result in Project-related impacts to biological resources, geology and soils (paleontological resources), cultural resources, noise, TCRs and wildfire that could be potentially significant without the incorporation of mitigation. Thus, when coupled with to biological resources, geology and soils (paleontological resources), cultural resources, noise, TCRs and wildfire impacts related to the implementation of other related projects throughout the broader project area, the Project would potentially result in cumulative-level impacts if these significant impacts are left unmitigated.

However, with the incorporation of mitigation identified herein, the Project's impacts would be reduced to less-than-significant levels and would not considerably contribute to cumulative impacts in the greater project region. In addition, other related projects would presumably be bound by their applicable lead agency to (1) comply with the all applicable federal, state, and local regulatory requirements; and (2) incorporate all feasible mitigation measures, consistent with CEQA, to further ensure that their potentially cumulative impacts would be reduced to less-than-significant levels.

Although cumulative impacts are always possible, the Project, by incorporating all mitigation measures outlined herein, would reduce its contribution to any such cumulative impacts to less than cumulatively considerable; therefore, the Project would result in individually limited, but not cumulatively considerable, impacts.

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

Less Than Significant Impact with Mitigation Incorporated. As evaluated throughout this document, with incorporation of mitigation, environmental impacts associated with the Proposed Project would be less than significant. Thus, the Proposed Project would not directly or indirectly cause substantial adverse effects on human beings. Impacts would be **less than significant with incorporation of mitigation.**

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4 References and Preparers

4.1 References Cited

AirNav (Airnav.com). 2022. "Airport Information" [database}. https://www.airnav.com/airports/get.

Alltrails.com. 2021. "Norco Mountain via Powerline Road". Accessed September 15, 2021. https://www.alltrails.com/explore/trail/us/california/norco-mountain-via-powerline-road?mobileMap=false.

Basgall, M. E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Basgall, M.E., and M. Hall. 1990. "Adaptive Variation in the North-Central Mojave Desert." Paper presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas, Nevada.

Bean, L.J., and F.C. Shipek. 1978. "Luiseño." In *Handbook of North American Indians*, Vol. 8, *California*, edited by Robert F. Heizer, 550–563. Washington, D.C.: Smithsonian Institution.

Boscana, G. 1846. "Chinigchinich; A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In *Life in California*, by Alfred Robinson, 227–341. New York, New York: Wiley & Putnam.

Byrd, B.F., and S.N. Reddy. 2002. "Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms." In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records*, edited by J.M. Erlandson and T.L. Jones, 41–62. Los Angeles, California: University of California–Los Angeles Press.

CAPCOA. 2008. (California Air Pollution Control Officers Association). 2008. CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. Accessed February 3, 2021. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf.

CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. March 7, 2012. CDFW. 2022. *List of Vegetation Alliances and Associations: Natural Communities List Arranged Alphabetically by Life Form.* July 2022. Accessed August 2022. https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/List.

CalEPA (California Environmental Protection Agency). 2019. First Amendment to Voluntary Cleanup Agreement, Riverside Community College District, Norco Campus. August 12, 2019.

CGS (California Geological Survey). 2002. California Geomorphic Provinces: Note 36. 4 pp.

Converse Consultants. 2021. Preliminary Geotechnical Investigation Report. Districtwide Solar Planning Initiative Project Moreno Valley and Norco College Campuses. Prepared for Riverside Community College District. October 19, 2021.

OPR (California Governor's Office of Planning and Research). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. December 2018. Accessed November 2020. http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

CDF (California Department of Finance). 2022. "Population Estimates for Cities, Counties, and the State – January 1, 2021 and 2022". Accessed September 20, 2022. https://dof.ca.gov/Forecasting/Demographics/estimates-e1/.

CDOC (California Department of Conservation). 2021. EQ Zapp: California Earthquake Hazards Zone Application [Web Map Application]. CDOC, California Geological Survey. Accessed July 15, 2022. https://maps.conservation.ca.gov/cgs/EQZApp/app/.

CAL FIRE (California Department of Forestry and Fire Protection). 2022. Fire Hazard Severity Zone Viewer. [Web Map Application]. Accessed July 18, 2022. https://egis.fire.ca.gov/FHSZ/.

Caltrans (California Department of Transportation). 2013. Technical Noise Supplement to the Caltrans Traffic Noise Analysis Protocol. Division of Environmental Analysis, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. September 2013.

Caltrans. 2020. Transportation and Construction Vibration Guidance Manual. Division of Environmental Analysis, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. Sacramento, California. April 2020.

Caltrans. 2021. "Scenic Highways: California State Scenic Highways". Accessed September 10, 2021. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

CNPS. 2022. *A Manual of California Vegetation Online*. https://vegetation.cnps.org/.

City of Moreno Valley. 2006a. Moreno Valley General Plan Conservation Element. July 11, 2006.

City of Moreno Valley. 2006b. City of Moreno Valley General Plan Circulation Element.

City of Moreno Valley. 2007. City of Moreno Valley Municipal Code, Chapter 11.80 Noise Regulation. http://qcode.us/codes/morenovalley/

City of Moreno Valley. 2020a. General Plan Figure 2-2 Land Use Map. http://morenovalley.ca.us/city_hall/general-plan/landuse-map.pdf. Accessed May 10, 2022.

City of Moreno Valley. 2020b. Zoning Map. http://moreno-valley.ca.us/cdd/pdfs/ZoningMap.pdf. Accessed May 10, 2022.

City of Moreno. 2020. Valley Transportation Study Guidelines for Vehicle Miles Traveled and Level of Service Assessment. September.

City of Moreno Valley. 2021. Final Environmental Impact Report for the MoVal 2040: Moreno Valley Comprehensive Plan Update, Housing Element Update, and Climate Action Plan. May 20, 2021.

City of Norco. 1989. General Plan Open-Space Element. June.

City of Norco. 2000. City of Norco General Plan Circulation Element. March 15.

City of Norco. 2003. City of Norco General Plan Noise Element. March 5, 2003.

City of Norco. 2012a. General Plan Land Use Map. https://www.norco.ca.us/home/showpublisheddocument/890/637731104230800000. Accessed May 10, 2022.

City of Norco. 2012b. Zoning Map. https://www.norco.ca.us/home/showpublisheddocument/902/637731104343070000. Accessed May 10, 2022.

City of Norco. 2013. City of Norco General Plan Safety Element. January 16, 2013.

City of Norco. 2014. Norco Municipal Code. 2014.

The Climate Registry. 2021. Default Emission Factors. May 1. Accessed March 2022. https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf?mc_cid=4b45d12237&mc_eid=5f138d1baa.

Cohen, K.M., S.C. Finney, P.L. Gibbard, and J.-X. Fan. 2022. “The ICS International Chronostratigraphic Chart.” Episodes 36: 199–-204. 2013; updated. Available at: https://stratigraphy.org/ICSchart/ChronostratChart2021-05.jpg.Converse Consultants. 2021.

County of Riverside. 2022. County of Riverside Code of Ordinances. Online content updated July 27, 2022. https://library.municode.com/ca/riverside_county/codes/code_of_ordinances?nodeId=16320.

County of Riverside. 2019a. Climate Action Plan Update. Accessed on January 21, 2021. https://planning.rctlma.org/Portals/14/CAP/2019/2019_CAP_Update_Full.pdf.

County of Riverside. 2019b. County of Riverside Emergency Management Department, Plans. https://rivcoready.org/about-emd/plans. Accessed August 12, 2022.

County of Riverside. 2022. Riverside County Floodplain Map [web mapping application]. https://content.rcflood.org/floodplainmap/. Accessed July 28, 2022.

Davis, E.L. 1978. *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Los Angeles, California: Natural History Museum of Los Angeles County.

Dibblee, T.W. and J.A. Minch. 2003. Geologic Map of the Sunnymead/South 1/2 of Redlands Quadrangles, San Bernardino and Riverside County, California. Dibblee Foundation Map DF-112. Scale 1:24,000.

DTSC (Department of Toxic Substances Control). 2022. Approval-Subsurface Investigation Workplan for Norco College Proposed Solar Array Project, Riverside Community College District, 2001 Third Street, Norco, California, Docket No. HAS VCA 11/12-042 (Site Code: 400202). January 6, 2022.

Dudek 2020. Negative Paleontological Resources Monitoring Report for the Moreno Valley College, Welcome Center Project, City of Moreno Valley, California. October 16, 2020.

Dudek. 2021a. Historical Hazards Evaluation, Norco College, Norco, California (Assessor Parcel Numbers 126-020-002 and 129-210-005). August 13, 2021.

Dudek. 2021b. Visual Resources Constraints Analysis for Districtwide Solar Planning Initiative Project, Riverside County, California. September 2021.

Dudek. 2021c. Biological Constraints Analysis for Districtwide Solar Planning Initiative Project, Riverside County, California. August 2021.

Dudek. 2021d. Habitat Assessment for the Delhi Sands Flower-Loving Fly for the Districtwide Solar Planning Initiative Project. October 5, 2021.

Dudek. 2021e. Subsurface Investigation Work Plan, Norco College Proposed Solar Arrays, Norco, California. November 22, 2021.

Dudek. 2022. Subsurface Investigation Report, Norco College Proposed Solar Project. August 9, 2022.

EIA (U.S. Energy Information Administration). 2022. "California State Profile and Energy Estimates – Table F16: Total Petroleum Consumption Estimates, 2019." Accessed March 2022. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA.

EPA (U.S. Environmental Protection Agency). 2016. "Health and Environmental Effects of Particulate Matter (PM)." https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.

Fages, P. 1937. *A Historical, Political, and Natural Description of California* (1775). Translated by Herbert Ingram Priestly. Berkeley, California: University of California Press.

FHWA (Federal Highway Administration). 2008. Roadway Construction Noise Model (RCNM), Software Version 1.1. U.S. Department of Transportation, Research and Innovative Technology Administration, John A. Volpe National Transportation Systems Center, Environmental Measurement and Modeling Division. December 8, 2008.

FTA (Federal Transit Administration). 2018. Transit Noise and Vibration Impact Assessment Manual. September 2018.

Gallegos, D.R. 1987. "San Dieguito-La Jolla: Chronology and Controversy." San Diego County Archaeological Society, Research Paper No. 1.

Geiger, M. and C.W. Meighan. 1976. As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815. Santa Barbara Mission Archive Library, Santa Barbara, California.

Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity,* edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Griset, S. 1996. "Southern California Brown Ware." Unpublished PhD dissertation; University of California, Riverside.

Hale, M. 2001. "Technological Organization of the Millingstone Pattern in Southern California." Master's thesis; California State University, Sacramento.

Hale, M. 2009. “San Diego and Santa Barbara: Socioeconomic Divergence in Southern California.” PhD dissertation; University of California, Davis.

Harrington, J.P. 1934. “A New Original Version of Boscana’s Historical Account of the San Juan Capistrano Indians of Southern California.” *Smithsonian Miscellaneous Collections* 92(4).

Hector, S.M. 2006. Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California. Prepared for the City of San Diego.

IPCC. 2007. (Intergovernmental Panel on Climate Change). 2007. *IPCC Fourth Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the U.N. Framework Convention on Climate Change*. November. Accessed January 2019. https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

Jahns, R.H., 1954 Geology of the Peninsular Range Province, Southern California and Baja California; California Division Mines Bull. 170: 24 pp.

Jefferson, G.T. 1991. A Catalog of Late Quaternary Vertebrates from California. Natural History Museum of Los Angeles County, Technical Reports 7:1-174. Unpublished revision: 18 May 2012.

Johnson, J.R., and J.G. Lorenz. 2006. “Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages.” *Journal of California and Great Basin Anthropology* 26:33–64.

Kennedy, M.P. 1977. Recency and character of faulting along the Elsinore fault zone in southern Riverside County, California. California Division of Mines and Geology, Special Report 131: 12pp.

Kroeber, A. 1925. *Handbook of the Indians of California.* Washington DC: Smithsonian Institution.

Laylander, D. 2000. *Early Ethnography of the Californias, 1533–1825*. Salinas, California: Coyote Press Archives of California Prehistory.

Lightfoot, K.J. 2005. *Indians, Missionaries, and Merchants*. Berkeley, California: University of California Press.

McLeod, S.A. 2018a. Vertebrate Paleontology Records Check for Paleontological Resources for the Proposed Moreno Valley Community College Welcome Center Project, Dudek Project # 11413, in Moreno Valley, Riverside County, Project Area. Unpublished Records Search Results Letter from the Natural History Museum of Los Angeles County, Los Angeles, California.

McLeod, S.A. 2018b. Paleontological Resources for the Proposed Costco Murrieta Project, Dudek Project # 11092, in the City of Murrieta, Riverside County, project area. Unpublished Records Search Results Letter from the Natural History Museum of Los Angeles County, Los Angeles, California.

Meighan and True. 1977. “Additional Comments on Molpa Archaeological Site.” *The Journal of California Anthropology* 4(2).

Morton, D.M., C.H. Gray, K.R. Bovard, and M. Dawson. 2002 Geologic map of the Corona North 7.5’ quadrangle, Riverside and San Bernardino Counties, California: U.S. Geological Survey, Open-File Report OF-2002-22, scale 1:24,000.

Morton, D.M., and F.K. Miller. 2006. Geologic map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California: U.S. Geological Survey, Open-File Report OF-2006-1217, scale 1:100,000.

Norris, R.M. and R.W. Webb. 1990. Geology of California (2nd edition). New York, NY: John Wiley & Sons. 541 p.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. *Draft Vegetation Communities of San Diego County.* March 2008. Accessed December 2020. http://www.sdcanyonlands.org/pdfs/veg_comm_sdcounty_2008_doc.pdf.

OEHHA (Office of Environmental Health Hazard Assessment). 2015. Air Toxics Hot Spots Program. Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed January 2019. http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf.

Regional Conservation Authority (RCA). 2003. Western Riverside County Multiple Species Habitat Conservation Plan. July 17, 2003.

RCA. 2022. RCA MSHCP Information Map. Online Viewer. https://wrcrca.maps.arcgis.com/apps/webappviewer/index.html?id=a73e69d2a64d41c29ebd3acd67467abd. Accessed July 2022.

Riverside County ALUC (Riverside County Airport Land Use Commission). 2014. March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan. http://www.rcaluc.org/Portals/0/17%20-%20Vol.%201%20March%20Air%20Reserve%20Base%20Final.pdf?ver=2016-08-15-145812-700.

RCCD (Riverside Community College District). 2011. Board Policy 5775 Sustainability/Environmental Responsibility. https://www.rccd.edu/bot/Board_Policies/Chapter%205%20-%20Business%20Financial%20Services/5775.pdf. Accessed May 10, 2022.

RCCD. 2019. Norco College Facilities Master Plan Update. https://www.norcocollege.edu/academicAffairs/ie/sp/Documents/Norco_Planning_Documents/Norco-College-Facilities-Master-Plan-2019-08-25-NC.pdf. Accessed May 10, 2022.

RCCD. 2020. Districtwide Solar Planning Initiative. Prepared by DLR Group.

RCCD. 2021. Moreno Valley Comprehensive Master Plan. https://www.rccd.edu/mvc/repository/Documents/Comprehensive%20Master%20Plan/cmp-2019-30.pdf. Accessed May 10, 2022.

RCCD and DTSC (Riverside Community College District and Department of Toxic Substances Control). 2016. Covenant to Restrict Use of Property, Environmental Restriction Re: County of Riverside APNs 126-020-002 and 129-210-005, Riverside Community College District, Norco College, DTSC Code No. 400202. April 12, 2016.

RCHCA (Riverside County Habitat Conservation Agency). 1996. *Habitat Conservation Plan for the Stephens' Kangaroo Rat in Western Riverside County, California*. March 1996. https://rchca.us/DocumentCenter/View/549/SKR-Habitat-Conservation-Plan.

RTA (Riverside Transit Agency). 2022. "Eastvale–Norco–Corona" [transit map and timetable]. https://www.riversidetransit.com/images/DOWNLOADS/ROUTES/003.pdf.

Rogers, M.J. 1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist* 31:454–467.

Rogers, M.J. 1945. “An Outline of Yuman Prehistory.” *Southwestern Journal of Anthropology* 1:167–198.

SCAG (Southern California Association of Governments). 2016. *2016–2040 Regional Transportation Plan/Sustainable Communities Strategy*. Adopted April 7, 2016. Accessed January 2019. http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

SCAQMD (South Coast Air Quality Management District). 1993. *CEQA Air Quality Handbook*. Accessed January 2019. http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993).

SCAQMD. 2008a. *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*. October 2008. Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf.

SCAQMD. 2008b. “Resolution No. 08-35: A Resolution of the Governing Board of the South Coast Air Quality Management District (AQMD) approving the Interim Greenhouse Gas (GHG) Significance Threshold to Be Used by the AQMD for Industrial Source Projects, Rules and Plans When It Is the Lead Agency for Projects Subject to the California Environmental Quality Act (CEQA).” *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans*, Attachment C. December 5, 2008.

SCAQMD. 2009. *Final Localized Significance Threshold Methodology*. July. Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2.

SCAQMD. 2017. *Final 2016 Air Quality Management Plan.* March 16, 2017. Accessed January 2019. http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/final-2016-aqmp/final2016aqmp.pdf?sfvrsn=15.

SCAQMD. 2019. “SCAQMD Air Quality Significance Thresholds.” Originally published in *CEQA Air Quality Handbook*, Table A9-11-A. Revised April 2019. Accessed January 2019. http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2.Sosnowski, A. 2021. *What are Santa Ana winds?* AccuWeather, Inc. Retrieved July 7, 2021. https://www.accuweather.com/en/weather-news/what-are-santa-ana-winds-2/343027.

Sparkman, P.S. 1908. “The Culture of the Luiseno Indians.” *University of California Publications in American Archaeology and Ethnology* 8(4):187–234.

SVP (Society of Vertebrate Paleontology). 2010. Standard Procedures for the assessment and mitigation of adverse impacts to paleontological resources. Available: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf.

Springer, K. B., E. Scott, J. C. Sagebiel, and L. K. Murray. 2009. The Diamond Valley Lake Local Fauna: late Pleistocene vertebrates from inland southern California. Pp. 217-235 In: L. Albright III (ed.), Papers on Geology, Vertebrate Paleontology, and Biostratigraphy in Honor of Michael O. Woodburne. Museum of Northern Arizona Bulletin 66.

True. 1980. “The Pauma Complex in Northern San Diego County: 1978.” *Journal of New World Archaeology* 3(4):1–39.

USFWS (United States Fish and Wildlife Service). 2022. Critical Habitat and Occurrence Data [digital GIS data]. ArcGIS. Accessed August 2021. http://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77.Warren, C.N. 1964. “Cultural Change and Continuity on the San Diego Coast.” Unpublished PhD dissertation; University of California, Los Angeles.

Warren, C.N. 1968. “Cultural Tradition and Ecological Adaptation on the Southern California Coast.” In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. “Paleoindian and Early Archaic Periods.” In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

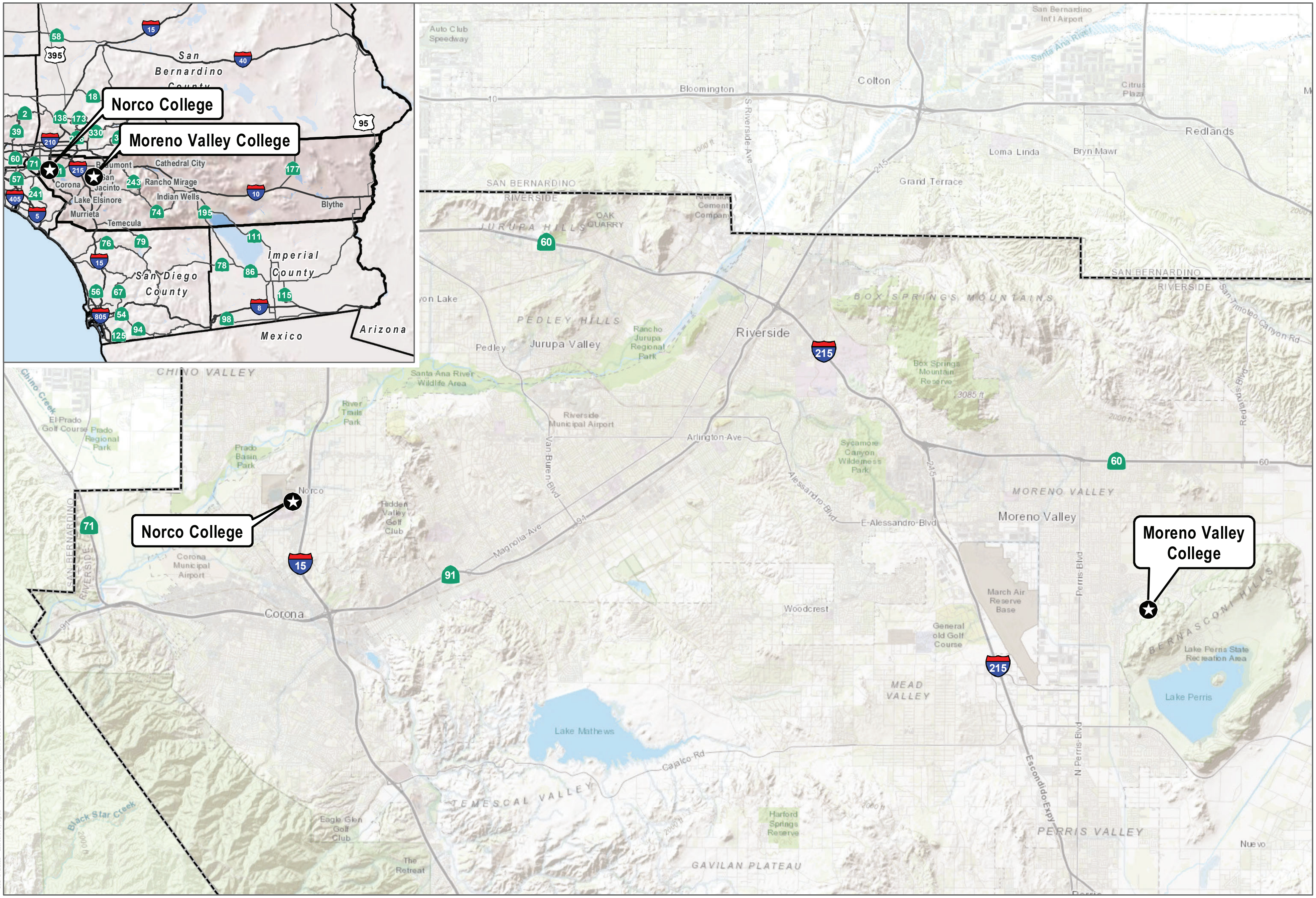
Weather Spark. 2022. Weather Sparks online climate database. Accessed August 11, 2022. https://weatherspark.com/.

White, R.C. 1963. “Luiseno Social Organization.” *University of California Publications in American Archaeology and Ethnology* 48(2): 91–194. Berkeley, California: University of California.

4.2 List of Preparers

Dudek

Rachel Struglia, PhD – Project Manager
Laura Masterson – Environmental Planner
Josh Saunders – Environmental Planner
Anna Cassady - Biologist
Dylan Ayers - Biologist
Adam Giacinto – Archaeologist
Matthew Morales – Air Resources Specialist
Lisa Maier – Urban Forester
Michael Green – Environmental Acoustician
Michael Williams – Paleontologist
Lisa Valdez- Transportation Specialist
Daniela Yurovsky – Technical Editor
Darlene Alilain-Horn – Publications Specialist



SOURCE: Riversdie County 2022; ESRI World Topographic Map

DUDEK

0 2 4 Miles

FIGURE 1

Project Locations

Riverside Community College District Solar Plan MND

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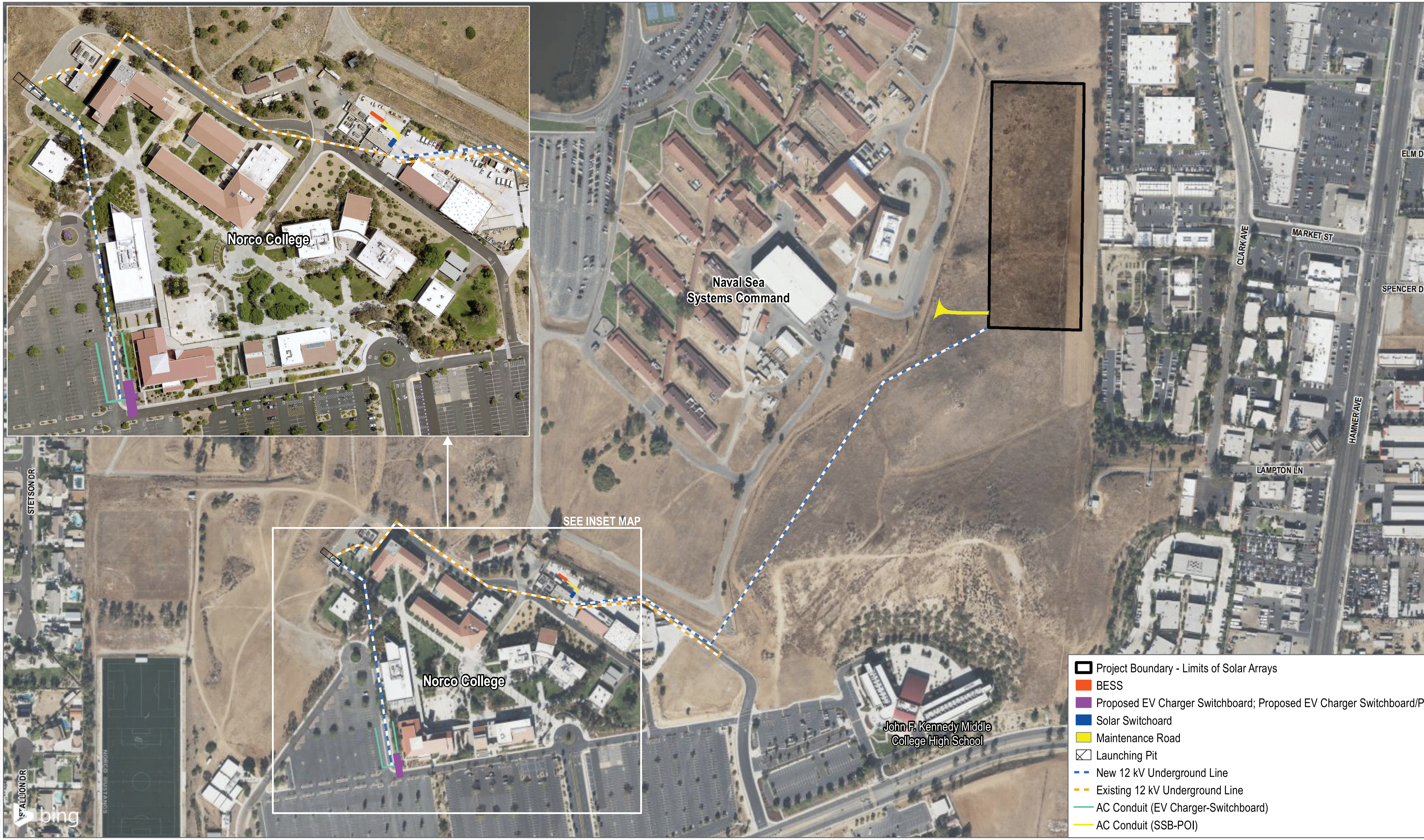

SOURCE: SUNPOWER 2021; Riverside County 2020, 2022; Bing Maps

DUDEK 0 150 300 Feet

FIGURE 2A

Project Site - Norco College

Riverside Community College District Solar Plan MND

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SOURCE: SUNPOWER 2021; Riverside County 2022; Bing Maps

DUDEK

0 100 200 Feet

FIGURE 2B

Project Site - Moreno Valley College

Riverside Community College District Solar Plan MND

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SOURCE: SUNPOWER, 2021

DUDEK

FIGURE 3A

Site Plan - Norco College

Riverside Community College District Solar Plan MND

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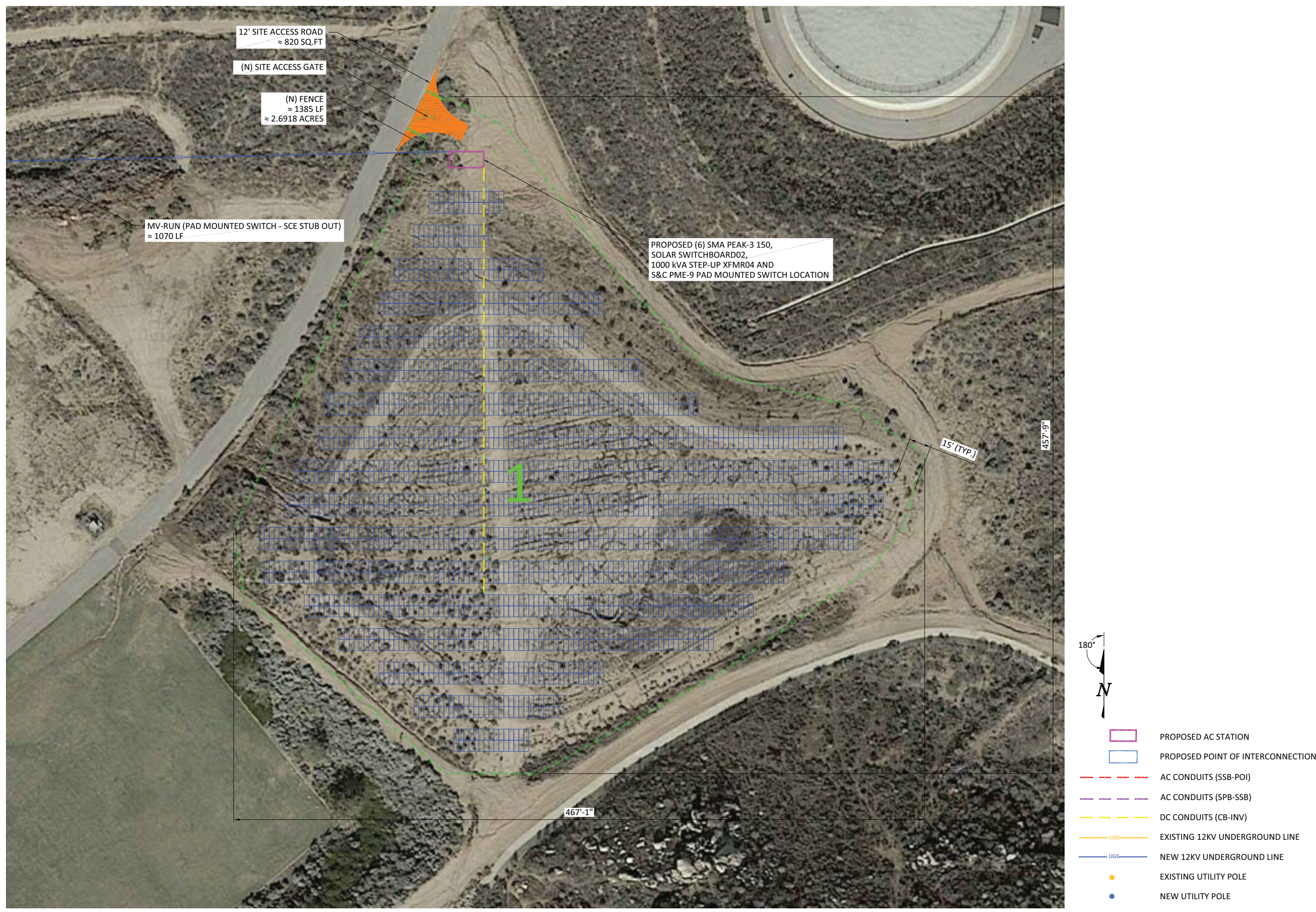

SOURCE: SUNPOWER, 2021

DUDEK

FIGURE 3B

Site Plan - Moreno Valley College

Riverside Community College District Solar Plan MND

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SOURCE: SUNPOWER 2021; Riverside County 2020, 2022; Bing Maps

DUDEK

0 190 380 Feet

FIGURE 4

Key Observation Points - Norco College

Riverside Community College District Solar Plan MND

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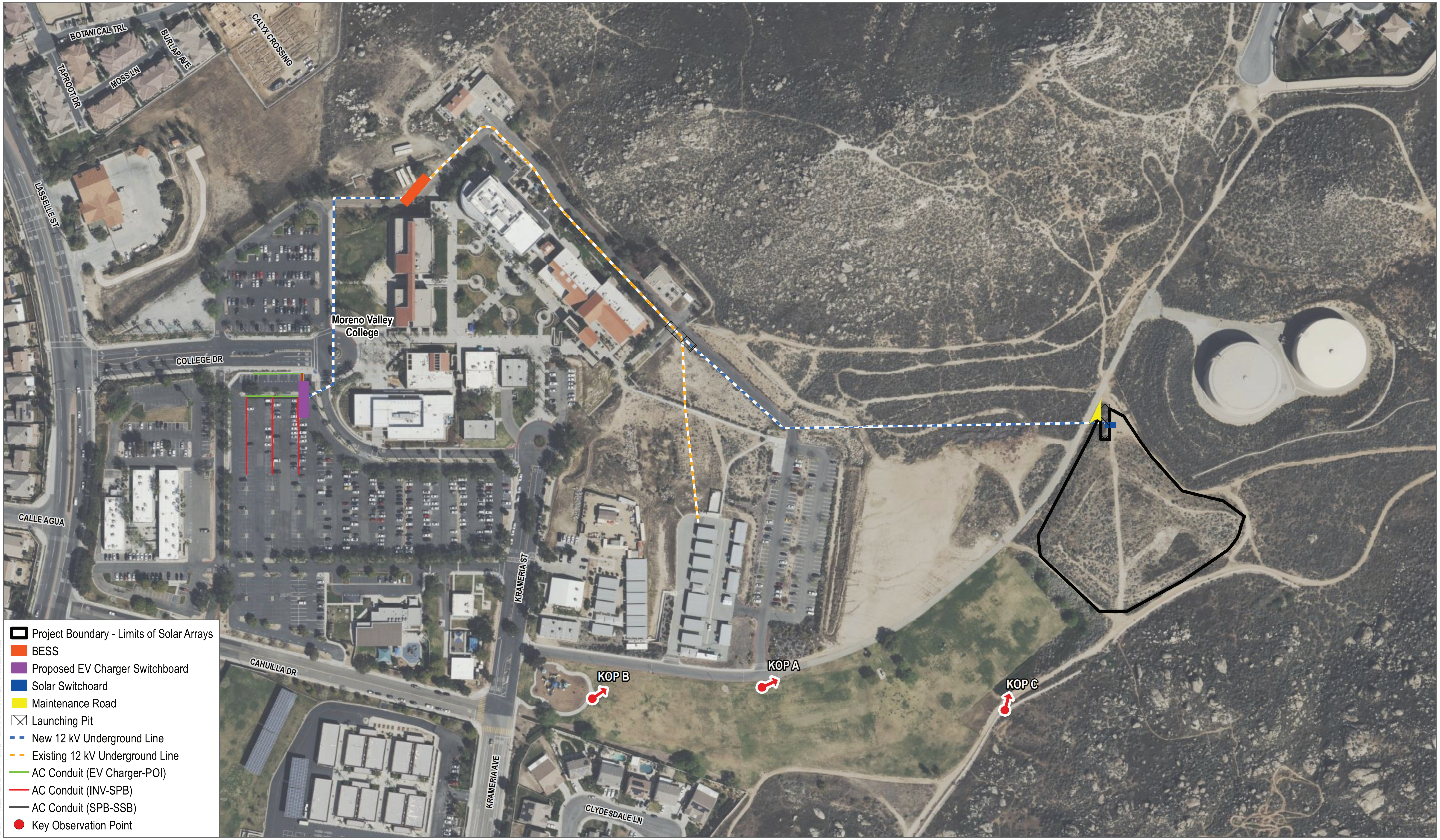

SOURCE: SUNPOWER 2021; Riverside County 2022; Bing Maps

DUDEK

FIGURE 5

Key Observation Points - Moreno Valley College

Riverside Community College District Solar Plan MND

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Digital Rendering depicting visibility of proposed solar panels as experienced from parking lot off Clark Avenue (east of Norco College)

SOURCE: DLR Group 2022

DUDEK

FIGURE 6

Norco College - KOP 1 : Digital Rendering of Existing Conditions and Project

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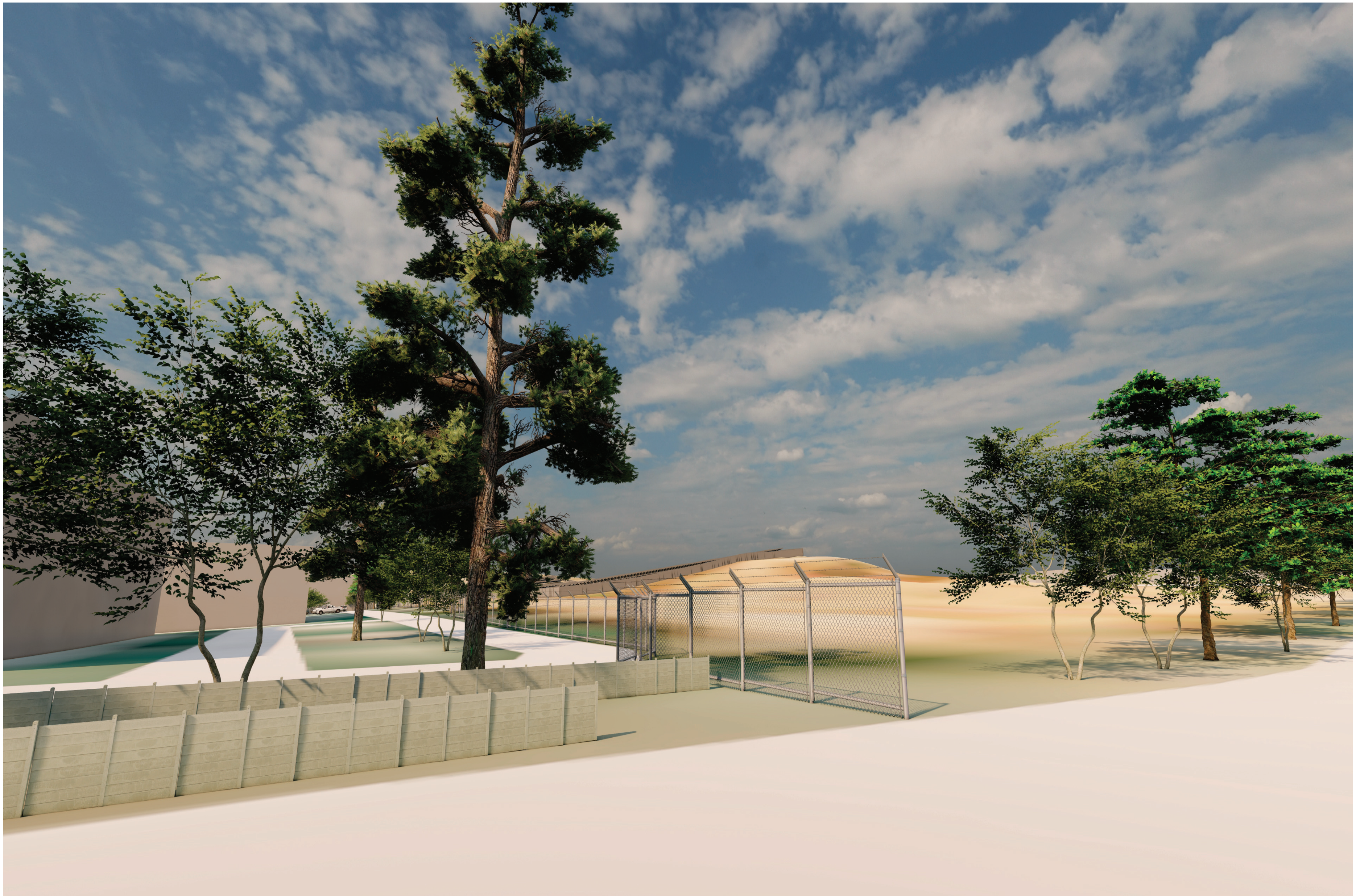

Digital Rendering depicting visibility of proposed solar panels as experienced from Fourth Street (northeast of Norco College)

SOURCE: DLR Group 2022

DUDEK

FIGURE 7

Norco College - KOP 2: Digital Rendering of Existing Conditions and Project

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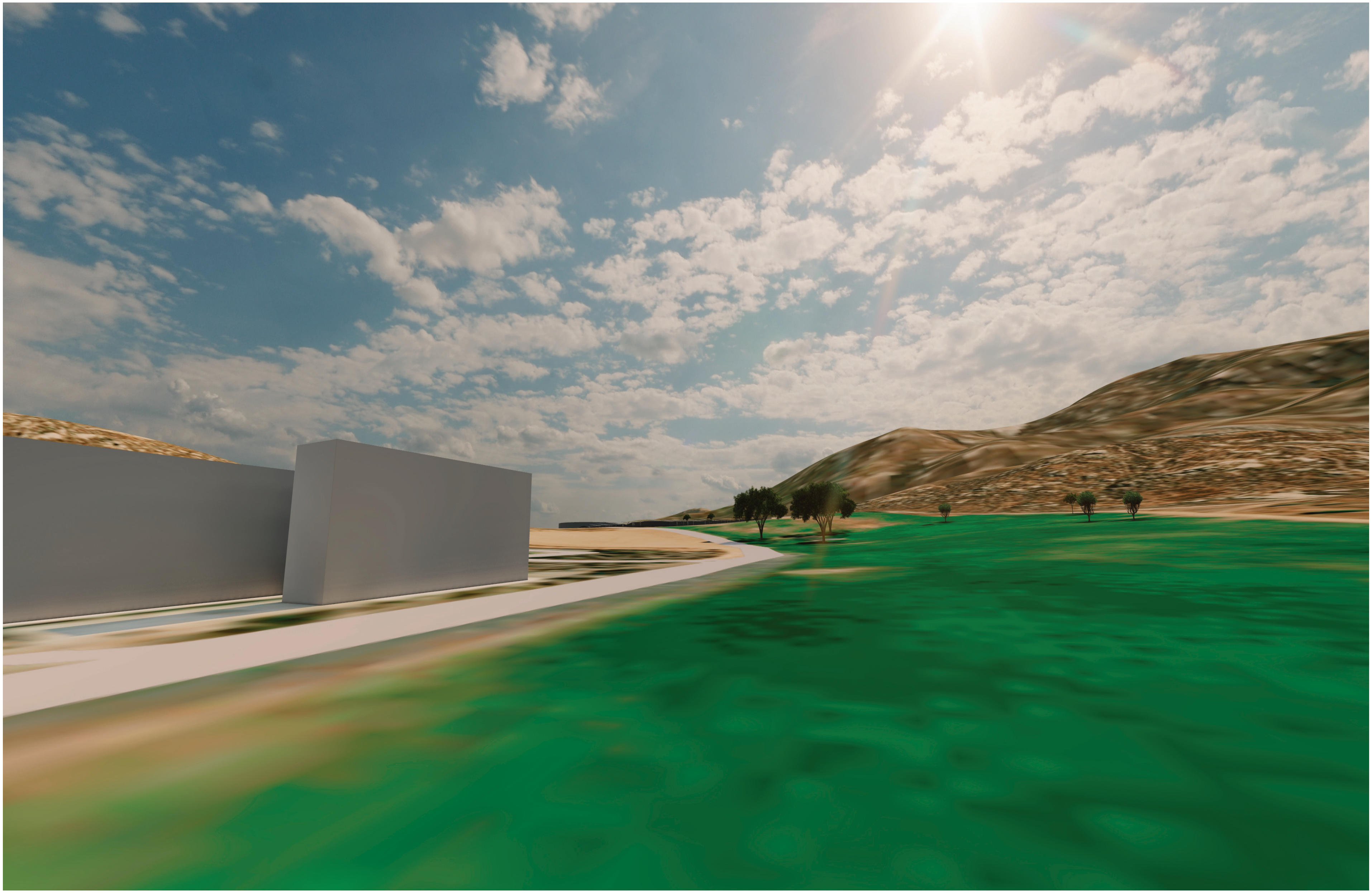

Digital Rendering depicting visibility of proposed solar panels as experienced from College Park (south of Moreno Valley College)

SOURCE: DLR Group 2022

DUDEK

FIGURE 8

Moreno Valley College - KOP A: Digital Rendering of Existing Conditions and Project

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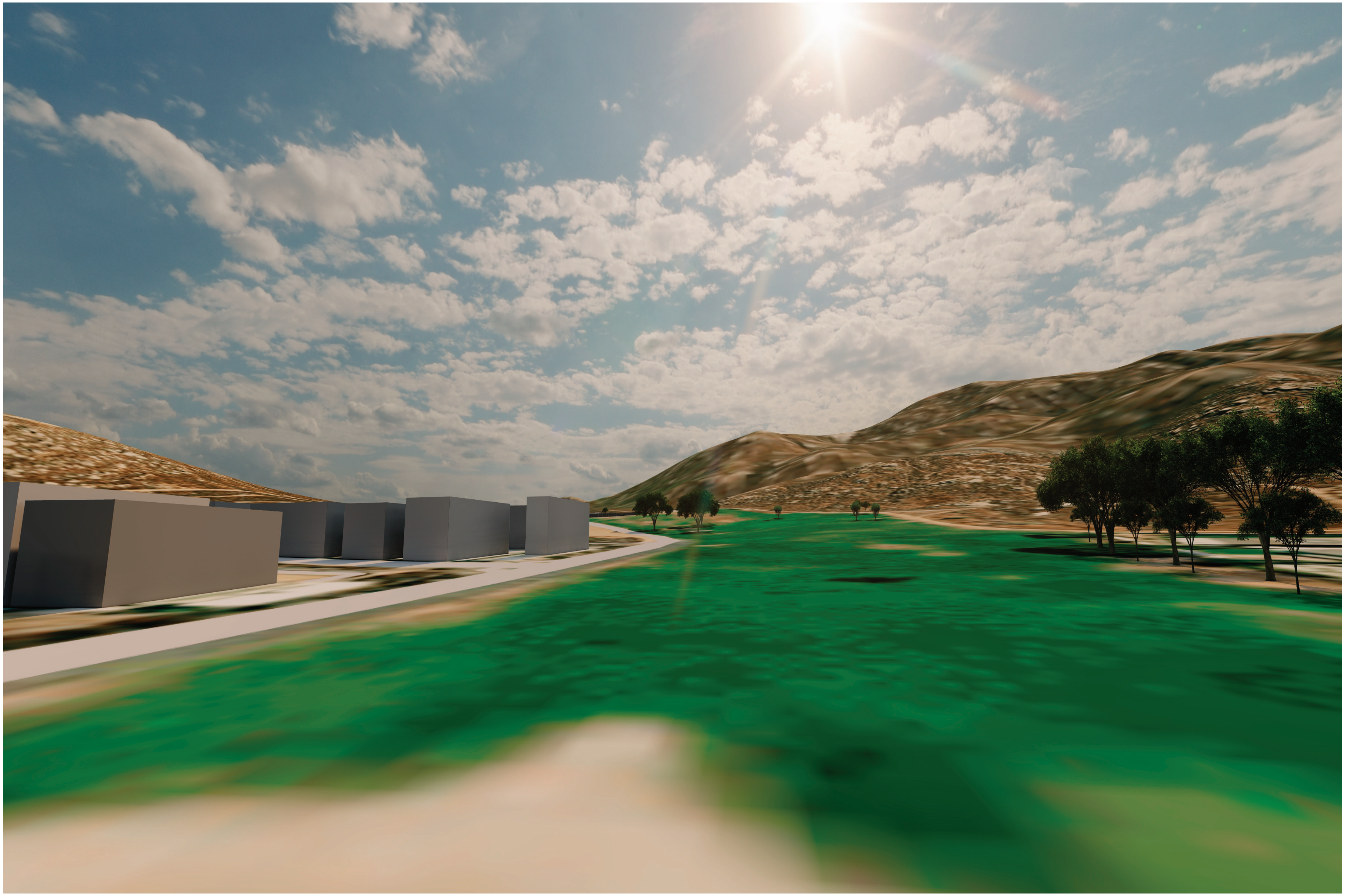

Digital Rendering depicting visibility of proposed solar panels as experienced from College Park playground (east of Krameria Avenue)

SOURCE: DLR Group 2022

DUDEK

FIGURE 9

Moreno Valley College - KOP B: Digital Rendering of Existing Conditions and Project

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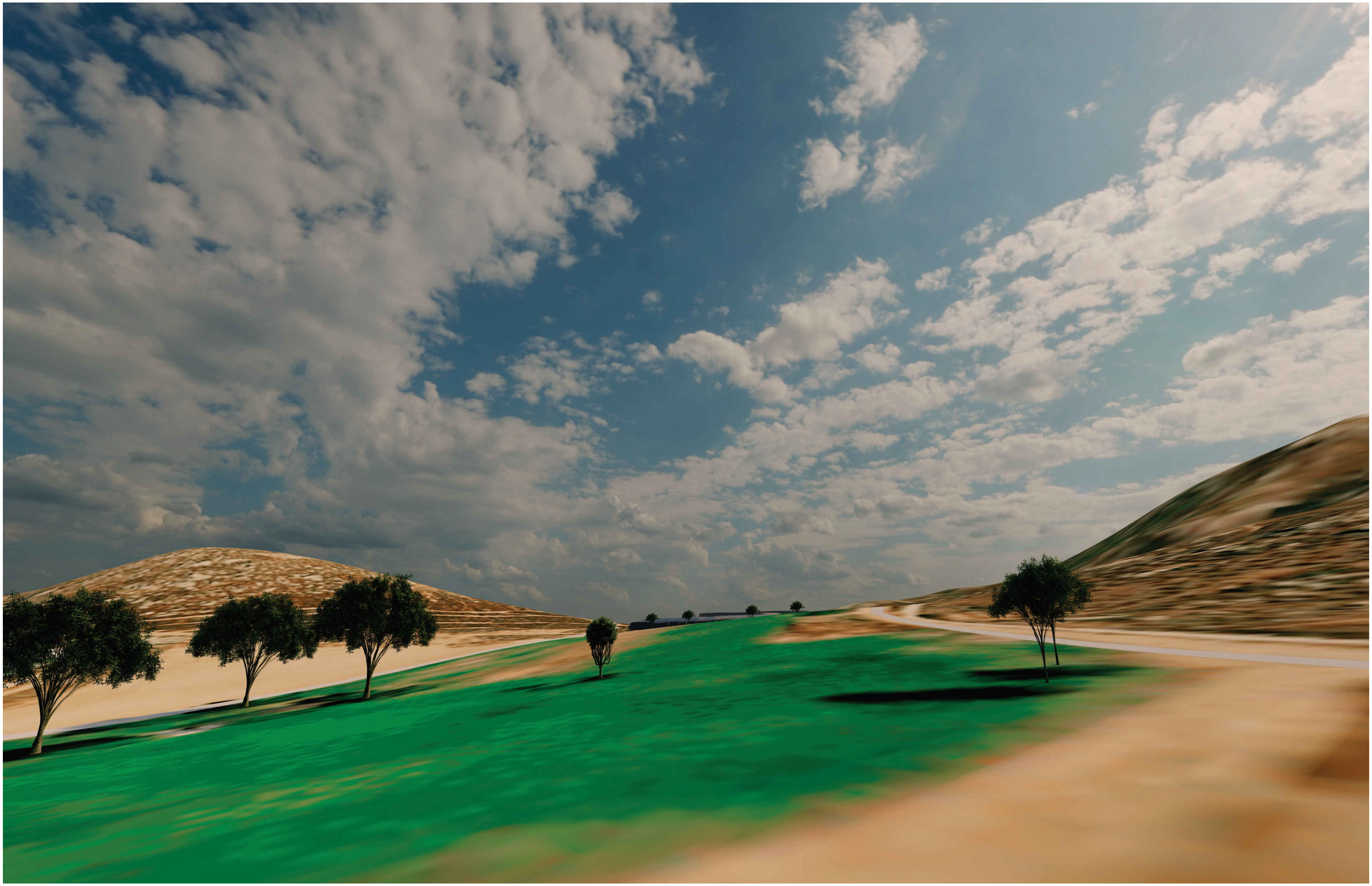

Digital Rendering depicting visibility of proposed solar panels as experienced from public trail above College Park

SOURCE: DLR Group 2022

DUDEK

FIGURE 10

Moreno Valley College - KOP C: Digital Rendering of Existing Conditions and Project

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SOURCE: SUNPOWER 2021; Riverside County 2020, 2022; Bing Maps; USDA 2021

DUDEK

FIGURE 11A

Soils - Norco College

Riverside Community College District Solar Plan MND

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SOURCE: SUNPOWER 2021; Riverside County 2022; Bing Maps; USDA 2022

DUDEK

0 100 200 Feet

FIGURE 11B

Soils - Moreno Valley College

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SOURCE: SUNPOWER 2021; Riverside County 2020, 2022; Bing Maps

DUDEK

0 140 280 Feet

FIGURE 12A

Impacts to Biological Resources - Norco College

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SOURCE: SUNPOWER 2021; Riverside County 2022; Bing Maps

DUDEK

0 100 200 Feet

FIGURE 12B

Impacts to Biological Resources - Moreno Valley College

Riverside Community College District Solar Plan MND

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SOURCE: SUNPOWER 2021; Riverside County 2020, 2022; Bing Maps

DUDEK

0 165 330 Feet

FIGURE 13A

Noise Measurement Locations - Norco College

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SOURCE: SUNPOWER 2021; Riverside County 2022; Bing Maps

DUDEK

FIGURE 13B

Noise Measurement Locations - Moreno Valley College

Riverside Community College District Solar Plan MND

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Appendix A

Air Quality Modeling Runs

RCCD Solar Plan Project - Norco College

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	6.00	Acre	6.00	261,360.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Norco College solar construction

Land Use - Other non-asphalt surface area used as surrogate for solar PV array

Construction Phase - Adjusted based on applicant input

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Grading - Soils balanced on-site

Demolition - No demolition

Trips and VMT - Adjusted based on applicant input

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

On-road Fugitive Dust - Default

Architectural Coating - No coatings required

Vehicle Trips - Operational on-road vehicles modeled separately

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Construction Off-road Equipment Mitigation - Compliance with Rule 403 (water exposed area 2x per day)

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	41.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	230.00	20.00
tblConstructionPhase	NumDays	230.00	32.00
tblConstructionPhase	PhaseEndDate	9/29/2023	2/13/2023
tblConstructionPhase	PhaseEndDate	10/14/2022	10/28/2022
tblConstructionPhase	PhaseEndDate	8/16/2024	3/13/2023
tblConstructionPhase	PhaseEndDate	7/4/2025	4/26/2023
tblConstructionPhase	PhaseStartDate	11/12/2022	12/17/2022
tblConstructionPhase	PhaseStartDate	10/15/2022	10/29/2022
tblConstructionPhase	PhaseStartDate	9/30/2023	2/14/2023
tblConstructionPhase	PhaseStartDate	8/17/2024	3/14/2023
tblOffRoadEquipment	HorsePower	212.00	175.00
tblOffRoadEquipment	HorsePower	124.00	51.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.38	0.38

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

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.44	0.44
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tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	43.00	24.00
tblTripsAndVMT	VendorTripNumber	43.00	28.00
tblTripsAndVMT	VendorTripNumber	43.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	28.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	28.00
tblTripsAndVMT	WorkerTripNumber	110.00	36.00
tblTripsAndVMT	WorkerTripNumber	110.00	36.00
tblTripsAndVMT	WorkerTripNumber	110.00	16.00

2.0 Emissions Summary

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					
2022	1.5073	16.0996	13.0776	0.0234	7.3574	0.6802	8.0375	3.4988	0.6259	4.1247	0.0000	2,309.1852	2,309.1852	0.5784	0.0778	2,339.0598
2023	0.6049	6.1964	7.4259	0.0226	0.5817	0.1936	0.7497	0.1584	0.1783	0.3293	0.0000	2,244.3454	2,244.3454	0.4792	0.0851	2,278.4216
Maximum	**1.5073**	**16.0996**	**13.0776**	**0.0234**	**7.3574**	**0.6802**	**8.0375**	**3.4988**	**0.6259**	**4.1247**	**0.0000**	**2,309.1852**	**2,309.1852**	**0.5784**	**0.0851**	**2,339.0598**

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					
2022	1.5073	16.0996	13.0776	0.0234	3.4620	0.6802	4.1421	1.6152	0.6259	2.2411	0.0000	2,309.1852	2,309.1852	0.5784	0.0778	2,339.0598
2023	0.6049	6.1964	7.4259	0.0226	0.5817	0.1936	0.7497	0.1584	0.1783	0.3293	0.0000	2,244.3454	2,244.3454	0.4792	0.0851	2,278.4216
Maximum	**1.5073**	**16.0996**	**13.0776**	**0.0234**	**3.4620**	**0.6802**	**4.1421**	**1.6152**	**0.6259**	**2.2411**	**0.0000**	**2,309.1852**	**2,309.1852**	**0.5784**	**0.0851**	**2,339.0598**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	49.07	0.00	44.33	51.51	0.00	42.29	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-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	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**0.0000**	**1.4000e-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	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-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	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**0.0000**	**1.4000e-003**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2022	10/28/2022	5	20	
2	Grading	Grading	10/29/2022	11/11/2022	5	10	
3	Boring/Conduit	Trenching	11/12/2022	12/16/2022	5	25	
4	Racking/Other Mechanical	Building Construction	12/17/2022	2/13/2023	5	41	
5	PV Panel Installation	Building Construction	2/14/2023	3/13/2023	5	20	
6	Other Electrical	Building Construction	3/14/2023	4/26/2023	5	32	

Acres of Grading (Site Preparation Phase): 20

Acres of Grading (Grading Phase): 5

Acres of Paving: 6

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
PV Panel Installation	Cranes	0	7.00	231	0.29
Other Electrical	Cranes	0	7.00	231	0.29
PV Panel Installation	Forklifts	0	8.00	89	0.20
Racking/Other Mechanical	Cranes	0	7.00	231	0.29
Racking/Other Mechanical	Forklifts	0	8.00	89	0.20

Racking/Other Mechanical	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Excavators	0	8.00	158	0.38
Other Electrical	Forklifts	0	8.00	89	0.20
PV Panel Installation	Generator Sets	0	8.00	84	0.74
Other Electrical	Generator Sets	0	8.00	84	0.74
PV Panel Installation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Graders	1	8.00	187	0.41
Racking/Other Mechanical	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Other Electrical	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
PV Panel Installation	Welders	0	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Racking/Other Mechanical	Welders	0	8.00	46	0.45
Other Electrical	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rollers	1	8.00	80	0.38
Boring/Conduit	Crawler Tractors	1	8.00	175	0.43
Boring/Conduit	Excavators	1	8.00	158	0.38
Boring/Conduit	Rollers	1	8.00	80	0.38
Boring/Conduit	Rough Terrain Forklifts	1	8.00	100	0.40
Racking/Other Mechanical	Bore/Drill Rigs	1	8.00	221	0.50
Racking/Other Mechanical	Off-Highway Tractors	1	8.00	51	0.44
Racking/Other Mechanical	Rough Terrain Forklifts	1	8.00	100	0.40
PV Panel Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Other Electrical	Aerial Lifts	1	8.00	63	0.31
Other Electrical	Graders	1	8.00	187	0.41
Other Electrical	Skid Steer Loaders	1	8.00	65	0.37

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

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
Boring/Conduit	4	28.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	28.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Racking/Other Mechanical	3	36.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
PV Panel Installation	1	36.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Other Electrical	3	16.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.4155	15.7102	7.5362	0.0182		0.6742	0.6742		0.6202	0.6202		1,767.519 9	1,767.519 9	0.5717		1,781.811 2
Total	**1.4155**	**15.7102**	**7.5362**	**0.0182**	**7.0826**	**0.6742**	**7.7568**	**3.4247**	**0.6202**	**4.0450**		**1,767.519 9**	**1,767.519 9**	**0.5717**		**1,781.811 2**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.3383	0.1176	1.4600e-003	0.0512	4.8800e-003	0.0561	0.0148	4.6700e-003	0.0194		154.3563	154.3563	1.6300e-003	0.0229	161.2184
Worker	0.0788	0.0511	0.7962	2.0300e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		205.3788	205.3788	5.1200e-003	5.0800e-003	207.0218
Total	**0.0918**	**0.3894**	**0.9138**	**3.4900e-003**	**0.2748**	**5.9900e-003**	**0.2808**	**0.0740**	**5.6900e-003**	**0.0797**		**359.7351**	**359.7351**	**6.7500e-003**	**0.0280**	**368.2403**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.4155	15.7102	7.5362	0.0182		0.6742	0.6742		0.6202	0.6202	0.0000	1,767.5199	1,767.5199	0.5717		1,781.8112
Total	**1.4155**	**15.7102**	**7.5362**	**0.0182**	**3.1872**	**0.6742**	**3.8613**	**1.5411**	**0.6202**	**2.1614**	**0.0000**	**1,767.5199**	**1,767.5199**	**0.5717**		**1,781.8112**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.3383	0.1176	1.4600e-003	0.0512	4.8800e-003	0.0561	0.0148	4.6700e-003	0.0194		154.3563	154.3563	1.6300e-003	0.0229	161.2184
Worker	0.0788	0.0511	0.7962	2.0300e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		205.3788	205.3788	5.1200e-003	5.0800e-003	207.0218
Total	**0.0918**	**0.3894**	**0.9138**	**3.4900e-003**	**0.2748**	**5.9900e-003**	**0.2808**	**0.0740**	**5.6900e-003**	**0.0797**		**359.7351**	**359.7351**	**6.7500e-003**	**0.0280**	**368.2403**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.7439	8.6373	5.7965	0.0123		0.3555	0.3555		0.3271	0.3271		1,193.4120	1,193.4120	0.3860		1,203.0613
Total	**0.7439**	**8.6373**	**5.7965**	**0.0123**	**0.5303**	**0.3555**	**0.8858**	**0.0573**	**0.3271**	**0.3843**		**1,193.4120**	**1,193.4120**	**0.3860**		**1,203.0613**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.3383	0.1176	1.4600e-003	0.0512	4.8800e-003	0.0561	0.0148	4.6700e-003	0.0194		154.3563	154.3563	1.6300e-003	0.0229	161.2184
Worker	0.1103	0.0715	1.1147	2.8400e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		287.5303	287.5303	7.1700e-003	7.1200e-003	289.8306
Total	**0.1233**	**0.4098**	**1.2323**	**4.3000e-003**	**0.3642**	**6.4400e-003**	**0.3707**	**0.0978**	**6.1000e-003**	**0.1039**		**441.8866**	**441.8866**	**8.8000e-003**	**0.0300**	**451.0490**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.7439	8.6373	5.7965	0.0123		0.3555	0.3555		0.3271	0.3271	0.0000	1,193.4120	1,193.4120	0.3860		1,203.0613
Total	**0.7439**	**8.6373**	**5.7965**	**0.0123**	**0.2386**	**0.3555**	**0.5941**	**0.0258**	**0.3271**	**0.3529**	**0.0000**	**1,193.4120**	**1,193.4120**	**0.3860**		**1,203.0613**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.3383	0.1176	1.4600e-003	0.0512	4.8800e-003	0.0561	0.0148	4.6700e-003	0.0194		154.3563	154.3563	1.6300e-003	0.0229	161.2184
Worker	0.1103	0.0715	1.1147	2.8400e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		287.5303	287.5303	7.1700e-003	7.1200e-003	289.8306
Total	**0.1233**	**0.4098**	**1.2323**	**4.3000e-003**	**0.3642**	**6.4400e-003**	**0.3707**	**0.0978**	**6.1000e-003**	**0.1039**		**441.8866**	**441.8866**	**8.8000e-003**	**0.0300**	**451.0490**

3.4 Boring/Conduit - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9950	10.0421	11.7277	0.0177		0.5192	0.5192		0.4777	0.4777		1,712.942 3	1,712.942 3	0.5540		1,726.792 3
Total	**0.9950**	**10.0421**	**11.7277**	**0.0177**		**0.5192**	**0.5192**		**0.4777**	**0.4777**		**1,712.942 3**	**1,712.942 3**	**0.5540**		**1,726.792 3**

3.4 Boring/Conduit - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0260	0.6766	0.2353	2.9100e-003	0.1025	9.7500e-003	0.1122	0.0295	9.3300e-003	0.0388		308.7125	308.7125	3.2700e-003	0.0458	322.4369
Worker	0.1103	0.0715	1.1147	2.8400e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		287.5303	287.5303	7.1700e-003	7.1200e-003	289.8306
Total	**0.1364**	**0.7481**	**1.3499**	**5.7500e-003**	**0.4155**	**0.0113**	**0.4268**	**0.1125**	**0.0108**	**0.1233**		**596.2429**	**596.2429**	**0.0104**	**0.0529**	**612.2675**

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	0.9950	10.0421	11.7277	0.0177		0.5192	0.5192		0.4777	0.4777	0.0000	1,712.9423	1,712.9423	0.5540		1,726.7923
Total	**0.9950**	**10.0421**	**11.7277**	**0.0177**		**0.5192**	**0.5192**		**0.4777**	**0.4777**	**0.0000**	**1,712.9423**	**1,712.9423**	**0.5540**		**1,726.7923**

3.4 Boring/Conduit - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0260	0.6766	0.2353	2.9100e-003	0.1025	9.7500e-003	0.1122	0.0295	9.3300e-003	0.0388		308.7125	308.7125	3.2700e-003	0.0458	322.4369
Worker	0.1103	0.0715	1.1147	2.8400e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		287.5303	287.5303	7.1700e-003	7.1200e-003	289.8306
Total	**0.1364**	**0.7481**	**1.3499**	**5.7500e-003**	**0.4155**	**0.0113**	**0.4268**	**0.1125**	**0.0108**	**0.1233**		**596.2429**	**596.2429**	**0.0104**	**0.0529**	**612.2675**

3.5 Racking/Other Mechanical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4740	5.0973	5.8045	0.0149		0.2109	0.2109		0.1941	0.1941		1,439.7134	1,439.7134	0.4656		1,451.3542
Total	**0.4740**	**5.0973**	**5.8045**	**0.0149**		**0.2109**	**0.2109**		**0.1941**	**0.1941**		**1,439.7134**	**1,439.7134**	**0.4656**		**1,451.3542**

3.5 Racking/Other Mechanical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0391	1.0149	0.3529	4.3700e-003	0.1537	0.0146	0.1684	0.0443	0.0140	0.0583		463.0688	463.0688	4.9000e-003	0.0687	483.6553
Worker	0.1418	0.0919	1.4332	3.6600e-003	0.4024	2.0000e-003	0.4044	0.1067	1.8400e-003	0.1086		369.6818	369.6818	9.2200e-003	9.1500e-003	372.6393
Total	**0.1809**	**1.1068**	**1.7860**	**8.0300e-003**	**0.5561**	**0.0166**	**0.5728**	**0.1510**	**0.0158**	**0.1668**		**832.7507**	**832.7507**	**0.0141**	**0.0778**	**856.2946**

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	0.4740	5.0973	5.8045	0.0149		0.2109	0.2109		0.1941	0.1941	0.0000	1,439.7134	1,439.7134	0.4656		1,451.3542
Total	**0.4740**	**5.0973**	**5.8045**	**0.0149**		**0.2109**	**0.2109**		**0.1941**	**0.1941**	**0.0000**	**1,439.7134**	**1,439.7134**	**0.4656**		**1,451.3542**

3.5 Racking/Other Mechanical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0391	1.0149	0.3529	4.3700e-003	0.1537	0.0146	0.1684	0.0443	0.0140	0.0583		463.0688	463.0688	4.9000e-003	0.0687	483.6553
Worker	0.1418	0.0919	1.4332	3.6600e-003	0.4024	2.0000e-003	0.4044	0.1067	1.8400e-003	0.1086		369.6818	369.6818	9.2200e-003	9.1500e-003	372.6393
Total	**0.1809**	**1.1068**	**1.7860**	**8.0300e-003**	**0.5561**	**0.0166**	**0.5728**	**0.1510**	**0.0158**	**0.1668**		**832.7507**	**832.7507**	**0.0141**	**0.0778**	**856.2946**

3.5 Racking/Other Mechanical - 2023

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	0.4464	4.6687	5.7859	0.0149		0.1848	0.1848		0.1701	0.1701		1,441.9485	1,441.9485	0.4664		1,453.6074
Total	**0.4464**	**4.6687**	**5.7859**	**0.0149**		**0.1848**	**0.1848**		**0.1701**	**0.1701**		**1,441.9485**	**1,441.9485**	**0.4664**		**1,453.6074**

3.5 Racking/Other Mechanical - 2023

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	0.0271	0.7841	0.3229	4.1900e-003	0.1537	6.8300e-003	0.1606	0.0443	6.5300e-003	0.0508		444.6504	444.6504	4.5300e-003	0.0657	464.3442
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1585**	**0.8653**	**1.6400**	**7.7300e-003**	**0.5561**	**8.7100e-003**	**0.5648**	**0.1510**	**8.2600e-003**	**0.1592**		**802.3969**	**802.3969**	**0.0128**	**0.0742**	**824.8142**

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	0.4464	4.6687	5.7859	0.0149		0.1848	0.1848		0.1701	0.1701	0.0000	1,441.9485	1,441.9485	0.4664		1,453.6074
Total	**0.4464**	**4.6687**	**5.7859**	**0.0149**		**0.1848**	**0.1848**		**0.1701**	**0.1701**	**0.0000**	**1,441.9485**	**1,441.9485**	**0.4664**		**1,453.6074**

3.5 Racking/Other Mechanical - 2023

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	0.0271	0.7841	0.3229	4.1900e-003	0.1537	6.8300e-003	0.1606	0.0443	6.5300e-003	0.0508		444.6504	444.6504	4.5300e-003	0.0657	464.3442
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1585**	**0.8653**	**1.6400**	**7.7300e-003**	**0.5561**	**8.7100e-003**	**0.5648**	**0.1510**	**8.2600e-003**	**0.1592**		**802.3969**	**802.3969**	**0.0128**	**0.0742**	**824.8142**

3.6 PV Panel Installation - 2023

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416		335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**		**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0316	0.9148	0.3767	4.8900e-003	0.1793	7.9700e-003	0.1873	0.0516	7.6200e-003	0.0593		518.7588	518.7588	5.2900e-003	0.0767	541.7348
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1630**	**0.9960**	**1.6938**	**8.4300e-003**	**0.5817**	**9.8500e-003**	**0.5916**	**0.1584**	**9.3500e-003**	**0.1677**		**876.5053**	**876.5053**	**0.0136**	**0.0851**	**902.2049**

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416	0.0000	335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**	**0.0000**	**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0316	0.9148	0.3767	4.8900e-003	0.1793	7.9700e-003	0.1873	0.0516	7.6200e-003	0.0593		518.7588	518.7588	5.2900e-003	0.0767	541.7348
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1630**	**0.9960**	**1.6938**	**8.4300e-003**	**0.5817**	**9.8500e-003**	**0.5916**	**0.1584**	**9.3500e-003**	**0.1677**		**876.5053**	**876.5053**	**0.0136**	**0.0851**	**902.2049**

3.7 Other Electrical - 2023

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735		1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**		**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.5100e-003	0.1307	0.0538	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.1084	74.1084	7.6000e-004	0.0110	77.3907
Worker	0.0584	0.0361	0.5854	1.5700e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		158.9985	158.9985	3.6800e-003	3.7500e-003	160.2089
Total	**0.0629**	**0.1668**	**0.6392**	**2.2700e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**233.1069**	**233.1069**	**4.4400e-003**	**0.0147**	**237.5996**

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735	0.0000	1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**	**0.0000**	**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.5100e-003	0.1307	0.0538	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.1084	74.1084	7.6000e-004	0.0110	77.3907
Worker	0.0584	0.0361	0.5854	1.5700e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		158.9985	158.9985	3.6800e-003	3.7500e-003	160.2089
Total	**0.0629**	**0.1668**	**0.6392**	**2.2700e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**233.1069**	**233.1069**	**4.4400e-003**	**0.0147**	**237.5996**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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 Non-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**

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 Non-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	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-003
Unmitigated	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-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	0.0199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-003
Total	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**		**1.4000e-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	0.0199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-003
Total	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**		**1.4000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

RCCD Solar Plan Project - Norco College

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	6.00	Acre	6.00	261,360.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Norco College solar construction

Land Use - Other non-asphalt surface area used as surrogate for solar PV array

Construction Phase - Adjusted based on applicant input

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Grading - Soils balanced on-site

Demolition - No demolition

Trips and VMT - Adjusted based on applicant input

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

On-road Fugitive Dust - Default

Architectural Coating - No coatings required

Vehicle Trips - Operational on-road vehicles modeled separately

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Construction Off-road Equipment Mitigation - Compliance with Rule 403 (water exposed area 2x per day)

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	41.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	230.00	20.00
tblConstructionPhase	NumDays	230.00	32.00
tblConstructionPhase	PhaseEndDate	9/29/2023	2/13/2023
tblConstructionPhase	PhaseEndDate	10/14/2022	10/28/2022
tblConstructionPhase	PhaseEndDate	8/16/2024	3/13/2023
tblConstructionPhase	PhaseEndDate	7/4/2025	4/26/2023
tblConstructionPhase	PhaseStartDate	11/12/2022	12/17/2022
tblConstructionPhase	PhaseStartDate	10/15/2022	10/29/2022
tblConstructionPhase	PhaseStartDate	9/30/2023	2/14/2023
tblConstructionPhase	PhaseStartDate	8/17/2024	3/14/2023
tblOffRoadEquipment	HorsePower	212.00	175.00
tblOffRoadEquipment	HorsePower	124.00	51.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.38	0.38

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.44	0.44
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	43.00	24.00
tblTripsAndVMT	VendorTripNumber	43.00	28.00
tblTripsAndVMT	VendorTripNumber	43.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	28.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	28.00
tblTripsAndVMT	WorkerTripNumber	110.00	36.00
tblTripsAndVMT	WorkerTripNumber	110.00	36.00
tblTripsAndVMT	WorkerTripNumber	110.00	16.00

2.0 Emissions Summary

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					
2022	1.5016	16.1196	12.8754	0.0232	7.3574	0.6802	8.0376	3.4988	0.6259	4.1247	0.0000	2,282.4356	2,282.4356	0.5783	0.0782	2,312.3836
2023	0.5947	6.2057	7.1891	0.0223	0.5817	0.1936	0.7497	0.1584	0.1783	0.3293	0.0000	2,211.8549	2,211.8549	0.4790	0.0856	2,246.0524
Maximum	**1.5016**	**16.1196**	**12.8754**	**0.0232**	**7.3574**	**0.6802**	**8.0376**	**3.4988**	**0.6259**	**4.1247**	**0.0000**	**2,282.4356**	**2,282.4356**	**0.5783**	**0.0856**	**2,312.3836**

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					
2022	1.5016	16.1196	12.8754	0.0232	3.4620	0.6802	4.1421	1.6152	0.6259	2.2411	0.0000	2,282.4356	2,282.4356	0.5783	0.0782	2,312.3836
2023	0.5947	6.2057	7.1891	0.0223	0.5817	0.1936	0.7497	0.1584	0.1783	0.3293	0.0000	2,211.8549	2,211.8549	0.4790	0.0856	2,246.0524
Maximum	**1.5016**	**16.1196**	**12.8754**	**0.0232**	**3.4620**	**0.6802**	**4.1421**	**1.6152**	**0.6259**	**2.2411**	**0.0000**	**2,282.4356**	**2,282.4356**	**0.5783**	**0.0856**	**2,312.3836**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	49.07	0.00	44.33	51.51	0.00	42.29	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-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	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**0.0000**	**1.4000e-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	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-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	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**0.0000**	**1.4000e-003**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2022	10/28/2022	5	20	
2	Grading	Grading	10/29/2022	11/11/2022	5	10	
3	Boring/Conduit	Trenching	11/12/2022	12/16/2022	5	25	
4	Racking/Other Mechanical	Building Construction	12/17/2022	2/13/2023	5	41	
5	PV Panel Installation	Building Construction	2/14/2023	3/13/2023	5	20	
6	Other Electrical	Building Construction	3/14/2023	4/26/2023	5	32	

Acres of Grading (Site Preparation Phase): 20

Acres of Grading (Grading Phase): 5

Acres of Paving: 6

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
PV Panel Installation	Cranes	0	7.00	231	0.29
Other Electrical	Cranes	0	7.00	231	0.29
PV Panel Installation	Forklifts	0	8.00	89	0.20
Racking/Other Mechanical	Cranes	0	7.00	231	0.29
Racking/Other Mechanical	Forklifts	0	8.00	89	0.20

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

Racking/Other Mechanical	Generator Sets		0	8.00	84	0.74
Grading	Graders		1	8.00	187	0.41
Grading	Excavators		0	8.00	158	0.38
Other Electrical	Forklifts		0	8.00	89	0.20
PV Panel Installation	Generator Sets		0	8.00	84	0.74
Other Electrical	Generator Sets		0	8.00	84	0.74
PV Panel Installation	Tractors/Loaders/Backhoes		0	7.00	97	0.37
Grading	Rubber Tired Dozers		0	8.00	247	0.40
Site Preparation	Graders		1	8.00	187	0.41
Racking/Other Mechanical	Tractors/Loaders/Backhoes		0	7.00	97	0.37
Other Electrical	Tractors/Loaders/Backhoes		0	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes		1	8.00	97	0.37
PV Panel Installation	Welders		0	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes		1	8.00	97	0.37
Racking/Other Mechanical	Welders		0	8.00	46	0.45
Other Electrical	Welders		0	8.00	46	0.45
Site Preparation	Rubber Tired Dozers		1	8.00	247	0.40
Grading	Rollers		1	8.00	80	0.38
Boring/Conduit	Crawler Tractors		1	8.00	175	0.43
Boring/Conduit	Excavators		1	8.00	158	0.38
Boring/Conduit	Rollers		1	8.00	80	0.38
Boring/Conduit	Rough Terrain Forklifts		1	8.00	100	0.40
Racking/Other Mechanical	Bore/Drill Rigs		1	8.00	221	0.50
Racking/Other Mechanical	Off-Highway Tractors		1	8.00	51	0.44
Racking/Other Mechanical	Rough Terrain Forklifts		1	8.00	100	0.40
PV Panel Installation	Rough Terrain Forklifts		1	8.00	100	0.40
Other Electrical	Aerial Lifts		1	8.00	63	0.31
Other Electrical	Graders		1	8.00	187	0.41
Other Electrical	Skid Steer Loaders		1	8.00	65	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
Boring/Conduit	4	28.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	28.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Racking/Other Mechanical	3	36.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
PV Panel Installation	1	36.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Other Electrical	3	16.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.4155	15.7102	7.5362	0.0182		0.6742	0.6742		0.6202	0.6202		1,767.519 9	1,767.519 9	0.5717		1,781.811 2
Total	**1.4155**	**15.7102**	**7.5362**	**0.0182**	**7.0826**	**0.6742**	**7.7568**	**3.4247**	**0.6202**	**4.0450**		**1,767.519 9**	**1,767.519 9**	**0.5717**		**1,781.811 2**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.3564	0.1221	1.4600e-003	0.0512	4.8900e-003	0.0561	0.0148	4.6800e-003	0.0194		154.5246	154.5246	1.6100e-003	0.0229	161.3990
Worker	0.0736	0.0530	0.6453	1.8400e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		186.0315	186.0315	5.0800e-003	5.2000e-003	187.7096
Total	**0.0861**	**0.4094**	**0.7674**	**3.3000e-003**	**0.2748**	**6.0000e-003**	**0.2808**	**0.0740**	**5.7000e-003**	**0.0797**		**340.5561**	**340.5561**	**6.6900e-003**	**0.0281**	**349.1086**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.4155	15.7102	7.5362	0.0182		0.6742	0.6742		0.6202	0.6202	0.0000	1,767.5199	1,767.5199	0.5717		1,781.8112
Total	**1.4155**	**15.7102**	**7.5362**	**0.0182**	**3.1872**	**0.6742**	**3.8613**	**1.5411**	**0.6202**	**2.1614**	**0.0000**	**1,767.5199**	**1,767.5199**	**0.5717**		**1,781.8112**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.3564	0.1221	1.4600e-003	0.0512	4.8900e-003	0.0561	0.0148	4.6800e-003	0.0194		154.5246	154.5246	1.6100e-003	0.0229	161.3990
Worker	0.0736	0.0530	0.6453	1.8400e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		186.0315	186.0315	5.0800e-003	5.2000e-003	187.7096
Total	**0.0861**	**0.4094**	**0.7674**	**3.3000e-003**	**0.2748**	**6.0000e-003**	**0.2808**	**0.0740**	**5.7000e-003**	**0.0797**		**340.5561**	**340.5561**	**6.6900e-003**	**0.0281**	**349.1086**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.7439	8.6373	5.7965	0.0123		0.3555	0.3555		0.3271	0.3271		1,193.4120	1,193.4120	0.3860		1,203.0613
Total	**0.7439**	**8.6373**	**5.7965**	**0.0123**	**0.5303**	**0.3555**	**0.8858**	**0.0573**	**0.3271**	**0.3843**		**1,193.4120**	**1,193.4120**	**0.3860**		**1,203.0613**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.3564	0.1221	1.4600e-003	0.0512	4.8900e-003	0.0561	0.0148	4.6800e-003	0.0194		154.5246	154.5246	1.6100e-003	0.0229	161.3990
Worker	0.1031	0.0742	0.9034	2.5800e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		260.4441	260.4441	7.1200e-003	7.2900e-003	262.7934
Total	**0.1155**	**0.4306**	**1.0255**	**4.0400e-003**	**0.3642**	**6.4500e-003**	**0.3707**	**0.0978**	**6.1100e-003**	**0.1039**		**414.9687**	**414.9687**	**8.7300e-003**	**0.0302**	**424.1924**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.7439	8.6373	5.7965	0.0123		0.3555	0.3555		0.3271	0.3271	0.0000	1,193.4120	1,193.4120	0.3860		1,203.0613
Total	**0.7439**	**8.6373**	**5.7965**	**0.0123**	**0.2386**	**0.3555**	**0.5941**	**0.0258**	**0.3271**	**0.3529**	**0.0000**	**1,193.4120**	**1,193.4120**	**0.3860**		**1,203.0613**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.3564	0.1221	1.4600e-003	0.0512	4.8900e-003	0.0561	0.0148	4.6800e-003	0.0194		154.5246	154.5246	1.6100e-003	0.0229	161.3990
Worker	0.1031	0.0742	0.9034	2.5800e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		260.4441	260.4441	7.1200e-003	7.2900e-003	262.7934
Total	**0.1155**	**0.4306**	**1.0255**	**4.0400e-003**	**0.3642**	**6.4500e-003**	**0.3707**	**0.0978**	**6.1100e-003**	**0.1039**		**414.9687**	**414.9687**	**8.7300e-003**	**0.0302**	**424.1924**

3.4 Boring/Conduit - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9950	10.0421	11.7277	0.0177		0.5192	0.5192		0.4777	0.4777		1,712.9423	1,712.9423	0.5540		1,726.7923
Total	**0.9950**	**10.0421**	**11.7277**	**0.0177**		**0.5192**	**0.5192**		**0.4777**	**0.4777**		**1,712.9423**	**1,712.9423**	**0.5540**		**1,726.7923**

3.4 Boring/Conduit - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0249	0.7128	0.2443	2.9200e-003	0.1025	9.7800e-003	0.1123	0.0295	9.3600e-003	0.0389		309.0492	309.0492	3.2200e-003	0.0459	322.7979
Worker	0.1031	0.0742	0.9034	2.5800e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		260.4441	260.4441	7.1200e-003	7.2900e-003	262.7934
Total	**0.1280**	**0.7870**	**1.1477**	**5.5000e-003**	**0.4155**	**0.0113**	**0.4268**	**0.1125**	**0.0108**	**0.1233**		**569.4933**	**569.4933**	**0.0103**	**0.0532**	**585.5913**

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	0.9950	10.0421	11.7277	0.0177		0.5192	0.5192		0.4777	0.4777	0.0000	1,712.9423	1,712.9423	0.5540		1,726.7923
Total	**0.9950**	**10.0421**	**11.7277**	**0.0177**		**0.5192**	**0.5192**		**0.4777**	**0.4777**	**0.0000**	**1,712.9423**	**1,712.9423**	**0.5540**		**1,726.7923**

3.4 Boring/Conduit - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0249	0.7128	0.2443	2.9200e-003	0.1025	9.7800e-003	0.1123	0.0295	9.3600e-003	0.0389		309.0492	309.0492	3.2200e-003	0.0459	322.7979
Worker	0.1031	0.0742	0.9034	2.5800e-003	0.3130	1.5600e-003	0.3145	0.0830	1.4300e-003	0.0844		260.4441	260.4441	7.1200e-003	7.2900e-003	262.7934
Total	**0.1280**	**0.7870**	**1.1477**	**5.5000e-003**	**0.4155**	**0.0113**	**0.4268**	**0.1125**	**0.0108**	**0.1233**		**569.4933**	**569.4933**	**0.0103**	**0.0532**	**585.5913**

3.5 Racking/Other Mechanical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4740	5.0973	5.8045	0.0149		0.2109	0.2109		0.1941	0.1941		1,439.7134	1,439.7134	0.4656		1,451.3542
Total	**0.4740**	**5.0973**	**5.8045**	**0.0149**		**0.2109**	**0.2109**		**0.1941**	**0.1941**		**1,439.7134**	**1,439.7134**	**0.4656**		**1,451.3542**

3.5 Racking/Other Mechanical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0374	1.0692	0.3664	4.3700e-003	0.1537	0.0147	0.1684	0.0443	0.0140	0.0583		463.5738	463.5738	4.8300e-003	0.0688	484.1969
Worker	0.1325	0.0954	1.1615	3.3100e-003	0.4024	2.0000e-003	0.4044	0.1067	1.8400e-003	0.1086		334.8567	334.8567	9.1500e-003	9.3700e-003	337.8773
Total	**0.1699**	**1.1646**	**1.5279**	**7.6800e-003**	**0.5561**	**0.0167**	**0.5728**	**0.1510**	**0.0159**	**0.1669**		**798.4305**	**798.4305**	**0.0140**	**0.0782**	**822.0741**

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	0.4740	5.0973	5.8045	0.0149		0.2109	0.2109		0.1941	0.1941	0.0000	1,439.7134	1,439.7134	0.4656		1,451.3542
Total	**0.4740**	**5.0973**	**5.8045**	**0.0149**		**0.2109**	**0.2109**		**0.1941**	**0.1941**	**0.0000**	**1,439.7134**	**1,439.7134**	**0.4656**		**1,451.3542**

3.5 Racking/Other Mechanical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0374	1.0692	0.3664	4.3700e-003	0.1537	0.0147	0.1684	0.0443	0.0140	0.0583		463.5738	463.5738	4.8300e-003	0.0688	484.1969
Worker	0.1325	0.0954	1.1615	3.3100e-003	0.4024	2.0000e-003	0.4044	0.1067	1.8400e-003	0.1086		334.8567	334.8567	9.1500e-003	9.3700e-003	337.8773
Total	**0.1699**	**1.1646**	**1.5279**	**7.6800e-003**	**0.5561**	**0.0167**	**0.5728**	**0.1510**	**0.0159**	**0.1669**		**798.4305**	**798.4305**	**0.0140**	**0.0782**	**822.0741**

3.5 Racking/Other Mechanical - 2023

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	0.4464	4.6687	5.7859	0.0149		0.1848	0.1848		0.1701	0.1701		1,441.9485	1,441.9485	0.4664		1,453.6074
Total	**0.4464**	**4.6687**	**5.7859**	**0.0149**		**0.1848**	**0.1848**		**0.1701**	**0.1701**		**1,441.9485**	**1,441.9485**	**0.4664**		**1,453.6074**

3.5 Racking/Other Mechanical - 2023

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	0.0251	0.8316	0.3337	4.2000e-003	0.1537	6.8500e-003	0.1606	0.0443	6.5600e-003	0.0508		445.7539	445.7539	4.4400e-003	0.0659	465.5106
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1483**	**0.9158**	**1.4033**	**7.4100e-003**	**0.5561**	**8.7300e-003**	**0.5649**	**0.1510**	**8.2900e-003**	**0.1593**		**769.9064**	**769.9064**	**0.0127**	**0.0746**	**792.4450**

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	0.4464	4.6687	5.7859	0.0149		0.1848	0.1848		0.1701	0.1701	0.0000	1,441.9485	1,441.9485	0.4664		1,453.6074
Total	**0.4464**	**4.6687**	**5.7859**	**0.0149**		**0.1848**	**0.1848**		**0.1701**	**0.1701**	**0.0000**	**1,441.9485**	**1,441.9485**	**0.4664**		**1,453.6074**

3.5 Racking/Other Mechanical - 2023

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	0.0251	0.8316	0.3337	4.2000e-003	0.1537	6.8500e-003	0.1606	0.0443	6.5600e-003	0.0508		445.7539	445.7539	4.4400e-003	0.0659	465.5106
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1483**	**0.9158**	**1.4033**	**7.4100e-003**	**0.5561**	**8.7300e-003**	**0.5649**	**0.1510**	**8.2900e-003**	**0.1593**		**769.9064**	**769.9064**	**0.0127**	**0.0746**	**792.4450**

3.6 PV Panel Installation - 2023

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416		335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**		**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0292	0.9701	0.3893	4.9000e-003	0.1793	8.0000e-003	0.1873	0.0516	7.6500e-003	0.0593		520.0462	520.0462	5.1900e-003	0.0769	543.0957
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1524**	**1.0544**	**1.4589**	**8.1100e-003**	**0.5817**	**9.8800e-003**	**0.5916**	**0.1584**	**9.3800e-003**	**0.1677**		**844.1987**	**844.1987**	**0.0134**	**0.0856**	**870.0301**

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416	0.0000	335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**	**0.0000**	**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0292	0.9701	0.3893	4.9000e-003	0.1793	8.0000e-003	0.1873	0.0516	7.6500e-003	0.0593		520.0462	520.0462	5.1900e-003	0.0769	543.0957
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1524**	**1.0544**	**1.4589**	**8.1100e-003**	**0.5817**	**9.8800e-003**	**0.5916**	**0.1584**	**9.3800e-003**	**0.1677**		**844.1987**	**844.1987**	**0.0134**	**0.0856**	**870.0301**

3.7 Other Electrical - 2023

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735		1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**		**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.1800e-003	0.1386	0.0556	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.2923	74.2923	7.4000e-004	0.0110	77.5851
Worker	0.0548	0.0375	0.4754	1.4300e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		144.0678	144.0678	3.6600e-003	3.8400e-003	145.3041
Total	**0.0589**	**0.1760**	**0.5310**	**2.1300e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**218.3601**	**218.3601**	**4.4000e-003**	**0.0148**	**222.8893**

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735	0.0000	1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**	**0.0000**	**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.1800e-003	0.1386	0.0556	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.2923	74.2923	7.4000e-004	0.0110	77.5851
Worker	0.0548	0.0375	0.4754	1.4300e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		144.0678	144.0678	3.6600e-003	3.8400e-003	145.3041
Total	**0.0589**	**0.1760**	**0.5310**	**2.1300e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**218.3601**	**218.3601**	**4.4000e-003**	**0.0148**	**222.8893**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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 Non-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**

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 Non-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	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-003
Unmitigated	0.1125	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-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	0.0199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-003
Total	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**		**1.4000e-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	0.0199					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0926					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.0000e-005	1.0000e-005	6.1000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.3100e-003	1.3100e-003	0.0000		1.4000e-003
Total	**0.1125**	**1.0000e-005**	**6.1000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.3100e-003**	**1.3100e-003**	**0.0000**		**1.4000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

RCCD Solar Plan Project - Norco College

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	6.00	Acre	6.00	261,360.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Norco College solar construction

Land Use - Other non-asphalt surface area used as surrogate for solar PV array

Construction Phase - Adjusted based on applicant input

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Grading - Soils balanced on-site

Demolition - No demolition

Trips and VMT - Adjusted based on applicant input

On-road Fugitive Dust - Default

Architectural Coating - No coatings required

Vehicle Trips - Operational on-road vehicles modeled separately

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Construction Off-road Equipment Mitigation - Compliance with Rule 403 (water exposed area 2x per day)

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	230.00	41.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	230.00	20.00
tblConstructionPhase	NumDays	230.00	32.00
tblConstructionPhase	PhaseEndDate	9/29/2023	2/13/2023
tblConstructionPhase	PhaseEndDate	10/14/2022	10/28/2022
tblConstructionPhase	PhaseEndDate	8/16/2024	3/13/2023
tblConstructionPhase	PhaseEndDate	7/4/2025	4/26/2023
tblConstructionPhase	PhaseStartDate	11/12/2022	12/17/2022
tblConstructionPhase	PhaseStartDate	10/15/2022	10/29/2022
tblConstructionPhase	PhaseStartDate	9/30/2023	2/14/2023
tblConstructionPhase	PhaseStartDate	8/17/2024	3/14/2023
tblOffRoadEquipment	HorsePower	212.00	175.00
tblOffRoadEquipment	HorsePower	124.00	51.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.43	0.43
tblOffRoadEquipment	LoadFactor	0.38	0.38

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

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.44	0.44
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	43.00	24.00
tblTripsAndVMT	VendorTripNumber	43.00	28.00
tblTripsAndVMT	VendorTripNumber	43.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	28.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	28.00
tblTripsAndVMT	WorkerTripNumber	110.00	36.00
tblTripsAndVMT	WorkerTripNumber	110.00	36.00
tblTripsAndVMT	WorkerTripNumber	110.00	16.00

2.0 Emissions Summary

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					
2022	0.0364	0.3732	0.3161	7.0000e-004	0.0858	0.0164	0.1022	0.0379	0.0151	0.0530	0.0000	62.6207	62.6207	0.0156	1.3500e-003	63.4141
2023	0.0203	0.2103	0.2257	6.6000e-004	0.0174	6.6000e-003	0.0240	4.7300e-003	6.0800e-003	0.0108	0.0000	59.6962	59.6962	0.0126	2.0400e-003	60.6198
Maximum	**0.0364**	**0.3732**	**0.3161**	**7.0000e-004**	**0.0858**	**0.0164**	**0.1022**	**0.0379**	**0.0151**	**0.0530**	**0.0000**	**62.6207**	**62.6207**	**0.0156**	**2.0400e-003**	**63.4141**

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					
2022	0.0364	0.3732	0.3161	7.0000e-004	0.0454	0.0164	0.0618	0.0189	0.0151	0.0340	0.0000	62.6206	62.6206	0.0156	1.3500e-003	63.4141
2023	0.0203	0.2103	0.2257	6.6000e-004	0.0174	6.6000e-003	0.0240	4.7300e-003	6.0800e-003	0.0108	0.0000	59.6962	59.6962	0.0126	2.0400e-003	60.6198
Maximum	**0.0364**	**0.3732**	**0.3161**	**7.0000e-004**	**0.0454**	**0.0164**	**0.0618**	**0.0189**	**0.0151**	**0.0340**	**0.0000**	**62.6206**	**62.6206**	**0.0156**	**2.0400e-003**	**63.4141**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**39.14**	**0.00**	**32.01**	**44.58**	**0.00**	**29.79**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**10-1-2022**	**12-31-2022**	0.4122	0.4122
2	**1-1-2023**	**3-31-2023**	0.1677	0.1677
3	**4-1-2023**	**6-30-2023**	0.0626	0.0626
		Highest	0.4122	0.4122

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	0.0205	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-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	**0.0205**	**0.0000**	**8.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-004**

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	0.0205	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-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	**0.0205**	**0.0000**	**8.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-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	10/1/2022	10/28/2022	5	20	
2	Grading	Grading	10/29/2022	11/11/2022	5	10	
3	Boring/Conduit	Trenching	11/12/2022	12/16/2022	5	25	

4	Racking/Other Mechanical	Building Construction	12/17/2022	2/13/2023	5	41	
5	PV Panel Installation	Building Construction	2/14/2023	3/13/2023	5	20	
6	Other Electrical	Building Construction	3/14/2023	4/26/2023	5	32	

Acres of Grading (Site Preparation Phase): 20

Acres of Grading (Grading Phase): 5

Acres of Paving: 6

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
PV Panel Installation	Cranes	0	7.00	231	0.29
Other Electrical	Cranes	0	7.00	231	0.29
PV Panel Installation	Forklifts	0	8.00	89	0.20
Racking/Other Mechanical	Cranes	0	7.00	231	0.29
Racking/Other Mechanical	Forklifts	0	8.00	89	0.20
Racking/Other Mechanical	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Grading	Excavators	0	8.00	158	0.38
Other Electrical	Forklifts	0	8.00	89	0.20
PV Panel Installation	Generator Sets	0	8.00	84	0.74
Other Electrical	Generator Sets	0	8.00	84	0.74
PV Panel Installation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Graders	1	8.00	187	0.41
Racking/Other Mechanical	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Other Electrical	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

PV Panel Installation	Welders	0	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Racking/Other Mechanical	Welders	0	8.00	46	0.45
Other Electrical	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rollers	1	8.00	80	0.38
Boring/Conduit	Crawler Tractors	1	8.00	175	0.43
Boring/Conduit	Excavators	1	8.00	158	0.38
Boring/Conduit	Rollers	1	8.00	80	0.38
Boring/Conduit	Rough Terrain Forklifts	1	8.00	100	0.40
Racking/Other Mechanical	Bore/Drill Rigs	1	8.00	221	0.50
Racking/Other Mechanical	Off-Highway Tractors	1	8.00	51	0.44
Racking/Other Mechanical	Rough Terrain Forklifts	1	8.00	100	0.40
PV Panel Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Other Electrical	Aerial Lifts	1	8.00	63	0.31
Other Electrical	Graders	1	8.00	187	0.41
Other Electrical	Skid Steer Loaders	1	8.00	65	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
Boring/Conduit	4	28.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	28.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Racking/Other Mechanical	3	36.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
PV Panel Installation	1	36.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Other Electrical	3	16.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0708	0.0000	0.0708	0.0343	0.0000	0.0343	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0142	0.1571	0.0754	1.8000e-004		6.7400e-003	6.7400e-003		6.2000e-003	6.2000e-003	0.0000	16.0347	16.0347	5.1900e-003	0.0000	16.1643
Total	**0.0142**	**0.1571**	**0.0754**	**1.8000e-004**	**0.0708**	**6.7400e-003**	**0.0776**	**0.0343**	**6.2000e-003**	**0.0405**	**0.0000**	**16.0347**	**16.0347**	**5.1900e-003**	**0.0000**	**16.1643**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.3000e-004	3.5500e-003	1.2000e-003	1.0000e-005	5.1000e-004	5.0000e-005	5.5000e-004	1.5000e-004	5.0000e-005	1.9000e-004	0.0000	1.4009	1.4009	1.0000e-005	2.1000e-004	1.4633
Worker	7.0000e-004	5.4000e-004	6.8000e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.7271	1.7271	5.0000e-005	5.0000e-005	1.7426
Total	**8.3000e-004**	**4.0900e-003**	**8.0000e-003**	**3.0000e-005**	**2.7100e-003**	**6.0000e-005**	**2.7600e-003**	**7.3000e-004**	**6.0000e-005**	**7.8000e-004**	**0.0000**	**3.1280**	**3.1280**	**6.0000e-005**	**2.6000e-004**	**3.2058**

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					0.0319	0.0000	0.0319	0.0154	0.0000	0.0154	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0142	0.1571	0.0754	1.8000e-004		6.7400e-003	6.7400e-003		6.2000e-003	6.2000e-003	0.0000	16.0347	16.0347	5.1900e-003	0.0000	16.1643
Total	**0.0142**	**0.1571**	**0.0754**	**1.8000e-004**	**0.0319**	**6.7400e-003**	**0.0386**	**0.0154**	**6.2000e-003**	**0.0216**	**0.0000**	**16.0347**	**16.0347**	**5.1900e-003**	**0.0000**	**16.1643**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.3000e-004	3.5500e-003	1.2000e-003	1.0000e-005	5.1000e-004	5.0000e-005	5.5000e-004	1.5000e-004	5.0000e-005	1.9000e-004	0.0000	1.4009	1.4009	1.0000e-005	2.1000e-004	1.4633
Worker	7.0000e-004	5.4000e-004	6.8000e-003	2.0000e-005	2.2000e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.7271	1.7271	5.0000e-005	5.0000e-005	1.7426
Total	**8.3000e-004**	**4.0900e-003**	**8.0000e-003**	**3.0000e-005**	**2.7100e-003**	**6.0000e-005**	**2.7600e-003**	**7.3000e-004**	**6.0000e-005**	**7.8000e-004**	**0.0000**	**3.1280**	**3.1280**	**6.0000e-005**	**2.6000e-004**	**3.2058**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7200e-003	0.0432	0.0290	6.0000e-005		1.7800e-003	1.7800e-003		1.6400e-003	1.6400e-003	0.0000	5.4132	5.4132	1.7500e-003	0.0000	5.4570
Total	**3.7200e-003**	**0.0432**	**0.0290**	**6.0000e-005**	**2.6500e-003**	**1.7800e-003**	**4.4300e-003**	**2.9000e-004**	**1.6400e-003**	**1.9300e-003**	**0.0000**	**5.4132**	**5.4132**	**1.7500e-003**	**0.0000**	**5.4570**

3.3 Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	6.0000e-005	1.7800e-003	6.0000e-004	1.0000e-005	2.5000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	1.0000e-004	0.0000	0.7005	0.7005	1.0000e-005	1.0000e-004	0.7316
Worker	4.9000e-004	3.8000e-004	4.7600e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.2089	1.2089	3.0000e-005	3.0000e-005	1.2198
Total	**5.5000e-004**	**2.1600e-003**	**5.3600e-003**	**2.0000e-005**	**1.7900e-003**	**3.0000e-005**	**1.8300e-003**	**4.8000e-004**	**3.0000e-005**	**5.2000e-004**	**0.0000**	**1.9094**	**1.9094**	**4.0000e-005**	**1.3000e-004**	**1.9514**

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					1.1900e-003	0.0000	1.1900e-003	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7200e-003	0.0432	0.0290	6.0000e-005		1.7800e-003	1.7800e-003		1.6400e-003	1.6400e-003	0.0000	5.4132	5.4132	1.7500e-003	0.0000	5.4570
Total	**3.7200e-003**	**0.0432**	**0.0290**	**6.0000e-005**	**1.1900e-003**	**1.7800e-003**	**2.9700e-003**	**1.3000e-004**	**1.6400e-003**	**1.7700e-003**	**0.0000**	**5.4132**	**5.4132**	**1.7500e-003**	**0.0000**	**5.4570**

3.3 Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	6.0000e-005	1.7800e-003	6.0000e-004	1.0000e-005	2.5000e-004	2.0000e-005	2.8000e-004	7.0000e-005	2.0000e-005	1.0000e-004	0.0000	0.7005	0.7005	1.0000e-005	1.0000e-004	0.7316
Worker	4.9000e-004	3.8000e-004	4.7600e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.2089	1.2089	3.0000e-005	3.0000e-005	1.2198
Total	**5.5000e-004**	**2.1600e-003**	**5.3600e-003**	**2.0000e-005**	**1.7900e-003**	**3.0000e-005**	**1.8300e-003**	**4.8000e-004**	**3.0000e-005**	**5.2000e-004**	**0.0000**	**1.9094**	**1.9094**	**4.0000e-005**	**1.3000e-004**	**1.9514**

3.4 Boring/Conduit - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0124	0.1255	0.1466	2.2000e-004		6.4900e-003	6.4900e-003		5.9700e-003	5.9700e-003	0.0000	19.4244	19.4244	6.2800e-003	0.0000	19.5815
Total	**0.0124**	**0.1255**	**0.1466**	**2.2000e-004**		**6.4900e-003**	**6.4900e-003**		**5.9700e-003**	**5.9700e-003**	**0.0000**	**19.4244**	**19.4244**	**6.2800e-003**	**0.0000**	**19.5815**

3.4 Boring/Conduit - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	3.2000e-004	8.8800e-003	2.9900e-003	4.0000e-005	1.2600e-003	1.2000e-004	1.3900e-003	3.6000e-004	1.2000e-004	4.8000e-004	0.0000	3.5024	3.5024	4.0000e-005	5.2000e-004	3.6582
Worker	1.2200e-003	9.5000e-004	0.0119	3.0000e-005	3.8500e-003	2.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.0224	3.0224	8.0000e-005	8.0000e-005	3.0495
Total	**1.5400e-003**	**9.8300e-003**	**0.0149**	**7.0000e-005**	**5.1100e-003**	**1.4000e-004**	**5.2600e-003**	**1.3800e-003**	**1.4000e-004**	**1.5200e-003**	**0.0000**	**6.5247**	**6.5247**	**1.2000e-004**	**6.0000e-004**	**6.7076**

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	0.0124	0.1255	0.1466	2.2000e-004		6.4900e-003	6.4900e-003		5.9700e-003	5.9700e-003	0.0000	19.4244	19.4244	6.2800e-003	0.0000	19.5815
Total	**0.0124**	**0.1255**	**0.1466**	**2.2000e-004**		**6.4900e-003**	**6.4900e-003**		**5.9700e-003**	**5.9700e-003**	**0.0000**	**19.4244**	**19.4244**	**6.2800e-003**	**0.0000**	**19.5815**

3.4 Boring/Conduit - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	3.2000e-004	8.8800e-003	2.9900e-003	4.0000e-005	1.2600e-003	1.2000e-004	1.3900e-003	3.6000e-004	1.2000e-004	4.8000e-004	0.0000	3.5024	3.5024	4.0000e-005	5.2000e-004	3.6582
Worker	1.2200e-003	9.5000e-004	0.0119	3.0000e-005	3.8500e-003	2.0000e-005	3.8700e-003	1.0200e-003	2.0000e-005	1.0400e-003	0.0000	3.0224	3.0224	8.0000e-005	8.0000e-005	3.0495
Total	**1.5400e-003**	**9.8300e-003**	**0.0149**	**7.0000e-005**	**5.1100e-003**	**1.4000e-004**	**5.2600e-003**	**1.3800e-003**	**1.4000e-004**	**1.5200e-003**	**0.0000**	**6.5247**	**6.5247**	**1.2000e-004**	**6.0000e-004**	**6.7076**

3.5 Racking/Other Mechanical - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.3700e-003	0.0255	0.0290	7.0000e-005		1.0500e-003	1.0500e-003		9.7000e-004	9.7000e-004	0.0000	6.5304	6.5304	2.1100e-003	0.0000	6.5832
Total	**2.3700e-003**	**0.0255**	**0.0290**	**7.0000e-005**		**1.0500e-003**	**1.0500e-003**		**9.7000e-004**	**9.7000e-004**	**0.0000**	**6.5304**	**6.5304**	**2.1100e-003**	**0.0000**	**6.5832**

3.5 Racking/Other Mechanical - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.9000e-004	5.3300e-003	1.7900e-003	2.0000e-005	7.6000e-004	7.0000e-005	8.3000e-004	2.2000e-004	7.0000e-005	2.9000e-004	0.0000	2.1014	2.1014	2.0000e-005	3.1000e-004	2.1949
Worker	6.3000e-004	4.9000e-004	6.1200e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.3000e-004	0.0000	1.5544	1.5544	4.0000e-005	4.0000e-005	1.5683
Total	**8.2000e-004**	**5.8200e-003**	**7.9100e-003**	**4.0000e-005**	**2.7400e-003**	**8.0000e-005**	**2.8200e-003**	**7.5000e-004**	**8.0000e-005**	**8.2000e-004**	**0.0000**	**3.6558**	**3.6558**	**6.0000e-005**	**3.5000e-004**	**3.7632**

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	2.3700e-003	0.0255	0.0290	7.0000e-005		1.0500e-003	1.0500e-003		9.7000e-004	9.7000e-004	0.0000	6.5304	6.5304	2.1100e-003	0.0000	6.5832
Total	**2.3700e-003**	**0.0255**	**0.0290**	**7.0000e-005**		**1.0500e-003**	**1.0500e-003**		**9.7000e-004**	**9.7000e-004**	**0.0000**	**6.5304**	**6.5304**	**2.1100e-003**	**0.0000**	**6.5832**

3.5 Racking/Other Mechanical - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.9000e-004	5.3300e-003	1.7900e-003	2.0000e-005	7.6000e-004	7.0000e-005	8.3000e-004	2.2000e-004	7.0000e-005	2.9000e-004	0.0000	2.1014	2.1014	2.0000e-005	3.1000e-004	2.1949
Worker	6.3000e-004	4.9000e-004	6.1200e-003	2.0000e-005	1.9800e-003	1.0000e-005	1.9900e-003	5.3000e-004	1.0000e-005	5.3000e-004	0.0000	1.5544	1.5544	4.0000e-005	4.0000e-005	1.5683
Total	**8.2000e-004**	**5.8200e-003**	**7.9100e-003**	**4.0000e-005**	**2.7400e-003**	**8.0000e-005**	**2.8200e-003**	**7.5000e-004**	**8.0000e-005**	**8.2000e-004**	**0.0000**	**3.6558**	**3.6558**	**6.0000e-005**	**3.5000e-004**	**3.7632**

3.5 Racking/Other Mechanical - 2023

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	6.9200e-003	0.0724	0.0897	2.3000e-004		2.8600e-003	2.8600e-003		2.6400e-003	2.6400e-003	0.0000	20.2758	20.2758	6.5600e-003	0.0000	20.4397
Total	**6.9200e-003**	**0.0724**	**0.0897**	**2.3000e-004**		**2.8600e-003**	**2.8600e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**20.2758**	**20.2758**	**6.5600e-003**	**0.0000**	**20.4397**

3.5 Racking/Other Mechanical - 2023

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	4.0000e-004	0.0128	5.0800e-003	7.0000e-005	2.3500e-003	1.1000e-004	2.4600e-003	6.8000e-004	1.0000e-004	7.8000e-004	0.0000	6.2589	6.2589	6.0000e-005	9.3000e-004	6.5363
Worker	1.8100e-003	1.3400e-003	0.0175	5.0000e-005	6.1300e-003	3.0000e-005	6.1600e-003	1.6300e-003	3.0000e-005	1.6600e-003	0.0000	4.6641	4.6641	1.2000e-004	1.2000e-004	4.7039
Total	**2.2100e-003**	**0.0141**	**0.0226**	**1.2000e-004**	**8.4800e-003**	**1.4000e-004**	**8.6200e-003**	**2.3100e-003**	**1.3000e-004**	**2.4400e-003**	**0.0000**	**10.9230**	**10.9230**	**1.8000e-004**	**1.0500e-003**	**11.2402**

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	6.9200e-003	0.0724	0.0897	2.3000e-004		2.8600e-003	2.8600e-003		2.6400e-003	2.6400e-003	0.0000	20.2757	20.2757	6.5600e-003	0.0000	20.4397
Total	**6.9200e-003**	**0.0724**	**0.0897**	**2.3000e-004**		**2.8600e-003**	**2.8600e-003**		**2.6400e-003**	**2.6400e-003**	**0.0000**	**20.2757**	**20.2757**	**6.5600e-003**	**0.0000**	**20.4397**

3.5 Racking/Other Mechanical - 2023

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	4.0000e-004	0.0128	5.0800e-003	7.0000e-005	2.3500e-003	1.1000e-004	2.4600e-003	6.8000e-004	1.0000e-004	7.8000e-004	0.0000	6.2589	6.2589	6.0000e-005	9.3000e-004	6.5363
Worker	1.8100e-003	1.3400e-003	0.0175	5.0000e-005	6.1300e-003	3.0000e-005	6.1600e-003	1.6300e-003	3.0000e-005	1.6600e-003	0.0000	4.6641	4.6641	1.2000e-004	1.2000e-004	4.7039
Total	**2.2100e-003**	**0.0141**	**0.0226**	**1.2000e-004**	**8.4800e-003**	**1.4000e-004**	**8.6200e-003**	**2.3100e-003**	**1.3000e-004**	**2.4400e-003**	**0.0000**	**10.9230**	**10.9230**	**1.8000e-004**	**1.0500e-003**	**11.2402**

3.6 PV Panel Installation - 2023

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	1.0600e-003	0.0141	0.0230	3.0000e-005		4.5000e-004	4.5000e-004		4.2000e-004	4.2000e-004	0.0000	3.0434	3.0434	9.8000e-004	0.0000	3.0680
Total	**1.0600e-003**	**0.0141**	**0.0230**	**3.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**3.0434**	**3.0434**	**9.8000e-004**	**0.0000**	**3.0680**

3.6 PV Panel Installation - 2023

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	3.0000e-004	9.6000e-003	3.8200e-003	5.0000e-005	1.7700e-003	8.0000e-005	1.8500e-003	5.1000e-004	8.0000e-005	5.9000e-004	0.0000	4.7110	4.7110	5.0000e-005	7.0000e-004	4.9198
Worker	1.1700e-003	8.7000e-004	0.0113	3.0000e-005	3.9600e-003	2.0000e-005	3.9800e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0091	3.0091	8.0000e-005	8.0000e-005	3.0348
Total	**1.4700e-003**	**0.0105**	**0.0151**	**8.0000e-005**	**5.7300e-003**	**1.0000e-004**	**5.8300e-003**	**1.5600e-003**	**1.0000e-004**	**1.6600e-003**	**0.0000**	**7.7201**	**7.7201**	**1.3000e-004**	**7.8000e-004**	**7.9546**

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	1.0600e-003	0.0141	0.0230	3.0000e-005		4.5000e-004	4.5000e-004		4.2000e-004	4.2000e-004	0.0000	3.0434	3.0434	9.8000e-004	0.0000	3.0680
Total	**1.0600e-003**	**0.0141**	**0.0230**	**3.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.2000e-004**	**4.2000e-004**	**0.0000**	**3.0434**	**3.0434**	**9.8000e-004**	**0.0000**	**3.0680**

3.6 PV Panel Installation - 2023

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	3.0000e-004	9.6000e-003	3.8200e-003	5.0000e-005	1.7700e-003	8.0000e-005	1.8500e-003	5.1000e-004	8.0000e-005	5.9000e-004	0.0000	4.7110	4.7110	5.0000e-005	7.0000e-004	4.9198
Worker	1.1700e-003	8.7000e-004	0.0113	3.0000e-005	3.9600e-003	2.0000e-005	3.9800e-003	1.0500e-003	2.0000e-005	1.0700e-003	0.0000	3.0091	3.0091	8.0000e-005	8.0000e-005	3.0348
Total	**1.4700e-003**	**0.0105**	**0.0151**	**8.0000e-005**	**5.7300e-003**	**1.0000e-004**	**5.8300e-003**	**1.5600e-003**	**1.0000e-004**	**1.6600e-003**	**0.0000**	**7.7201**	**7.7201**	**1.3000e-004**	**7.8000e-004**	**7.9546**

3.7 Other Electrical - 2023

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	7.7000e-003	0.0965	0.0664	1.7000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	14.5175	14.5175	4.7000e-003	0.0000	14.6348
Total	**7.7000e-003**	**0.0965**	**0.0664**	**1.7000e-004**		**3.0200e-003**	**3.0200e-003**		**2.7800e-003**	**2.7800e-003**	**0.0000**	**14.5175**	**14.5175**	**4.7000e-003**	**0.0000**	**14.6348**

3.7 Other Electrical - 2023

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	2.1900e-003	8.7000e-004	1.0000e-005	4.0000e-004	2.0000e-005	4.2000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	1.0768	1.0768	1.0000e-005	1.6000e-004	1.1245
Worker	8.3000e-004	6.2000e-004	8.0200e-003	2.0000e-005	2.8100e-003	1.0000e-005	2.8300e-003	7.5000e-004	1.0000e-005	7.6000e-004	0.0000	2.1398	2.1398	5.0000e-005	6.0000e-005	2.1581
Total	**9.0000e-004**	**2.8100e-003**	**8.8900e-003**	**3.0000e-005**	**3.2100e-003**	**3.0000e-005**	**3.2500e-003**	**8.7000e-004**	**3.0000e-005**	**8.9000e-004**	**0.0000**	**3.2166**	**3.2166**	**6.0000e-005**	**2.2000e-004**	**3.2826**

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	7.7000e-003	0.0965	0.0664	1.7000e-004		3.0200e-003	3.0200e-003		2.7800e-003	2.7800e-003	0.0000	14.5174	14.5174	4.7000e-003	0.0000	14.6348
Total	**7.7000e-003**	**0.0965**	**0.0664**	**1.7000e-004**		**3.0200e-003**	**3.0200e-003**		**2.7800e-003**	**2.7800e-003**	**0.0000**	**14.5174**	**14.5174**	**4.7000e-003**	**0.0000**	**14.6348**

3.7 Other Electrical - 2023

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	2.1900e-003	8.7000e-004	1.0000e-005	4.0000e-004	2.0000e-005	4.2000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	1.0768	1.0768	1.0000e-005	1.6000e-004	1.1245
Worker	8.3000e-004	6.2000e-004	8.0200e-003	2.0000e-005	2.8100e-003	1.0000e-005	2.8300e-003	7.5000e-004	1.0000e-005	7.6000e-004	0.0000	2.1398	2.1398	5.0000e-005	6.0000e-005	2.1581
Total	**9.0000e-004**	**2.8100e-003**	**8.8900e-003**	**3.0000e-005**	**3.2100e-003**	**3.0000e-005**	**3.2500e-003**	**8.7000e-004**	**3.0000e-005**	**8.9000e-004**	**0.0000**	**3.2166**	**3.2166**	**6.0000e-005**	**2.2000e-004**	**3.2826**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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

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 Non-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 Non-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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-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 Non-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

	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	0.0205	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Unmitigated	0.0205	0.0000	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-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	3.6300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0169					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	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Total	**0.0205**	**0.0000**	**8.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-004**

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	3.6300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0169					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	8.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.5000e-004	1.5000e-004	0.0000	0.0000	1.6000e-004
Total	**0.0205**	**0.0000**	**8.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.5000e-004**	**1.5000e-004**	**0.0000**	**0.0000**	**1.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	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 Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-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

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 Non-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 Non-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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

RCCD Solar Plan Project - Moreno Valley

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.70	Acre	2.70	117,612.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	453.21	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Moreno Valley Utility not in the CalEEMod database. Statewide average GHG intensity factors used.

Land Use - Other non-asphalt surface area used as surrogate for solar PV array

Construction Phase - Adjusted based on applicant input

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Grading - Soils balanced on-site

Demolition - No demolition

Trips and VMT - Adjusted based on applicant input

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

On-road Fugitive Dust - Default

Architectural Coating - No coatings required

Vehicle Trips - Operational on-road vehicles modeled separately

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Construction Off-road Equipment Mitigation - Compliance with Rule 403 (water exposed area 2x per day)

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	25.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	24.00
tblConstructionPhase	NumDays	220.00	12.00
tblConstructionPhase	NumDays	220.00	38.00
tblConstructionPhase	PhaseEndDate	10/17/2023	3/14/2023
tblConstructionPhase	PhaseEndDate	12/13/2022	1/17/2023
tblConstructionPhase	PhaseEndDate	12/5/2022	1/3/2023
tblConstructionPhase	PhaseEndDate	12/13/2022	2/7/2023
tblConstructionPhase	PhaseEndDate	8/20/2024	3/30/2023
tblConstructionPhase	PhaseEndDate	6/24/2025	5/23/2023
tblConstructionPhase	PhaseStartDate	12/14/2022	2/8/2023
tblConstructionPhase	PhaseStartDate	12/6/2022	1/4/2023
tblConstructionPhase	PhaseStartDate	12/14/2022	1/18/2023
tblConstructionPhase	PhaseStartDate	10/18/2023	3/15/2023
tblConstructionPhase	PhaseStartDate	8/21/2024	3/31/2023
tblOffRoadEquipment	HorsePower	212.00	175.00
tblOffRoadEquipment	HorsePower	124.00	51.00
tblOffRoadEquipment	LoadFactor	0.40	0.40

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

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

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

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	19.00	24.00
tblTripsAndVMT	VendorTripNumber	19.00	28.00
tblTripsAndVMT	VendorTripNumber	19.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	28.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	28.00
tblTripsAndVMT	WorkerTripNumber	49.00	36.00
tblTripsAndVMT	WorkerTripNumber	49.00	36.00
tblTripsAndVMT	WorkerTripNumber	49.00	16.00

2.0 Emissions Summary

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					
2022	1.4988	16.0129	8.4134	0.0217	7.3574	0.6758	8.0332	3.4988	0.6219	4.1207	0.0000	2,119.5706	2,119.5706	0.5759	0.0280	2,142.3050
2023	1.2935	13.5386	12.9307	0.0233	7.3574	0.5470	7.9044	3.4988	0.5034	4.0021	0.0000	2,288.8366	2,288.8366	0.5752	0.0851	2,317.9439
Maximum	**1.4988**	**16.0129**	**12.9307**	**0.0233**	**7.3574**	**0.6758**	**8.0332**	**3.4988**	**0.6219**	**4.1207**	**0.0000**	**2,288.8366**	**2,288.8366**	**0.5759**	**0.0851**	**2,317.9439**

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					
2022	1.4988	16.0129	8.4134	0.0217	3.4620	0.6758	4.1377	1.6152	0.6219	2.2371	0.0000	2,119.5706	2,119.5706	0.5759	0.0280	2,142.3050
2023	1.2935	13.5386	12.9307	0.0233	3.4620	0.5470	4.0090	1.6152	0.5034	2.1185	0.0000	2,288.8366	2,288.8366	0.5752	0.0851	2,317.9439
Maximum	**1.4988**	**16.0129**	**12.9307**	**0.0233**	**3.4620**	**0.6758**	**4.1377**	**1.6152**	**0.6219**	**2.2371**	**0.0000**	**2,288.8366**	**2,288.8366**	**0.5759**	**0.0851**	**2,317.9439**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.95	0.00	48.88	53.84	0.00	46.38	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**0.0000**	**6.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**0.0000**	**6.3000e-004**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2022	1/3/2023	5	24	
2	Grading	Grading	1/4/2023	1/17/2023	5	10	
3	Boring/Conduit	Trenching	1/18/2023	2/7/2023	5	15	
4	Racking/Other Mechanical	Building Construction	2/8/2023	3/14/2023	5	25	
5	PV Panel Installation	Building Construction	3/15/2023	3/30/2023	5	12	
6	Other Electrical	Building Construction	3/31/2023	5/23/2023	5	38	

Acres of Grading (Site Preparation Phase): 24

Acres of Grading (Grading Phase): 5

Acres of Paving: 2.7

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
PV Panel Installation	Cranes	0	8.00	231	0.29
Other Electrical	Cranes	0	8.00	231	0.29
PV Panel Installation	Forklifts	0	7.00	89	0.20
Racking/Other Mechanical	Cranes	0	8.00	231	0.29
Racking/Other Mechanical	Forklifts	0	7.00	89	0.20

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

Racking/Other Mechanical	Generator Sets		0	8.00	84	0.74
Grading	Graders		1	8.00	187	0.41
Site Preparation	Graders		1	8.00	187	0.41
Other Electrical	Forklifts		0	7.00	89	0.20
PV Panel Installation	Generator Sets		0	8.00	84	0.74
Other Electrical	Generator Sets		0	8.00	84	0.74
PV Panel Installation	Tractors/Loaders/Backhoes		0	6.00	97	0.37
Grading	Rubber Tired Dozers		0	8.00	247	0.40
Site Preparation	Scrapers		0	8.00	367	0.48
Racking/Other Mechanical	Tractors/Loaders/Backhoes		0	6.00	97	0.37
Other Electrical	Tractors/Loaders/Backhoes		0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes		1	8.00	97	0.37
PV Panel Installation	Welders		0	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes		1	8.00	97	0.37
Racking/Other Mechanical	Welders		0	8.00	46	0.45
Other Electrical	Welders		0	8.00	46	0.45
Site Preparation	Rubber Tired Dozers		1	8.00	247	0.40
Grading	Rollers		1	8.00	80	0.38
Boring/Conduit	Excavators		1	8.00	158	0.38
Boring/Conduit	Rollers		1	8.00	80	0.38
Boring/Conduit	Crawler Tractors		1	8.00	175	0.43
Boring/Conduit	Rough Terrain Forklifts		1	8.00	100	0.40
Racking/Other Mechanical	Rough Terrain Forklifts		1	8.00	100	0.40
Racking/Other Mechanical	Off-Highway Tractors		1	8.00	51	0.44
Racking/Other Mechanical	Bore/Drill Rigs		1	8.00	221	0.50
PV Panel Installation	Rough Terrain Forklifts		1	8.00	100	0.40
Other Electrical	Aerial Lifts		1	8.00	63	0.31
Other Electrical	Graders		1	8.00	187	0.41
Other Electrical	Skid Steer Loaders		1	8.00	65	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
Boring/Conduit	4	28.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	28.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Racking/Other Mechanical	3	36.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
PV Panel Installation	1	36.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Other Electrical	3	16.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.4070	15.6236	7.4996	0.0182		0.6698	0.6698		0.6162	0.6162		1,759.8356	1,759.8356	0.5692		1,774.0647
Total	**1.4070**	**15.6236**	**7.4996**	**0.0182**	**7.0826**	**0.6698**	**7.7524**	**3.4247**	**0.6162**	**4.0409**		**1,759.8356**	**1,759.8356**	**0.5692**		**1,774.0647**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.3383	0.1176	1.4600e-003	0.0512	4.8800e-003	0.0561	0.0148	4.6700e-003	0.0194		154.3563	154.3563	1.6300e-003	0.0229	161.2184
Worker	0.0788	0.0511	0.7962	2.0300e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		205.3788	205.3788	5.1200e-003	5.0800e-003	207.0218
Total	**0.0918**	**0.3894**	**0.9138**	**3.4900e-003**	**0.2748**	**5.9900e-003**	**0.2808**	**0.0740**	**5.6900e-003**	**0.0797**		**359.7351**	**359.7351**	**6.7500e-003**	**0.0280**	**368.2403**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.4070	15.6236	7.4996	0.0182		0.6698	0.6698		0.6162	0.6162	0.0000	1,759.8356	1,759.8356	0.5692		1,774.0647
Total	**1.4070**	**15.6236**	**7.4996**	**0.0182**	**3.1872**	**0.6698**	**3.8570**	**1.5411**	**0.6162**	**2.1573**	**0.0000**	**1,759.8356**	**1,759.8356**	**0.5692**		**1,774.0647**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0130	0.3383	0.1176	1.4600e-003	0.0512	4.8800e-003	0.0561	0.0148	4.6700e-003	0.0194		154.3563	154.3563	1.6300e-003	0.0229	161.2184
Worker	0.0788	0.0511	0.7962	2.0300e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		205.3788	205.3788	5.1200e-003	5.0800e-003	207.0218
Total	**0.0918**	**0.3894**	**0.9138**	**3.4900e-003**	**0.2748**	**5.9900e-003**	**0.2808**	**0.0740**	**5.6900e-003**	**0.0797**		**359.7351**	**359.7351**	**6.7500e-003**	**0.0280**	**368.2403**

3.2 Site Preparation - 2023

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.2114	13.2321	6.9938	0.0182		0.5437	0.5437		0.5002	0.5002		1,759.7151	1,759.7151	0.5691		1,773.9433
Total	**1.2114**	**13.2321**	**6.9938**	**0.0182**	**7.0826**	**0.5437**	**7.6263**	**3.4247**	**0.5002**	**3.9250**		**1,759.7151**	**1,759.7151**	**0.5691**		**1,773.9433**

3.2 Site Preparation - 2023

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	9.0200e-003	0.2614	0.1076	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1800e-003	0.0169		148.2168	148.2168	1.5100e-003	0.0219	154.7814
Worker	0.0730	0.0451	0.7317	1.9700e-003	0.2236	1.0500e-003	0.2246	0.0593	9.6000e-004	0.0603		198.7481	198.7481	4.5900e-003	4.6900e-003	200.2612
Total	**0.0820**	**0.3065**	**0.8394**	**3.3700e-003**	**0.2748**	**3.3300e-003**	**0.2781**	**0.0740**	**3.1400e-003**	**0.0772**		**346.9649**	**346.9649**	**6.1000e-003**	**0.0266**	**355.0425**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.2114	13.2321	6.9938	0.0182		0.5437	0.5437		0.5002	0.5002	0.0000	1,759.7151	1,759.7151	0.5691		1,773.9433
Total	**1.2114**	**13.2321**	**6.9938**	**0.0182**	**3.1872**	**0.5437**	**3.7309**	**1.5411**	**0.5002**	**2.0414**	**0.0000**	**1,759.7151**	**1,759.7151**	**0.5691**		**1,773.9433**

3.2 Site Preparation - 2023

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	9.0200e-003	0.2614	0.1076	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1800e-003	0.0169		148.2168	148.2168	1.5100e-003	0.0219	154.7814
Worker	0.0730	0.0451	0.7317	1.9700e-003	0.2236	1.0500e-003	0.2246	0.0593	9.6000e-004	0.0603		198.7481	198.7481	4.5900e-003	4.6900e-003	200.2612
Total	**0.0820**	**0.3065**	**0.8394**	**3.3700e-003**	**0.2748**	**3.3300e-003**	**0.2781**	**0.0740**	**3.1400e-003**	**0.0772**		**346.9649**	**346.9649**	**6.1000e-003**	**0.0266**	**355.0425**

3.3 Grading - 2023

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6866	7.7785	5.7528	0.0123		0.3140	0.3140		0.2889	0.2889		1,193.3295	1,193.3295	0.3860		1,202.9782
Total	**0.6866**	**7.7785**	**5.7528**	**0.0123**	**0.5303**	**0.3140**	**0.8443**	**0.0573**	**0.2889**	**0.3462**		**1,193.3295**	**1,193.3295**	**0.3860**		**1,202.9782**

3.3 Grading - 2023

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	9.0200e-003	0.2614	0.1076	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1800e-003	0.0169		148.2168	148.2168	1.5100e-003	0.0219	154.7814
Worker	0.1022	0.0632	1.0244	2.7500e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		278.2473	278.2473	6.4300e-003	6.5700e-003	280.3656
Total	**0.1113**	**0.3245**	**1.1321**	**4.1500e-003**	**0.3642**	**3.7400e-003**	**0.3680**	**0.0978**	**3.5300e-003**	**0.1013**		**426.4641**	**426.4641**	**7.9400e-003**	**0.0285**	**435.1470**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.6866	7.7785	5.7528	0.0123		0.3140	0.3140		0.2889	0.2889	0.0000	1,193.3295	1,193.3295	0.3860		1,202.9782
Total	**0.6866**	**7.7785**	**5.7528**	**0.0123**	**0.2386**	**0.3140**	**0.5527**	**0.0258**	**0.2889**	**0.3147**	**0.0000**	**1,193.3295**	**1,193.3295**	**0.3860**		**1,202.9782**

3.3 Grading - 2023

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	9.0200e-003	0.2614	0.1076	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1800e-003	0.0169		148.2168	148.2168	1.5100e-003	0.0219	154.7814
Worker	0.1022	0.0632	1.0244	2.7500e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		278.2473	278.2473	6.4300e-003	6.5700e-003	280.3656
Total	**0.1113**	**0.3245**	**1.1321**	**4.1500e-003**	**0.3642**	**3.7400e-003**	**0.3680**	**0.0978**	**3.5300e-003**	**0.1013**		**426.4641**	**426.4641**	**7.9400e-003**	**0.0285**	**435.1470**

3.4 Boring/Conduit - 2023

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	0.9088	8.9777	11.6911	0.0177		0.4551	0.4551		0.4187	0.4187		1,714.1557	1,714.1557	0.5544		1,728.0155
Total	**0.9088**	**8.9777**	**11.6911**	**0.0177**		**0.4551**	**0.4551**		**0.4187**	**0.4187**		**1,714.1557**	**1,714.1557**	**0.5544**		**1,728.0155**

3.4 Boring/Conduit - 2023

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	0.0180	0.5227	0.2152	2.8000e-003	0.1025	4.5500e-003	0.1070	0.0295	4.3600e-003	0.0339		296.4336	296.4336	3.0200e-003	0.0438	309.5628
Worker	0.1022	0.0632	1.0244	2.7500e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		278.2473	278.2473	6.4300e-003	6.5700e-003	280.3656
Total	**0.1203**	**0.5859**	**1.2397**	**5.5500e-003**	**0.4155**	**6.0100e-003**	**0.4215**	**0.1125**	**5.7100e-003**	**0.1182**		**574.6809**	**574.6809**	**9.4500e-003**	**0.0504**	**589.9284**

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	0.9088	8.9777	11.6911	0.0177		0.4551	0.4551		0.4187	0.4187	0.0000	1,714.1557	1,714.1557	0.5544		1,728.0155
Total	**0.9088**	**8.9777**	**11.6911**	**0.0177**		**0.4551**	**0.4551**		**0.4187**	**0.4187**	**0.0000**	**1,714.1557**	**1,714.1557**	**0.5544**		**1,728.0155**

3.4 Boring/Conduit - 2023

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	0.0180	0.5227	0.2152	2.8000e-003	0.1025	4.5500e-003	0.1070	0.0295	4.3600e-003	0.0339		296.4336	296.4336	3.0200e-003	0.0438	309.5628
Worker	0.1022	0.0632	1.0244	2.7500e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		278.2473	278.2473	6.4300e-003	6.5700e-003	280.3656
Total	**0.1203**	**0.5859**	**1.2397**	**5.5500e-003**	**0.4155**	**6.0100e-003**	**0.4215**	**0.1125**	**5.7100e-003**	**0.1182**		**574.6809**	**574.6809**	**9.4500e-003**	**0.0504**	**589.9284**

3.5 Racking/Other Mechanical - 2023

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	0.4461	4.6640	5.7792	0.0149		0.1850	0.1850		0.1702	0.1702		1,437.6295	1,437.6295	0.4650		1,449.2535
Total	**0.4461**	**4.6640**	**5.7792**	**0.0149**		**0.1850**	**0.1850**		**0.1702**	**0.1702**		**1,437.6295**	**1,437.6295**	**0.4650**		**1,449.2535**

3.5 Racking/Other Mechanical - 2023

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	0.0271	0.7841	0.3229	4.1900e-003	0.1537	6.8300e-003	0.1606	0.0443	6.5300e-003	0.0508		444.6504	444.6504	4.5300e-003	0.0657	464.3442
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1585**	**0.8653**	**1.6400**	**7.7300e-003**	**0.5561**	**8.7100e-003**	**0.5648**	**0.1510**	**8.2600e-003**	**0.1592**		**802.3969**	**802.3969**	**0.0128**	**0.0742**	**824.8142**

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	0.4461	4.6640	5.7792	0.0149		0.1850	0.1850		0.1702	0.1702	0.0000	1,437.6295	1,437.6295	0.4650		1,449.2535
Total	**0.4461**	**4.6640**	**5.7792**	**0.0149**		**0.1850**	**0.1850**		**0.1702**	**0.1702**	**0.0000**	**1,437.6295**	**1,437.6295**	**0.4650**		**1,449.2535**

3.5 Racking/Other Mechanical - 2023

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	0.0271	0.7841	0.3229	4.1900e-003	0.1537	6.8300e-003	0.1606	0.0443	6.5300e-003	0.0508		444.6504	444.6504	4.5300e-003	0.0657	464.3442
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1585**	**0.8653**	**1.6400**	**7.7300e-003**	**0.5561**	**8.7100e-003**	**0.5648**	**0.1510**	**8.2600e-003**	**0.1592**		**802.3969**	**802.3969**	**0.0128**	**0.0742**	**824.8142**

3.6 PV Panel Installation - 2023

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416		335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**		**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0316	0.9148	0.3767	4.8900e-003	0.1793	7.9700e-003	0.1873	0.0516	7.6200e-003	0.0593		518.7588	518.7588	5.2900e-003	0.0767	541.7348
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1630**	**0.9960**	**1.6938**	**8.4300e-003**	**0.5817**	**9.8500e-003**	**0.5916**	**0.1584**	**9.3500e-003**	**0.1677**		**876.5053**	**876.5053**	**0.0136**	**0.0851**	**902.2049**

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416	0.0000	335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**	**0.0000**	**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0316	0.9148	0.3767	4.8900e-003	0.1793	7.9700e-003	0.1873	0.0516	7.6200e-003	0.0593		518.7588	518.7588	5.2900e-003	0.0767	541.7348
Worker	0.1314	0.0812	1.3171	3.5400e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		357.7465	357.7465	8.2700e-003	8.4500e-003	360.4701
Total	**0.1630**	**0.9960**	**1.6938**	**8.4300e-003**	**0.5817**	**9.8500e-003**	**0.5916**	**0.1584**	**9.3500e-003**	**0.1677**		**876.5053**	**876.5053**	**0.0136**	**0.0851**	**902.2049**

3.7 Other Electrical - 2023

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735		1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**		**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.5100e-003	0.1307	0.0538	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.1084	74.1084	7.6000e-004	0.0110	77.3907
Worker	0.0584	0.0361	0.5854	1.5700e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		158.9985	158.9985	3.6800e-003	3.7500e-003	160.2089
Total	**0.0629**	**0.1668**	**0.6392**	**2.2700e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**233.1069**	**233.1069**	**4.4400e-003**	**0.0147**	**237.5996**

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735	0.0000	1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**	**0.0000**	**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.5100e-003	0.1307	0.0538	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.1084	74.1084	7.6000e-004	0.0110	77.3907
Worker	0.0584	0.0361	0.5854	1.5700e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		158.9985	158.9985	3.6800e-003	3.7500e-003	160.2089
Total	**0.0629**	**0.1668**	**0.6392**	**2.2700e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**233.1069**	**233.1069**	**4.4400e-003**	**0.0147**	**237.5996**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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 Non-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**

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 Non-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	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Unmitigated	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-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	lb/day										lb/day					
Architectural Coating	8.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0417					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**		**6.3000e-004**

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	8.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0417					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**		**6.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

RCCD Solar Plan Project - Moreno Valley

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.70	Acre	2.70	117,612.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	453.21	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Moreno Valley Utility not in the CalEEMod database. Statewide average GHG intensity factors used.

Land Use - Other non-asphalt surface area used as surrogate for solar PV array

Construction Phase - Adjusted based on applicant input

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Grading - Soils balanced on-site

Demolition - No demolition

Trips and VMT - Adjusted based on applicant input

On-road Fugitive Dust - Default

Architectural Coating - No coatings required

Vehicle Trips - Operational on-road vehicles modeled separately

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Construction Off-road Equipment Mitigation - Compliance with Rule 403 (water exposed area 2x per day)

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	25.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	24.00
tblConstructionPhase	NumDays	220.00	12.00
tblConstructionPhase	NumDays	220.00	38.00
tblConstructionPhase	PhaseEndDate	10/17/2023	3/14/2023
tblConstructionPhase	PhaseEndDate	12/13/2022	1/17/2023
tblConstructionPhase	PhaseEndDate	12/5/2022	1/3/2023
tblConstructionPhase	PhaseEndDate	12/13/2022	2/7/2023
tblConstructionPhase	PhaseEndDate	8/20/2024	3/30/2023
tblConstructionPhase	PhaseEndDate	6/24/2025	5/23/2023
tblConstructionPhase	PhaseStartDate	12/14/2022	2/8/2023
tblConstructionPhase	PhaseStartDate	12/6/2022	1/4/2023
tblConstructionPhase	PhaseStartDate	12/14/2022	1/18/2023
tblConstructionPhase	PhaseStartDate	10/18/2023	3/15/2023
tblConstructionPhase	PhaseStartDate	8/21/2024	3/31/2023
tblOffRoadEquipment	HorsePower	212.00	175.00
tblOffRoadEquipment	HorsePower	124.00	51.00
tblOffRoadEquipment	LoadFactor	0.40	0.40

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	19.00	24.00
tblTripsAndVMT	VendorTripNumber	19.00	28.00
tblTripsAndVMT	VendorTripNumber	19.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	28.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	28.00
tblTripsAndVMT	WorkerTripNumber	49.00	36.00
tblTripsAndVMT	WorkerTripNumber	49.00	36.00
tblTripsAndVMT	WorkerTripNumber	49.00	16.00

2.0 Emissions Summary

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					
2022	1.4930	16.0330	8.2670	0.0215	7.3574	0.6758	8.0332	3.4988	0.6219	4.1207	0.0000	2,100.3917	2,100.3917	0.5759	0.0281	2,123.1733
2023	1.2882	13.5561	12.7454	0.0230	7.3574	0.5471	7.9044	3.4988	0.5034	4.0022	0.0000	2,263.4436	2,263.4436	0.5752	0.0856	2,292.6382
Maximum	**1.4930**	**16.0330**	**12.7454**	**0.0230**	**7.3574**	**0.6758**	**8.0332**	**3.4988**	**0.6219**	**4.1207**	**0.0000**	**2,263.4436**	**2,263.4436**	**0.5759**	**0.0856**	**2,292.6382**

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					
2022	1.4930	16.0330	8.2670	0.0215	3.4620	0.6758	4.1378	1.6152	0.6219	2.2371	0.0000	2,100.3917	2,100.3917	0.5759	0.0281	2,123.1733
2023	1.2882	13.5561	12.7454	0.0230	3.4620	0.5471	4.0090	1.6152	0.5034	2.1185	0.0000	2,263.4436	2,263.4436	0.5752	0.0856	2,292.6382
Maximum	**1.4930**	**16.0330**	**12.7454**	**0.0230**	**3.4620**	**0.6758**	**4.1378**	**1.6152**	**0.6219**	**2.2371**	**0.0000**	**2,263.4436**	**2,263.4436**	**0.5759**	**0.0856**	**2,292.6382**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.95	0.00	48.88	53.84	0.00	46.38	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**0.0000**	**6.3000e-004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**0.0000**	**6.3000e-004**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	12/1/2022	1/3/2023	5	24	
2	Grading	Grading	1/4/2023	1/17/2023	5	10	
3	Boring/Conduit	Trenching	1/18/2023	2/7/2023	5	15	
4	Racking/Other Mechanical	Building Construction	2/8/2023	3/14/2023	5	25	
5	PV Panel Installation	Building Construction	3/15/2023	3/30/2023	5	12	
6	Other Electrical	Building Construction	3/31/2023	5/23/2023	5	38	

Acres of Grading (Site Preparation Phase): 24

Acres of Grading (Grading Phase): 5

Acres of Paving: 2.7

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
PV Panel Installation	Cranes	0	8.00	231	0.29
Other Electrical	Cranes	0	8.00	231	0.29
PV Panel Installation	Forklifts	0	7.00	89	0.20
Racking/Other Mechanical	Cranes	0	8.00	231	0.29
Racking/Other Mechanical	Forklifts	0	7.00	89	0.20

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

Racking/Other Mechanical	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Other Electrical	Forklifts	0	7.00	89	0.20
PV Panel Installation	Generator Sets	0	8.00	84	0.74
Other Electrical	Generator Sets	0	8.00	84	0.74
PV Panel Installation	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Racking/Other Mechanical	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Other Electrical	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
PV Panel Installation	Welders	0	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Racking/Other Mechanical	Welders	0	8.00	46	0.45
Other Electrical	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rollers	1	8.00	80	0.38
Boring/Conduit	Excavators	1	8.00	158	0.38
Boring/Conduit	Rollers	1	8.00	80	0.38
Boring/Conduit	Crawler Tractors	1	8.00	175	0.43
Boring/Conduit	Rough Terrain Forklifts	1	8.00	100	0.40
Racking/Other Mechanical	Rough Terrain Forklifts	1	8.00	100	0.40
Racking/Other Mechanical	Off-Highway Tractors	1	8.00	51	0.44
Racking/Other Mechanical	Bore/Drill Rigs	1	8.00	221	0.50
PV Panel Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Other Electrical	Aerial Lifts	1	8.00	63	0.31
Other Electrical	Graders	1	8.00	187	0.41
Other Electrical	Skid Steer Loaders	1	8.00	65	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
Boring/Conduit	4	28.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	28.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Racking/Other Mechanical	3	36.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
PV Panel Installation	1	36.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Other Electrical	3	16.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.4070	15.6236	7.4996	0.0182		0.6698	0.6698		0.6162	0.6162		1,759.835 6	1,759.835 6	0.5692		1,774.064 7
Total	**1.4070**	**15.6236**	**7.4996**	**0.0182**	**7.0826**	**0.6698**	**7.7524**	**3.4247**	**0.6162**	**4.0409**		**1,759.835 6**	**1,759.835 6**	**0.5692**		**1,774.064 7**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.3564	0.1221	1.4600e-003	0.0512	4.8900e-003	0.0561	0.0148	4.6800e-003	0.0194		154.5246	154.5246	1.6100e-003	0.0229	161.3990
Worker	0.0736	0.0530	0.6453	1.8400e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		186.0315	186.0315	5.0800e-003	5.2000e-003	187.7096
Total	**0.0861**	**0.4094**	**0.7674**	**3.3000e-003**	**0.2748**	**6.0000e-003**	**0.2808**	**0.0740**	**5.7000e-003**	**0.0797**		**340.5561**	**340.5561**	**6.6900e-003**	**0.0281**	**349.1086**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.4070	15.6236	7.4996	0.0182		0.6698	0.6698		0.6162	0.6162	0.0000	1,759.8356	1,759.8356	0.5692		1,774.0647
Total	**1.4070**	**15.6236**	**7.4996**	**0.0182**	**3.1872**	**0.6698**	**3.8570**	**1.5411**	**0.6162**	**2.1573**	**0.0000**	**1,759.8356**	**1,759.8356**	**0.5692**		**1,774.0647**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0125	0.3564	0.1221	1.4600e-003	0.0512	4.8900e-003	0.0561	0.0148	4.6800e-003	0.0194		154.5246	154.5246	1.6100e-003	0.0229	161.3990
Worker	0.0736	0.0530	0.6453	1.8400e-003	0.2236	1.1100e-003	0.2247	0.0593	1.0200e-003	0.0603		186.0315	186.0315	5.0800e-003	5.2000e-003	187.7096
Total	**0.0861**	**0.4094**	**0.7674**	**3.3000e-003**	**0.2748**	**6.0000e-003**	**0.2808**	**0.0740**	**5.7000e-003**	**0.0797**		**340.5561**	**340.5561**	**6.6900e-003**	**0.0281**	**349.1086**

3.2 Site Preparation - 2023

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					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.2114	13.2321	6.9938	0.0182		0.5437	0.5437		0.5002	0.5002		1,759.7151	1,759.7151	0.5691		1,773.9433
Total	**1.2114**	**13.2321**	**6.9938**	**0.0182**	**7.0826**	**0.5437**	**7.6263**	**3.4247**	**0.5002**	**3.9250**		**1,759.7151**	**1,759.7151**	**0.5691**		**1,773.9433**

3.2 Site Preparation - 2023

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	8.3500e-003	0.2772	0.1112	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1900e-003	0.0169		148.5846	148.5846	1.4800e-003	0.0220	155.1702
Worker	0.0684	0.0468	0.5942	1.7800e-003	0.2236	1.0500e-003	0.2246	0.0593	9.6000e-004	0.0603		180.0847	180.0847	4.5800e-003	4.8000e-003	181.6302
Total	**0.0768**	**0.3240**	**0.7054**	**3.1800e-003**	**0.2748**	**3.3300e-003**	**0.2781**	**0.0740**	**3.1500e-003**	**0.0772**		**328.6693**	**328.6693**	**6.0600e-003**	**0.0268**	**336.8004**

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					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.2114	13.2321	6.9938	0.0182		0.5437	0.5437		0.5002	0.5002	0.0000	1,759.7151	1,759.7151	0.5691		1,773.9433
Total	**1.2114**	**13.2321**	**6.9938**	**0.0182**	**3.1872**	**0.5437**	**3.7309**	**1.5411**	**0.5002**	**2.0414**	**0.0000**	**1,759.7151**	**1,759.7151**	**0.5691**		**1,773.9433**

3.2 Site Preparation - 2023

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	8.3500e-003	0.2772	0.1112	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1900e-003	0.0169		148.5846	148.5846	1.4800e-003	0.0220	155.1702
Worker	0.0684	0.0468	0.5942	1.7800e-003	0.2236	1.0500e-003	0.2246	0.0593	9.6000e-004	0.0603		180.0847	180.0847	4.5800e-003	4.8000e-003	181.6302
Total	**0.0768**	**0.3240**	**0.7054**	**3.1800e-003**	**0.2748**	**3.3300e-003**	**0.2781**	**0.0740**	**3.1500e-003**	**0.0772**		**328.6693**	**328.6693**	**6.0600e-003**	**0.0268**	**336.8004**

3.3 Grading - 2023

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6866	7.7785	5.7528	0.0123		0.3140	0.3140		0.2889	0.2889		1,193.329 5	1,193.329 5	0.3860		1,202.978 2
Total	**0.6866**	**7.7785**	**5.7528**	**0.0123**	**0.5303**	**0.3140**	**0.8443**	**0.0573**	**0.2889**	**0.3462**		**1,193.329 5**	**1,193.329 5**	**0.3860**		**1,202.978 2**

3.3 Grading - 2023

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	8.3500e-003	0.2772	0.1112	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1900e-003	0.0169		148.5846	148.5846	1.4800e-003	0.0220	155.1702
Worker	0.0958	0.0655	0.8319	2.4900e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		252.1186	252.1186	6.4100e-003	6.7200e-003	254.2823
Total	**0.1042**	**0.3427**	**0.9431**	**3.8900e-003**	**0.3642**	**3.7400e-003**	**0.3680**	**0.0978**	**3.5400e-003**	**0.1013**		**400.7032**	**400.7032**	**7.8900e-003**	**0.0287**	**409.4525**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.6866	7.7785	5.7528	0.0123		0.3140	0.3140		0.2889	0.2889	0.0000	1,193.3295	1,193.3295	0.3860		1,202.9782
Total	**0.6866**	**7.7785**	**5.7528**	**0.0123**	**0.2386**	**0.3140**	**0.5527**	**0.0258**	**0.2889**	**0.3147**	**0.0000**	**1,193.3295**	**1,193.3295**	**0.3860**		**1,202.9782**

3.3 Grading - 2023

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	8.3500e-003	0.2772	0.1112	1.4000e-003	0.0512	2.2800e-003	0.0535	0.0148	2.1900e-003	0.0169		148.5846	148.5846	1.4800e-003	0.0220	155.1702
Worker	0.0958	0.0655	0.8319	2.4900e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		252.1186	252.1186	6.4100e-003	6.7200e-003	254.2823
Total	**0.1042**	**0.3427**	**0.9431**	**3.8900e-003**	**0.3642**	**3.7400e-003**	**0.3680**	**0.0978**	**3.5400e-003**	**0.1013**		**400.7032**	**400.7032**	**7.8900e-003**	**0.0287**	**409.4525**

3.4 Boring/Conduit - 2023

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	0.9088	8.9777	11.6911	0.0177		0.4551	0.4551		0.4187	0.4187		1,714.1557	1,714.1557	0.5544		1,728.0155
Total	**0.9088**	**8.9777**	**11.6911**	**0.0177**		**0.4551**	**0.4551**		**0.4187**	**0.4187**		**1,714.1557**	**1,714.1557**	**0.5544**		**1,728.0155**

3.4 Boring/Conduit - 2023

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	0.0167	0.5544	0.2225	2.8000e-003	0.1025	4.5700e-003	0.1071	0.0295	4.3700e-003	0.0339		297.1693	297.1693	2.9600e-003	0.0440	310.3404
Worker	0.0958	0.0655	0.8319	2.4900e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		252.1186	252.1186	6.4100e-003	6.7200e-003	254.2823
Total	**0.1125**	**0.6199**	**1.0543**	**5.2900e-003**	**0.4155**	**6.0300e-003**	**0.4215**	**0.1125**	**5.7200e-003**	**0.1182**		**549.2878**	**549.2878**	**9.3700e-003**	**0.0507**	**564.6227**

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	0.9088	8.9777	11.6911	0.0177		0.4551	0.4551		0.4187	0.4187	0.0000	1,714.1557	1,714.1557	0.5544		1,728.0155
Total	**0.9088**	**8.9777**	**11.6911**	**0.0177**		**0.4551**	**0.4551**		**0.4187**	**0.4187**	**0.0000**	**1,714.1557**	**1,714.1557**	**0.5544**		**1,728.0155**

3.4 Boring/Conduit - 2023

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	0.0167	0.5544	0.2225	2.8000e-003	0.1025	4.5700e-003	0.1071	0.0295	4.3700e-003	0.0339		297.1693	297.1693	2.9600e-003	0.0440	310.3404
Worker	0.0958	0.0655	0.8319	2.4900e-003	0.3130	1.4600e-003	0.3144	0.0830	1.3500e-003	0.0844		252.1186	252.1186	6.4100e-003	6.7200e-003	254.2823
Total	**0.1125**	**0.6199**	**1.0543**	**5.2900e-003**	**0.4155**	**6.0300e-003**	**0.4215**	**0.1125**	**5.7200e-003**	**0.1182**		**549.2878**	**549.2878**	**9.3700e-003**	**0.0507**	**564.6227**

3.5 Racking/Other Mechanical - 2023

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	0.4461	4.6640	5.7792	0.0149		0.1850	0.1850		0.1702	0.1702		1,437.6295	1,437.6295	0.4650		1,449.2535
Total	**0.4461**	**4.6640**	**5.7792**	**0.0149**		**0.1850**	**0.1850**		**0.1702**	**0.1702**		**1,437.6295**	**1,437.6295**	**0.4650**		**1,449.2535**

3.5 Racking/Other Mechanical - 2023

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	0.0251	0.8316	0.3337	4.2000e-003	0.1537	6.8500e-003	0.1606	0.0443	6.5600e-003	0.0508		445.7539	445.7539	4.4400e-003	0.0659	465.5106
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1483**	**0.9158**	**1.4033**	**7.4100e-003**	**0.5561**	**8.7300e-003**	**0.5649**	**0.1510**	**8.2900e-003**	**0.1593**		**769.9064**	**769.9064**	**0.0127**	**0.0746**	**792.4450**

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	0.4461	4.6640	5.7792	0.0149		0.1850	0.1850		0.1702	0.1702	0.0000	1,437.6295	1,437.6295	0.4650		1,449.2535
Total	**0.4461**	**4.6640**	**5.7792**	**0.0149**		**0.1850**	**0.1850**		**0.1702**	**0.1702**	**0.0000**	**1,437.6295**	**1,437.6295**	**0.4650**		**1,449.2535**

3.5 Racking/Other Mechanical - 2023

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	0.0251	0.8316	0.3337	4.2000e-003	0.1537	6.8500e-003	0.1606	0.0443	6.5600e-003	0.0508		445.7539	445.7539	4.4400e-003	0.0659	465.5106
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1483**	**0.9158**	**1.4033**	**7.4100e-003**	**0.5561**	**8.7300e-003**	**0.5649**	**0.1510**	**8.2900e-003**	**0.1593**		**769.9064**	**769.9064**	**0.0127**	**0.0746**	**792.4450**

3.6 PV Panel Installation - 2023

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416		335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**		**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0292	0.9701	0.3893	4.9000e-003	0.1793	8.0000e-003	0.1873	0.0516	7.6500e-003	0.0593		520.0462	520.0462	5.1900e-003	0.0769	543.0957
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1524**	**1.0544**	**1.4589**	**8.1100e-003**	**0.5817**	**9.8800e-003**	**0.5916**	**0.1584**	**9.3800e-003**	**0.1677**		**844.1987**	**844.1987**	**0.0134**	**0.0856**	**870.0301**

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	0.1063	1.4064	2.2987	3.4700e-003		0.0452	0.0452		0.0416	0.0416	0.0000	335.4725	335.4725	0.1085		338.1849
Total	**0.1063**	**1.4064**	**2.2987**	**3.4700e-003**		**0.0452**	**0.0452**		**0.0416**	**0.0416**	**0.0000**	**335.4725**	**335.4725**	**0.1085**		**338.1849**

3.6 PV Panel Installation - 2023

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	0.0292	0.9701	0.3893	4.9000e-003	0.1793	8.0000e-003	0.1873	0.0516	7.6500e-003	0.0593		520.0462	520.0462	5.1900e-003	0.0769	543.0957
Worker	0.1232	0.0843	1.0695	3.2100e-003	0.4024	1.8800e-003	0.4043	0.1067	1.7300e-003	0.1085		324.1524	324.1524	8.2400e-003	8.6400e-003	326.9343
Total	**0.1524**	**1.0544**	**1.4589**	**8.1100e-003**	**0.5817**	**9.8800e-003**	**0.5916**	**0.1584**	**9.3800e-003**	**0.1677**		**844.1987**	**844.1987**	**0.0134**	**0.0856**	**870.0301**

3.7 Other Electrical - 2023

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735		1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**		**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.1800e-003	0.1386	0.0556	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.2923	74.2923	7.4000e-004	0.0110	77.5851
Worker	0.0548	0.0375	0.4754	1.4300e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		144.0678	144.0678	3.6600e-003	3.8400e-003	145.3041
Total	**0.0589**	**0.1760**	**0.5310**	**2.1300e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**218.3601**	**218.3601**	**4.4000e-003**	**0.0148**	**222.8893**

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	0.4815	6.0296	4.1527	0.0103		0.1886	0.1886		0.1735	0.1735	0.0000	1,000.1722	1,000.1722	0.3235		1,008.2591
Total	**0.4815**	**6.0296**	**4.1527**	**0.0103**		**0.1886**	**0.1886**		**0.1735**	**0.1735**	**0.0000**	**1,000.1722**	**1,000.1722**	**0.3235**		**1,008.2591**

3.7 Other Electrical - 2023

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	4.1800e-003	0.1386	0.0556	7.0000e-004	0.0256	1.1400e-003	0.0268	7.3800e-003	1.0900e-003	8.4700e-003		74.2923	74.2923	7.4000e-004	0.0110	77.5851
Worker	0.0548	0.0375	0.4754	1.4300e-003	0.1788	8.4000e-004	0.1797	0.0474	7.7000e-004	0.0482		144.0678	144.0678	3.6600e-003	3.8400e-003	145.3041
Total	**0.0589**	**0.1760**	**0.5310**	**2.1300e-003**	**0.2045**	**1.9800e-003**	**0.2064**	**0.0548**	**1.8600e-003**	**0.0567**		**218.3601**	**218.3601**	**4.4000e-003**	**0.0148**	**222.8893**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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 Non-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**

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 Non-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	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Unmitigated	0.0507	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-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	lb/day										lb/day					
Architectural Coating	8.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0417					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**		**6.3000e-004**

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	8.9600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0417					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.0000e-005	0.0000	2.8000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		5.9000e-004	5.9000e-004	0.0000		6.3000e-004
Total	**0.0507**	**0.0000**	**2.8000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**5.9000e-004**	**5.9000e-004**	**0.0000**		**6.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

RCCD Solar Plan Project - Moreno Valley

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	2.70	Acre	2.70	117,612.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	453.21	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Moreno Valley Utility not in the CalEEMod database. Statewide average GHG intensity factors used.

Land Use - Other non-asphalt surface area used as surrogate for solar PV array

Construction Phase - Adjusted based on applicant input

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - Adjusted equipment based on applicant info

Grading - Soils balanced on-site

Demolition - No demolition

Trips and VMT - Adjusted based on applicant input

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

On-road Fugitive Dust - Default

Architectural Coating - No coatings required

Vehicle Trips - Operational on-road vehicles modeled separately

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Construction Off-road Equipment Mitigation - Compliance with Rule 403 (water exposed area 2x per day)

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	25.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	NumDays	3.00	24.00
tblConstructionPhase	NumDays	220.00	12.00
tblConstructionPhase	NumDays	220.00	38.00
tblConstructionPhase	PhaseEndDate	10/17/2023	3/14/2023
tblConstructionPhase	PhaseEndDate	12/13/2022	1/17/2023
tblConstructionPhase	PhaseEndDate	12/5/2022	1/3/2023
tblConstructionPhase	PhaseEndDate	12/13/2022	2/7/2023
tblConstructionPhase	PhaseEndDate	8/20/2024	3/30/2023
tblConstructionPhase	PhaseEndDate	6/24/2025	5/23/2023
tblConstructionPhase	PhaseStartDate	12/14/2022	2/8/2023
tblConstructionPhase	PhaseStartDate	12/6/2022	1/4/2023
tblConstructionPhase	PhaseStartDate	12/14/2022	1/18/2023
tblConstructionPhase	PhaseStartDate	10/18/2023	3/15/2023
tblConstructionPhase	PhaseStartDate	8/21/2024	3/31/2023
tblOffRoadEquipment	HorsePower	212.00	175.00
tblOffRoadEquipment	HorsePower	124.00	51.00
tblOffRoadEquipment	LoadFactor	0.40	0.40

tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Crawler Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	19.00	24.00
tblTripsAndVMT	VendorTripNumber	19.00	28.00
tblTripsAndVMT	VendorTripNumber	19.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	28.00
tblTripsAndVMT	WorkerTripNumber	8.00	20.00
tblTripsAndVMT	WorkerTripNumber	8.00	28.00
tblTripsAndVMT	WorkerTripNumber	49.00	36.00
tblTripsAndVMT	WorkerTripNumber	49.00	36.00
tblTripsAndVMT	WorkerTripNumber	49.00	16.00

2.0 Emissions Summary

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					
2022	0.0164	0.1764	0.0913	2.4000e-004	0.0819	7.4300e-003	0.0894	0.0386	6.8400e-003	0.0454	0.0000	21.0023	21.0023	5.7500e-003	2.8000e-004	21.2299
2023	0.0319	0.3284	0.3401	8.6000e-004	0.0406	0.0120	0.0526	0.0102	0.0110	0.0212	0.0000	77.2200	77.2200	0.0179	2.0700e-003	78.2834
Maximum	**0.0319**	**0.3284**	**0.3401**	**8.6000e-004**	**0.0819**	**0.0120**	**0.0894**	**0.0386**	**0.0110**	**0.0454**	**0.0000**	**77.2200**	**77.2200**	**0.0179**	**2.0700e-003**	**78.2834**

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					
2022	0.0164	0.1764	0.0913	2.4000e-004	0.0385	7.4300e-003	0.0459	0.0178	6.8400e-003	0.0247	0.0000	21.0022	21.0022	5.7500e-003	2.8000e-004	21.2298
2023	0.0319	0.3284	0.3401	8.6000e-004	0.0289	0.0120	0.0408	7.4500e-003	0.0110	0.0185	0.0000	77.2199	77.2199	0.0179	2.0700e-003	78.2833
Maximum	**0.0319**	**0.3284**	**0.3401**	**8.6000e-004**	**0.0385**	**0.0120**	**0.0459**	**0.0178**	**0.0110**	**0.0247**	**0.0000**	**77.2199**	**77.2199**	**0.0179**	**2.0700e-003**	**78.2833**

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**45.04**	**0.00**	**38.89**	**48.21**	**0.00**	**35.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-1-2022**	**2-28-2023**	0.3805	0.3805
2	**3-1-2023**	**5-31-2023**	0.1764	0.1764
		Highest	0.3805	0.3805

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	9.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
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	**9.2400e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

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	9.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
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	**9.2400e-003**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

	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	12/1/2022	1/3/2023	5	24	
2	Grading	Grading	1/4/2023	1/17/2023	5	10	
3	Boring/Conduit	Trenching	1/18/2023	2/7/2023	5	15	

4	Racking/Other Mechanical	Building Construction	2/8/2023	3/14/2023	5	25	
5	PV Panel Installation	Building Construction	3/15/2023	3/30/2023	5	12	
6	Other Electrical	Building Construction	3/31/2023	5/23/2023	5	38	

Acres of Grading (Site Preparation Phase): 24

Acres of Grading (Grading Phase): 5

Acres of Paving: 2.7

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

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
PV Panel Installation	Cranes	0	8.00	231	0.29
Other Electrical	Cranes	0	8.00	231	0.29
PV Panel Installation	Forklifts	0	7.00	89	0.20
Racking/Other Mechanical	Cranes	0	8.00	231	0.29
Racking/Other Mechanical	Forklifts	0	7.00	89	0.20
Racking/Other Mechanical	Generator Sets	0	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Other Electrical	Forklifts	0	7.00	89	0.20
PV Panel Installation	Generator Sets	0	8.00	84	0.74
Other Electrical	Generator Sets	0	8.00	84	0.74
PV Panel Installation	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Racking/Other Mechanical	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Other Electrical	Tractors/Loaders/Backhoes	0	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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

PV Panel Installation	Welders	0	8.00	46	0.45
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Racking/Other Mechanical	Welders	0	8.00	46	0.45
Other Electrical	Welders	0	8.00	46	0.45
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rollers	1	8.00	80	0.38
Boring/Conduit	Excavators	1	8.00	158	0.38
Boring/Conduit	Rollers	1	8.00	80	0.38
Boring/Conduit	Crawler Tractors	1	8.00	175	0.43
Boring/Conduit	Rough Terrain Forklifts	1	8.00	100	0.40
Racking/Other Mechanical	Rough Terrain Forklifts	1	8.00	100	0.40
Racking/Other Mechanical	Off-Highway Tractors	1	8.00	51	0.44
Racking/Other Mechanical	Bore/Drill Rigs	1	8.00	221	0.50
PV Panel Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Other Electrical	Aerial Lifts	1	8.00	63	0.31
Other Electrical	Graders	1	8.00	187	0.41
Other Electrical	Skid Steer Loaders	1	8.00	65	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
Boring/Conduit	4	28.00	16.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	20.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	28.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Racking/Other Mechanical	3	36.00	24.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
PV Panel Installation	1	36.00	28.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Other Electrical	3	16.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0790	0.0000	0.0790	0.0378	0.0000	0.0378	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1719	0.0825	2.0000e-004		7.3700e-003	7.3700e-003		6.7800e-003	6.7800e-003	0.0000	17.5615	17.5615	5.6800e-003	0.0000	17.7035
Total	**0.0155**	**0.1719**	**0.0825**	**2.0000e-004**	**0.0790**	**7.3700e-003**	**0.0863**	**0.0378**	**6.7800e-003**	**0.0446**	**0.0000**	**17.5615**	**17.5615**	**5.6800e-003**	**0.0000**	**17.7035**

3.2 Site Preparation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.4000e-004	3.9100e-003	1.3200e-003	2.0000e-005	5.6000e-004	5.0000e-005	6.1000e-004	1.6000e-004	5.0000e-005	2.1000e-004	0.0000	1.5410	1.5410	2.0000e-005	2.3000e-004	1.6096
Worker	7.7000e-004	6.0000e-004	7.4800e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4300e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.8998	1.8998	5.0000e-005	5.0000e-005	1.9168
Total	**9.1000e-004**	**4.5100e-003**	**8.8000e-003**	**4.0000e-005**	**2.9800e-003**	**6.0000e-005**	**3.0400e-003**	**8.0000e-004**	**6.0000e-005**	**8.6000e-004**	**0.0000**	**3.4408**	**3.4408**	**7.0000e-005**	**2.8000e-004**	**3.5264**

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					0.0355	0.0000	0.0355	0.0170	0.0000	0.0170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1719	0.0825	2.0000e-004		7.3700e-003	7.3700e-003		6.7800e-003	6.7800e-003	0.0000	17.5614	17.5614	5.6800e-003	0.0000	17.7034
Total	**0.0155**	**0.1719**	**0.0825**	**2.0000e-004**	**0.0355**	**7.3700e-003**	**0.0429**	**0.0170**	**6.7800e-003**	**0.0238**	**0.0000**	**17.5614**	**17.5614**	**5.6800e-003**	**0.0000**	**17.7034**

3.2 Site Preparation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	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	1.4000e-004	3.9100e-003	1.3200e-003	2.0000e-005	5.6000e-004	5.0000e-005	6.1000e-004	1.6000e-004	5.0000e-005	2.1000e-004	0.0000	1.5410	1.5410	2.0000e-005	2.3000e-004	1.6096
Worker	7.7000e-004	6.0000e-004	7.4800e-003	2.0000e-005	2.4200e-003	1.0000e-005	2.4300e-003	6.4000e-004	1.0000e-005	6.5000e-004	0.0000	1.8998	1.8998	5.0000e-005	5.0000e-005	1.9168
Total	**9.1000e-004**	**4.5100e-003**	**8.8000e-003**	**4.0000e-005**	**2.9800e-003**	**6.0000e-005**	**3.0400e-003**	**8.0000e-004**	**6.0000e-005**	**8.6000e-004**	**0.0000**	**3.4408**	**3.4408**	**7.0000e-005**	**2.8000e-004**	**3.5264**

3.2 Site Preparation - 2023

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					0.0188	0.0000	0.0188	4.6800e-003	0.0000	4.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0132	6.9900e-003	2.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	1.5964	1.5964	5.2000e-004	0.0000	1.6093
Total	**1.2100e-003**	**0.0132**	**6.9900e-003**	**2.0000e-005**	**0.0188**	**5.4000e-004**	**0.0193**	**4.6800e-003**	**5.0000e-004**	**5.1800e-003**	**0.0000**	**1.5964**	**1.5964**	**5.2000e-004**	**0.0000**	**1.6093**

3.2 Site Preparation - 2023

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	1.0000e-005	2.7000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1346	0.1346	0.0000	2.0000e-005	0.1406
Worker	6.0000e-005	5.0000e-005	6.3000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1672	0.1672	0.0000	0.0000	0.1686
Total	**7.0000e-005**	**3.2000e-004**	**7.4000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3018**	**0.3018**	**0.0000**	**2.0000e-005**	**0.3092**

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					8.4400e-003	0.0000	8.4400e-003	2.1100e-003	0.0000	2.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	0.0132	6.9900e-003	2.0000e-005		5.4000e-004	5.4000e-004		5.0000e-004	5.0000e-004	0.0000	1.5964	1.5964	5.2000e-004	0.0000	1.6093
Total	**1.2100e-003**	**0.0132**	**6.9900e-003**	**2.0000e-005**	**8.4400e-003**	**5.4000e-004**	**8.9800e-003**	**2.1100e-003**	**5.0000e-004**	**2.6100e-003**	**0.0000**	**1.5964**	**1.5964**	**5.2000e-004**	**0.0000**	**1.6093**

3.2 Site Preparation - 2023

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	1.0000e-005	2.7000e-004	1.1000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.1346	0.1346	0.0000	2.0000e-005	0.1406
Worker	6.0000e-005	5.0000e-005	6.3000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1672	0.1672	0.0000	0.0000	0.1686
Total	**7.0000e-005**	**3.2000e-004**	**7.4000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.7000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.3018**	**0.3018**	**0.0000**	**2.0000e-005**	**0.3092**

3.3 Grading - 2023

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					2.6500e-003	0.0000	2.6500e-003	2.9000e-004	0.0000	2.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0389	0.0288	6.0000e-005		1.5700e-003	1.5700e-003		1.4400e-003	1.4400e-003	0.0000	5.4129	5.4129	1.7500e-003	0.0000	5.4566
Total	**3.4300e-003**	**0.0389**	**0.0288**	**6.0000e-005**	**2.6500e-003**	**1.5700e-003**	**4.2200e-003**	**2.9000e-004**	**1.4400e-003**	**1.7300e-003**	**0.0000**	**5.4129**	**5.4129**	**1.7500e-003**	**0.0000**	**5.4566**

3.3 Grading - 2023

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	4.0000e-005	1.3700e-003	5.5000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.6730	0.6730	1.0000e-005	1.0000e-004	0.7028
Worker	4.5000e-004	3.4000e-004	4.3800e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1702	1.1702	3.0000e-005	3.0000e-005	1.1802
Total	**4.9000e-004**	**1.7100e-003**	**4.9300e-003**	**2.0000e-005**	**1.7900e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**2.0000e-005**	**5.0000e-004**	**0.0000**	**1.8432**	**1.8432**	**4.0000e-005**	**1.3000e-004**	**1.8830**

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					1.1900e-003	0.0000	1.1900e-003	1.3000e-004	0.0000	1.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4300e-003	0.0389	0.0288	6.0000e-005		1.5700e-003	1.5700e-003		1.4400e-003	1.4400e-003	0.0000	5.4129	5.4129	1.7500e-003	0.0000	5.4566
Total	**3.4300e-003**	**0.0389**	**0.0288**	**6.0000e-005**	**1.1900e-003**	**1.5700e-003**	**2.7600e-003**	**1.3000e-004**	**1.4400e-003**	**1.5700e-003**	**0.0000**	**5.4129**	**5.4129**	**1.7500e-003**	**0.0000**	**5.4566**

3.3 Grading - 2023

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	4.0000e-005	1.3700e-003	5.5000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.6730	0.6730	1.0000e-005	1.0000e-004	0.7028
Worker	4.5000e-004	3.4000e-004	4.3800e-003	1.0000e-005	1.5400e-003	1.0000e-005	1.5500e-003	4.1000e-004	1.0000e-005	4.2000e-004	0.0000	1.1702	1.1702	3.0000e-005	3.0000e-005	1.1802
Total	**4.9000e-004**	**1.7100e-003**	**4.9300e-003**	**2.0000e-005**	**1.7900e-003**	**2.0000e-005**	**1.8100e-003**	**4.8000e-004**	**2.0000e-005**	**5.0000e-004**	**0.0000**	**1.8432**	**1.8432**	**4.0000e-005**	**1.3000e-004**	**1.8830**

3.4 Boring/Conduit - 2023

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	6.8200e-003	0.0673	0.0877	1.3000e-004		3.4100e-003	3.4100e-003		3.1400e-003	3.1400e-003	0.0000	11.6629	11.6629	3.7700e-003	0.0000	11.7572
Total	**6.8200e-003**	**0.0673**	**0.0877**	**1.3000e-004**		**3.4100e-003**	**3.4100e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**11.6629**	**11.6629**	**3.7700e-003**	**0.0000**	**11.7572**

3.4 Boring/Conduit - 2023

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	1.3000e-004	4.1100e-003	1.6400e-003	2.0000e-005	7.6000e-004	3.0000e-005	7.9000e-004	2.2000e-004	3.0000e-005	2.5000e-004	0.0000	2.0190	2.0190	2.0000e-005	3.0000e-004	2.1085
Worker	6.8000e-004	5.0000e-004	6.5700e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3200e-003	6.1000e-004	1.0000e-005	6.2000e-004	0.0000	1.7553	1.7553	4.0000e-005	5.0000e-005	1.7703
Total	**8.1000e-004**	**4.6100e-003**	**8.2100e-003**	**4.0000e-005**	**3.0700e-003**	**4.0000e-005**	**3.1100e-003**	**8.3000e-004**	**4.0000e-005**	**8.7000e-004**	**0.0000**	**3.7743**	**3.7743**	**6.0000e-005**	**3.5000e-004**	**3.8788**

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	6.8200e-003	0.0673	0.0877	1.3000e-004		3.4100e-003	3.4100e-003		3.1400e-003	3.1400e-003	0.0000	11.6629	11.6629	3.7700e-003	0.0000	11.7572
Total	**6.8200e-003**	**0.0673**	**0.0877**	**1.3000e-004**		**3.4100e-003**	**3.4100e-003**		**3.1400e-003**	**3.1400e-003**	**0.0000**	**11.6629**	**11.6629**	**3.7700e-003**	**0.0000**	**11.7572**

3.4 Boring/Conduit - 2023

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	1.3000e-004	4.1100e-003	1.6400e-003	2.0000e-005	7.6000e-004	3.0000e-005	7.9000e-004	2.2000e-004	3.0000e-005	2.5000e-004	0.0000	2.0190	2.0190	2.0000e-005	3.0000e-004	2.1085
Worker	6.8000e-004	5.0000e-004	6.5700e-003	2.0000e-005	2.3100e-003	1.0000e-005	2.3200e-003	6.1000e-004	1.0000e-005	6.2000e-004	0.0000	1.7553	1.7553	4.0000e-005	5.0000e-005	1.7703
Total	**8.1000e-004**	**4.6100e-003**	**8.2100e-003**	**4.0000e-005**	**3.0700e-003**	**4.0000e-005**	**3.1100e-003**	**8.3000e-004**	**4.0000e-005**	**8.7000e-004**	**0.0000**	**3.7743**	**3.7743**	**6.0000e-005**	**3.5000e-004**	**3.8788**

3.5 Racking/Other Mechanical - 2023

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	5.5800e-003	0.0583	0.0722	1.9000e-004		2.3100e-003	2.3100e-003		2.1300e-003	2.1300e-003	0.0000	16.3024	16.3024	5.2700e-003	0.0000	16.4343
Total	**5.5800e-003**	**0.0583**	**0.0722**	**1.9000e-004**		**2.3100e-003**	**2.3100e-003**		**2.1300e-003**	**2.1300e-003**	**0.0000**	**16.3024**	**16.3024**	**5.2700e-003**	**0.0000**	**16.4343**

3.5 Racking/Other Mechanical - 2023

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	3.3000e-004	0.0103	4.1000e-003	5.0000e-005	1.9000e-003	9.0000e-005	1.9800e-003	5.5000e-004	8.0000e-005	6.3000e-004	0.0000	5.0475	5.0475	5.0000e-005	7.5000e-004	5.2712
Worker	1.4600e-003	1.0800e-003	0.0141	4.0000e-005	4.9500e-003	2.0000e-005	4.9700e-003	1.3100e-003	2.0000e-005	1.3400e-003	0.0000	3.7613	3.7613	9.0000e-005	1.0000e-004	3.7935
Total	**1.7900e-003**	**0.0114**	**0.0182**	**9.0000e-005**	**6.8500e-003**	**1.1000e-004**	**6.9500e-003**	**1.8600e-003**	**1.0000e-004**	**1.9700e-003**	**0.0000**	**8.8089**	**8.8089**	**1.4000e-004**	**8.5000e-004**	**9.0647**

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	5.5800e-003	0.0583	0.0722	1.9000e-004		2.3100e-003	2.3100e-003		2.1300e-003	2.1300e-003	0.0000	16.3024	16.3024	5.2700e-003	0.0000	16.4342
Total	**5.5800e-003**	**0.0583**	**0.0722**	**1.9000e-004**		**2.3100e-003**	**2.3100e-003**		**2.1300e-003**	**2.1300e-003**	**0.0000**	**16.3024**	**16.3024**	**5.2700e-003**	**0.0000**	**16.4342**

3.5 Racking/Other Mechanical - 2023

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	3.3000e-004	0.0103	4.1000e-003	5.0000e-005	1.9000e-003	9.0000e-005	1.9800e-003	5.5000e-004	8.0000e-005	6.3000e-004	0.0000	5.0475	5.0475	5.0000e-005	7.5000e-004	5.2712
Worker	1.4600e-003	1.0800e-003	0.0141	4.0000e-005	4.9500e-003	2.0000e-005	4.9700e-003	1.3100e-003	2.0000e-005	1.3400e-003	0.0000	3.7613	3.7613	9.0000e-005	1.0000e-004	3.7935
Total	**1.7900e-003**	**0.0114**	**0.0182**	**9.0000e-005**	**6.8500e-003**	**1.1000e-004**	**6.9500e-003**	**1.8600e-003**	**1.0000e-004**	**1.9700e-003**	**0.0000**	**8.8089**	**8.8089**	**1.4000e-004**	**8.5000e-004**	**9.0647**

3.6 PV Panel Installation - 2023

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	6.4000e-004	8.4400e-003	0.0138	2.0000e-005		2.7000e-004	2.7000e-004		2.5000e-004	2.5000e-004	0.0000	1.8260	1.8260	5.9000e-004	0.0000	1.8408
Total	**6.4000e-004**	**8.4400e-003**	**0.0138**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**1.8260**	**1.8260**	**5.9000e-004**	**0.0000**	**1.8408**

3.6 PV Panel Installation - 2023

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	1.8000e-004	5.7600e-003	2.2900e-003	3.0000e-005	1.0600e-003	5.0000e-005	1.1100e-003	3.1000e-004	5.0000e-005	3.5000e-004	0.0000	2.8266	2.8266	3.0000e-005	4.2000e-004	2.9519
Worker	7.0000e-004	5.2000e-004	6.7600e-003	2.0000e-005	2.3700e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8054	1.8054	5.0000e-005	5.0000e-005	1.8209
Total	**8.8000e-004**	**6.2800e-003**	**9.0500e-003**	**5.0000e-005**	**3.4300e-003**	**6.0000e-005**	**3.5000e-003**	**9.4000e-004**	**6.0000e-005**	**9.9000e-004**	**0.0000**	**4.6321**	**4.6321**	**8.0000e-005**	**4.7000e-004**	**4.7727**

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	6.4000e-004	8.4400e-003	0.0138	2.0000e-005		2.7000e-004	2.7000e-004		2.5000e-004	2.5000e-004	0.0000	1.8260	1.8260	5.9000e-004	0.0000	1.8408
Total	**6.4000e-004**	**8.4400e-003**	**0.0138**	**2.0000e-005**		**2.7000e-004**	**2.7000e-004**		**2.5000e-004**	**2.5000e-004**	**0.0000**	**1.8260**	**1.8260**	**5.9000e-004**	**0.0000**	**1.8408**

3.6 PV Panel Installation - 2023

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	1.8000e-004	5.7600e-003	2.2900e-003	3.0000e-005	1.0600e-003	5.0000e-005	1.1100e-003	3.1000e-004	5.0000e-005	3.5000e-004	0.0000	2.8266	2.8266	3.0000e-005	4.2000e-004	2.9519
Worker	7.0000e-004	5.2000e-004	6.7600e-003	2.0000e-005	2.3700e-003	1.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	1.8054	1.8054	5.0000e-005	5.0000e-005	1.8209
Total	**8.8000e-004**	**6.2800e-003**	**9.0500e-003**	**5.0000e-005**	**3.4300e-003**	**6.0000e-005**	**3.5000e-003**	**9.4000e-004**	**6.0000e-005**	**9.9000e-004**	**0.0000**	**4.6321**	**4.6321**	**8.0000e-005**	**4.7000e-004**	**4.7727**

3.7 Other Electrical - 2023

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	9.1500e-003	0.1146	0.0789	2.0000e-004		3.5800e-003	3.5800e-003		3.3000e-003	3.3000e-003	0.0000	17.2395	17.2395	5.5800e-003	0.0000	17.3789
Total	**9.1500e-003**	**0.1146**	**0.0789**	**2.0000e-004**		**3.5800e-003**	**3.5800e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**17.2395**	**17.2395**	**5.5800e-003**	**0.0000**	**17.3789**

3.7 Other Electrical - 2023

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	8.0000e-005	2.6100e-003	1.0400e-003	1.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	1.2787	1.2787	1.0000e-005	1.9000e-004	1.3354
Worker	9.9000e-004	7.3000e-004	9.5200e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.5410	2.5410	6.0000e-005	7.0000e-005	2.5627
Total	**1.0700e-003**	**3.3400e-003**	**0.0106**	**4.0000e-005**	**3.8200e-003**	**4.0000e-005**	**3.8600e-003**	**1.0300e-003**	**3.0000e-005**	**1.0600e-003**	**0.0000**	**3.8197**	**3.8197**	**7.0000e-005**	**2.6000e-004**	**3.8981**

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	9.1500e-003	0.1146	0.0789	2.0000e-004		3.5800e-003	3.5800e-003		3.3000e-003	3.3000e-003	0.0000	17.2395	17.2395	5.5800e-003	0.0000	17.3789
Total	**9.1500e-003**	**0.1146**	**0.0789**	**2.0000e-004**		**3.5800e-003**	**3.5800e-003**		**3.3000e-003**	**3.3000e-003**	**0.0000**	**17.2395**	**17.2395**	**5.5800e-003**	**0.0000**	**17.3789**

3.7 Other Electrical - 2023

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	8.0000e-005	2.6100e-003	1.0400e-003	1.0000e-005	4.8000e-004	2.0000e-005	5.0000e-004	1.4000e-004	2.0000e-005	1.6000e-004	0.0000	1.2787	1.2787	1.0000e-005	1.9000e-004	1.3354
Worker	9.9000e-004	7.3000e-004	9.5200e-003	3.0000e-005	3.3400e-003	2.0000e-005	3.3600e-003	8.9000e-004	1.0000e-005	9.0000e-004	0.0000	2.5410	2.5410	6.0000e-005	7.0000e-005	2.5627
Total	**1.0700e-003**	**3.3400e-003**	**0.0106**	**4.0000e-005**	**3.8200e-003**	**4.0000e-005**	**3.8600e-003**	**1.0300e-003**	**3.0000e-005**	**1.0600e-003**	**0.0000**	**3.8197**	**3.8197**	**7.0000e-005**	**2.6000e-004**	**3.8981**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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

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 Non-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 Non-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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-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 Non-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

	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	9.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Unmitigated	9.2400e-003	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Total	**9.2400e-003**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

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	1.6400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.6000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	3.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Total	**9.2400e-003**	**0.0000**	**3.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	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 Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-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

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 Non-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 Non-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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

RCCD Solar Plan Project Operations - Max Day

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	8.70	Acre	8.70	378,972.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RCCD Solar Plan project operations. Max day assuming inspection/maintenance plus panel washing on same day

Land Use - Other non-asphalt surface area used as surrogate for solar PV arrays

Construction Phase - Adjusted based on applicant input - maximum daily operations combined for Norco College and Moreno Valley solar

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - No off-road equipment required for operations

Trips and VMT - Assumes that as for a max day, 7 worker + 7 truck roundtrips (i.e., 14 one-way trips each) would occur on same day. For annual operations at both sites, the max day would be multiplied by 11 (i.e., 77 worker and 77 truck roundtirps per year total)

On-road Fugitive Dust - Default

Demolition - No demolition

Grading - No grading required for operations

Architectural Coating - No coatings required

Vehicle Trips - Operational trips modeled in the construction on-road vehicle module

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Water And Wastewater - Total outdoor water use ~6,000 gallons for annual panel washing, which would equate to ~545.5 gallons per day activity (i.e., parsed for 11 total days per year), based on input from applicant

Construction Off-road Equipment Mitigation -

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	10/13/2023	10/2/2023
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblWater	OutdoorWaterUseRate	0.00	545.50

2.0 Emissions Summary

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					
2023	0.0669	0.4890	0.7006	3.8300e-003	0.2462	4.7200e-003	0.2509	0.0673	4.4800e-003	0.0718	0.0000	398.5031	398.5031	5.8600e-003	0.0416	411.0502
Maximum	**0.0669**	**0.4890**	**0.7006**	**3.8300e-003**	**0.2462**	**4.7200e-003**	**0.2509**	**0.0673**	**4.4800e-003**	**0.0718**	**0.0000**	**398.5031**	**398.5031**	**5.8600e-003**	**0.0416**	**411.0502**

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					
2023	0.0669	0.4890	0.7006	3.8300e-003	0.2462	4.7200e-003	0.2509	0.0673	4.4800e-003	0.0718	0.0000	398.5031	398.5031	5.8600e-003	0.0416	411.0502
Maximum	**0.0669**	**0.4890**	**0.7006**	**3.8300e-003**	**0.2462**	**4.7200e-003**	**0.2509**	**0.0673**	**4.4800e-003**	**0.0718**	**0.0000**	**398.5031**	**398.5031**	**5.8600e-003**	**0.0416**	**411.0502**

	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**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-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	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**0.0000**	**2.0300e-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	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-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	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**0.0000**	**2.0300e-003**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Maintenance/Washing	Site Preparation	10/2/2023	10/2/2023	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 8.7

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
Maintenance/Washing	Rubber Tired Dozers	0	8.00	247	0.40
Maintenance/Washing	Tractors/Loaders/Backhoes	0	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
Maintenance/Washing	0	14.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Maintenance/Washing - 2023

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	0.0000	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**

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	0.0158	0.4574	0.1883	2.4500e-003	0.0897	3.9800e-003	0.0937	0.0258	3.8100e-003	0.0296		259.3794	259.3794	2.6400e-003	0.0383	270.8674
Worker	0.0511	0.0316	0.5122	1.3800e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		139.1237	139.1237	3.2200e-003	3.2800e-003	140.1828
Total	**0.0669**	**0.4890**	**0.7006**	**3.8300e-003**	**0.2462**	**4.7100e-003**	**0.2509**	**0.0673**	**4.4800e-003**	**0.0718**		**398.5031**	**398.5031**	**5.8600e-003**	**0.0416**	**411.0502**

3.2 Maintenance/Washing - 2023

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	0.0000	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**		**0.0000**

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	0.0158	0.4574	0.1883	2.4500e-003	0.0897	3.9800e-003	0.0937	0.0258	3.8100e-003	0.0296		259.3794	259.3794	2.6400e-003	0.0383	270.8674
Worker	0.0511	0.0316	0.5122	1.3800e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		139.1237	139.1237	3.2200e-003	3.2800e-003	140.1828
Total	**0.0669**	**0.4890**	**0.7006**	**3.8300e-003**	**0.2462**	**4.7100e-003**	**0.2509**	**0.0673**	**4.4800e-003**	**0.0718**		**398.5031**	**398.5031**	**5.8600e-003**	**0.0416**	**411.0502**

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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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 Non-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**

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 Non-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	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-003
Unmitigated	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-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	0.0289					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-003
Total	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**		**2.0300e-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	0.0289					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-003
Total	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**		**2.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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

RCCD Solar Plan Project Operations - Max Day

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	8.70	Acre	8.70	378,972.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RCCD Solar Plan project operations. Max day assuming inspection/maintenance plus panel washing on same day

Land Use - Other non-asphalt surface area used as surrogate for solar PV arrays

Construction Phase - Adjusted based on applicant input - maximum daily operations combined for Norco College and Moreno Valley solar

Off-road Equipment - Adjusted equipment based on applicant info

Off-road Equipment - No off-road equipment required for operations

Trips and VMT - Assumes that as for a max day, 7 worker + 7 truck roundtrips (i.e., 14 one-way trips each) would occur on same day. For annual operations at both sites, the max day would be multiplied by 11 (i.e., 77 worker and 77 truck roundtirps per year total)

On-road Fugitive Dust - Default

Demolition - No demolition

Grading - No grading required for operations

Architectural Coating - No coatings required

Vehicle Trips - Operational trips modeled in the construction on-road vehicle module

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

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Vehicle Emission Factors - Default

Water And Wastewater - Total outdoor water use ~6,000 gallons for annual panel washing, which would equate to ~545.5 gallons per day activity (i.e., parsed for 11 total days per year), based on input from applicant

Construction Off-road Equipment Mitigation -

Fleet Mix - Default

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	PhaseEndDate	10/13/2023	10/2/2023
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	14.00
tblTripsAndVMT	WorkerTripNumber	0.00	14.00
tblWater	OutdoorWaterUseRate	0.00	545.50

2.0 Emissions Summary

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					
2023	0.0625	0.5178	0.6106	3.7000e-003	0.2462	4.7300e-003	0.2509	0.0673	4.5000e-003	0.0718	0.0000	386.0824	386.0824	5.8000e-003	0.0418	398.6890
Maximum	**0.0625**	**0.5178**	**0.6106**	**3.7000e-003**	**0.2462**	**4.7300e-003**	**0.2509**	**0.0673**	**4.5000e-003**	**0.0718**	**0.0000**	**386.0824**	**386.0824**	**5.8000e-003**	**0.0418**	**398.6890**

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					
2023	0.0625	0.5178	0.6106	3.7000e-003	0.2462	4.7300e-003	0.2509	0.0673	4.5000e-003	0.0718	0.0000	386.0824	386.0824	5.8000e-003	0.0418	398.6890
Maximum	**0.0625**	**0.5178**	**0.6106**	**3.7000e-003**	**0.2462**	**4.7300e-003**	**0.2509**	**0.0673**	**4.5000e-003**	**0.0718**	**0.0000**	**386.0824**	**386.0824**	**5.8000e-003**	**0.0418**	**398.6890**

	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**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-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	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**0.0000**	**2.0300e-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	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-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	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**	**0.0000**	**2.0300e-003**

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

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Maintenance/Washing	Site Preparation	10/2/2023	10/2/2023	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 8.7

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
Maintenance/Washing	Rubber Tired Dozers	0	8.00	247	0.40
Maintenance/Washing	Tractors/Loaders/Backhoes	0	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
Maintenance/Washing	0	14.00	14.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Maintenance/Washing - 2023

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	0.0000	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**

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	0.0146	0.4851	0.1947	2.4500e-003	0.0897	4.0000e-003	0.0937	0.0258	3.8200e-003	0.0296		260.0231	260.0231	2.5900e-003	0.0385	271.5479
Worker	0.0479	0.0328	0.4159	1.2500e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		126.0593	126.0593	3.2100e-003	3.3600e-003	127.1411
Total	**0.0625**	**0.5178**	**0.6106**	**3.7000e-003**	**0.2462**	**4.7300e-003**	**0.2509**	**0.0673**	**4.4900e-003**	**0.0718**		**386.0824**	**386.0824**	**5.8000e-003**	**0.0418**	**398.6890**

3.2 Maintenance/Washing - 2023

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	0.0000	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**		**0.0000**

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	0.0146	0.4851	0.1947	2.4500e-003	0.0897	4.0000e-003	0.0937	0.0258	3.8200e-003	0.0296		260.0231	260.0231	2.5900e-003	0.0385	271.5479
Worker	0.0479	0.0328	0.4159	1.2500e-003	0.1565	7.3000e-004	0.1572	0.0415	6.7000e-004	0.0422		126.0593	126.0593	3.2100e-003	3.3600e-003	127.1411
Total	**0.0625**	**0.5178**	**0.6106**	**3.7000e-003**	**0.2462**	**4.7300e-003**	**0.2509**	**0.0673**	**4.4900e-003**	**0.0718**		**386.0824**	**386.0824**	**5.8000e-003**	**0.0418**	**398.6890**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	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
	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 Non-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 Non-Asphalt Surfaces	16.60	8.40	6.90	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 Non-Asphalt Surfaces	0.534849	0.056022	0.172639	0.141007	0.026597	0.007310	0.011327	0.018693	0.000616	0.000315	0.024057	0.001100	0.005468

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 Non-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**

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 Non-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	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-003
Unmitigated	0.1632	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-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	0.0289					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-003
Total	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**		**2.0300e-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	0.0289					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1342					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.0000e-005	1.0000e-005	8.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.9000e-003	1.9000e-003	0.0000		2.0300e-003
Total	**0.1632**	**1.0000e-005**	**8.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.9000e-003**	**1.9000e-003**	**0.0000**		**2.0300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B1

Plant Compendium

Plant Species

Vascular Species

Eudicots

ASTERACEAE – SUNFLOWER FAMILY

Ambrosia acanthicarpa – flatspine bur ragweed
* *Centaurea solstitialis* – yellow star-thistle
Encelia farinosa – brittle bush
Heterotheca grandiflora – telegraphweed
* *Lactuca serriola* – prickly lettuce
* *Oncosiphon piluliferum* – stinknet

BIGNONIACEAE – BIGNONIA FAMILY

Chilopsis linearis – desert-willow

BRASSICACEAE – MUSTARD FAMILY

* *Hirschfeldia incana* – shortpod mustard
* *Raphanus sativus* – cultivated radish

CHENOPODIACEAE – GOOSEFOOT FAMILY

* *Salsola tragus* – prickly Russian thistle

EUPHORBIACEAE – SPURGE FAMILY

Croton californicus – California croton

FABACEAE – LEGUME FAMILY

Acmispon glaber – deer weed

GERANIACEAE – GERANIUM FAMILY

* *Erodium cicutarium* – redstem stork's bill

LAMIACEAE – MINT FAMILY

* *Marrubium vulgare* – horehound

ONAGRACEAE – EVENING PRIMROSE FAMILY

Camissoniopsis bistorta – southern suncup

POLYGONACEAE – BUCKWHEAT FAMILY

Eriogonum fasciculatum – California buckwheat

TAMARICACEAE – TAMARISK FAMILY

* *Tamarix ramosissima* – tamarisk

Monocots

POACEAE – GRASS FAMILY

* *Avena barbata* – slender oat
* *Bromus madritensis* – compact brome
* *Hordeum vulgare* – common barley

* signifies introduced (non-native) species

Appendix B2
Wildlife Compendium

Wildlife Species

Birds

FINCHES

FRINGILLIDAE – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus – house finch

Spinus psaltria – lesser goldfinch

HAWKS

ACCIPITRIDAE – HAWKS, KITES, EAGLES, AND ALLIES

Buteo jamaicensis – red-tailed hawk

HUMMINGBIRDS

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

Calypte costae – Costa's hummingbird

JAYS, MAGPIES and CROWS

CORVIDAE – CROWS AND JAYS

Corvus corax – common raven

MOCKINGBIRDS and THRASHERS

MIMIDAE – MOCKINGBIRDS AND THRASHERS

Mimus polyglottos – northern mockingbird

PIGEONS and DOVES

COLUMBIDAE – PIGEONS AND DOVES

Zenaida macroura – mourning dove

Reptiles

LIZARDS

PHRYNOSOMATIDAE – IGUANID LIZARDS

Uta stansburiana – common side-blotched lizard

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Appendix C

Geotechnical Investigation

PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT

Districtwide Solar Planning Initiative Project
Moreno Valley and Norco College Campuses
Cities of Moreno Valley and Norco, Riverside County, California

Converse Project No. 21-81-232-01

Prepared For:

Riverside Community College District
3801 Market Street, 3rd Floor
Riverside, CA 92501

Presented By:

Converse Consultants
2021 Rancho Drive, Suite 1
Redlands, CA 92373
909-796-0544

October 19, 2021

October 19, 2021

Mr. Mehran Mohtasham
Director of Capital Planning, Facilities, Planning and Development
Riverside Community College District (RCCD)
3801 Market Street, 3rd Floor
Riverside, CA 92501

Subject: **PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT**
Districtwide Solar Planning Initiative Project
Moreno Valley and Norco College Campuses (RCCD)
Cities of Moreno Valley and Norco, Riverside County, California
Converse Project No. 21-81-232-01

Dear Mr. Mohtasham:

Converse Consultants (Converse) is pleased to submit this preliminary geotechnical investigation report to provide the design/build contractors information on the seismic, subsurface conditions and preliminary recommendations for the Districtwide Solar Planning Initiative project sites (Moreno Valley and Norco College Campuses, RCCD), located in the Cities of Moreno Valley and Norco, Riverside County, California. This report was prepared in accordance with our proposal dated August 11, 2021, and your Purchase Order # P-0082172 dated September 9, 2021.

Based upon our field investigation, laboratory data, and analyses, the proposed project is considered feasible from a geotechnical standpoint. This is a preliminary report; therefore, additional investigation and analysis need to perform for final design and construction.

We appreciate the opportunity to be of service to Riverside Community College District. Should you have any questions, please do not hesitate to contact us at 909-796-0544.

CONVERSE CONSULTANTS

Hashmi S. E. Quazi, PhD, PE, GE
Principal Engineer

Dist.: 1-Electronic Pdf/Addressee
HSQ/RLG/ZA/kvg

PROFESSIONAL CERTIFICATION

This report has been prepared by the following professionals whose seals and signatures appear herein.

The findings, recommendations, specifications and professional opinions contained in this report were prepared in accordance with the generally accepted professional engineering and engineering geologic principle and practice in this area of Southern California. We make no other warranty, either expressed or implied.

Zahangir Alam, PhD, PE (TX)
Senior Staff Engineer

Robert L. Gregorek II, PG, CEG
Senior Geologist

REGISTERED GEOLOGIST
ROBERT L. GREGOREK II
No. 1257
CERTIFIED ENGINEERING GEOLOGIST
Exp. 8/31/23
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
HASHMI S. E. QUAZI
NO. GE 2517
Exp. 06/2023
GEOTECHNICAL
STATE OF CALIFORNIA

Hashmi S. E. Quazi, PhD, PE, GE
Principal Engineer

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APPENDICES

1.0 INTRODUCTION

This report presents the preliminary findings of our geotechnical investigation performed by Converse for the Districtwide Solar Planning Initiative project sites (Moreno Valley and Norco College Campuses, RCCD), located in the Cities of Moreno Valley and Norco, Riverside County, California. The project locations are shown in Figure No. 1a, *Approximate Project Location Map (MVC)* and Figure No. 1b, *Approximate Project Locations Map (NC)*.

The purposes of this investigation were to determine the nature and engineering properties of the subsurface soils, and to provide seismic, subsurface conditions and preliminary design recommendations for the project.

This report is prepared for the project described herein and is intended for use solely by Riverside Community College District (RCCD) and their authorized agents for preliminary information. It should not be used as a bidding document but may be made available to the potential contractors for information on factual data only. For bidding purposes, the contractors should be responsible for making their own interpretation of the data contained in this report.

This is a preliminary report; therefore, please do not rely on this report for final design and construction.

2.0 PROJECT DESCRIPTION

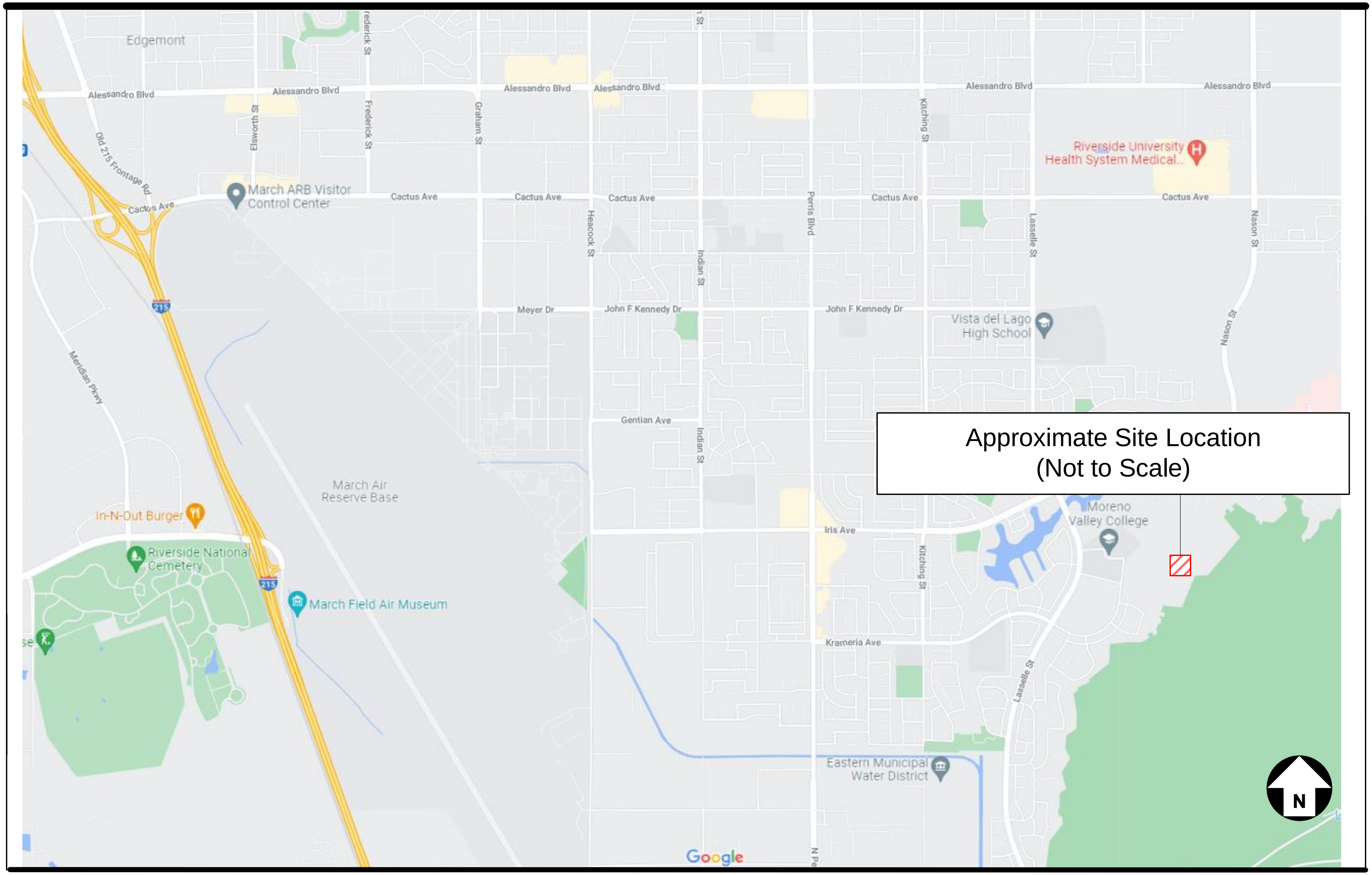
RCCD intends to install ground mounted solar panels at the Norco and Moreno Valley college campuses. This project will be designed and constructed through a design/build procurement process. The following equipment will be required at each college campus.

Moreno Valley College (MVC) Campus: 1,965 kW Solar and 400kWh BESS

- New 4 Position Selector Switch
- New 12kV feeder
- New Transformer and Switch Board
- New Bess

Norco College (NC) Campus: 1,741 kW Solar and 400kWh BESS

- New 4 Position Selector Switch
- New 12kV feeder
- New Transformer and Switch Board
- New Bess



Project: Districtwide Solar Planning Initiative

Location: Moreno Valley College Campus
City of Moreno Valley, Riverside County, California

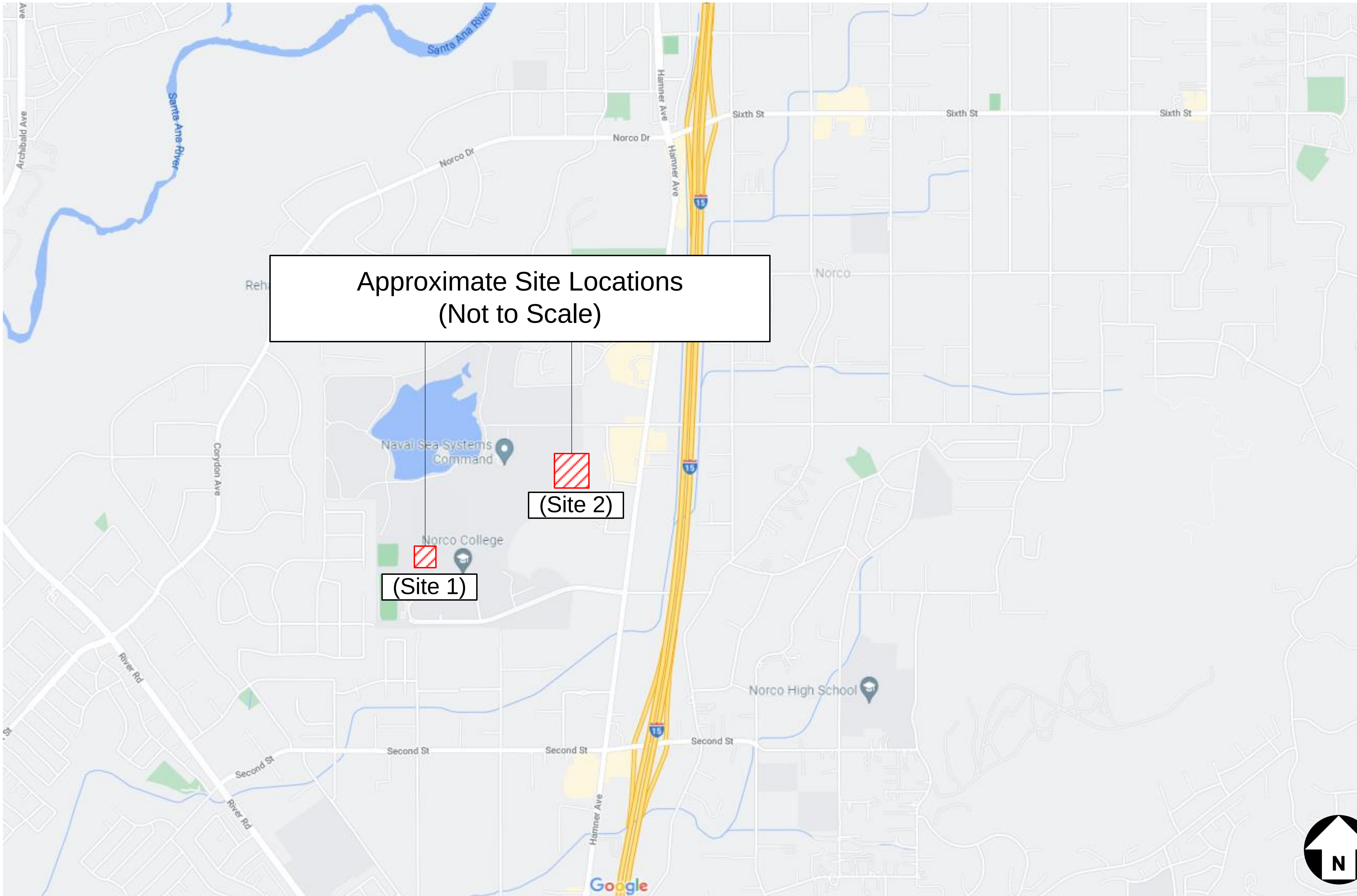
For: Riverside Community College District

Approximate Site Location Map (MVC)

Project No.
21-81-232-01

Converse Consultants

Figure No.
1a



Project: Districtwide Solar Planning Initiative
Location: Norco College Campus
City of Norco, Riverside County, California
For: Riverside Community College District

Approximate Site Locations Map (NC)

Project No.
21-81-232-01

Converse Consultants

Figure No.
1b

3.0 SITE DESCRIPTION

General current site conditions at each college campus are presented below.

Moreno Valley College Campus

The site is located within Moreno Valley College campus, located at 16130 Lasselle Street, City of Moreno Valley, Riverside County, California. The site is bounded to the north by two Eastern Municipal Water District (EMWD) water reservoirs, to the south and east by vacant land and mountains, to the west by Parkside Drive and Parkside Complex. A slope exists on the west side of the site with an approximate ratio of 5:1. The site is presently vacant and partially covered with minor desert shrubbery. The approximate elevation of the proposed site is 1,660 feet above mean sea level (amsl). Photograph Nos. 1 and 2 depict the present site conditions.

Photograph No. 1: Present proposed site conditions and existing slope, facing west towards Parkside Dr. and Parkside complex.

Photograph No. 2: Present proposed site conditions, facing north towards existing reservoirs.

Norco College Campus:

Two sites (Site 1 and 2) are within Norco College, located at 2001 Third Street City of Norco, Riverside County, California. The first location (Site 1) is located north of the campus buildings in a hilly area. The site is presently vacant and partially covered with minor desert shrubbery, and cobbles and boulders at the surface. The site is bounded to the south by campus buildings, to the north and west by vacant land, and to the east by the Naval Base. The terrain elevation slopes from approximately 715 feet to 680 feet above mean sea level (amsl). Photograph Nos. 3 and 4 depict the present site conditions.

Photograph No. 3: Present proposed site conditions, facing northeast.

Photograph No. 4: Present proposed site conditions, facing south towards facilities buildings.

The second location (Site 2) is located northeast of the Norco College campus. It is bounded by the Naval Base from the west, Fourth Street from the north, Corona-Norco Unified District and Commercial properties from the east and vacant land from the south. The site is presently vacant and covered with minor desert shrubbery. The approximate elevation of the proposed site is 645 feet above mean sea level (amsl). Photograph Nos. 5 and 6 depict the present site conditions.

Photograph No. 5: Present proposed site conditions, facing southwest Naval base.

Photograph No. 6: Present proposed site conditions, facing north.

4.0 SCOPE OF WORK

The scope of this investigation included project set-up, subsurface exploration, laboratory testing, engineering analysis, and preparation of this report, as described in the following sections.

4.1 Document Review

We reviewed geologic maps, aerial photographs, groundwater data, and other information pertaining to the project area to assist in the evaluation of geologic hazards that may be present. Besides, pertinent information (the documents cited in Section 11, *References*) were used to understand the subsurface conditions and plan the investigation for this project.

4.2 Project Set-up

The project set-up consisted of the following tasks.

- Prepared and submitted boring locations map for your review and approval.
- Coordinated with you and the district for the sites access and temporary parking permit.
- Conducted a field reconnaissance and marked the boring locations.
- Notified Underground Service Alert (USA) at least 48 hours prior to drilling to clear the boring locations of any conflict with existing underground utilities.
- Engaged a California-licensed driller to drill exploratory borings.

4.3 Subsurface Exploration

Subsurface exploration performed at each college campus is presented below.

Moreno Valley College Campus
Two exploratory boring (BH-01 and BH-02) were drilled on September 22, 2021, to investigate the subsurface conditions at Moreno Valley College campus. The borings were drilled using an 8-inch dimeter hollow stem auger to the depths of 17.7 feet and 51.5 feet below existing ground surface (bgs).

Norco College Campus
Four borings (BH-03 through BH-06) were drilled on September 22 and 23, 2021 to investigate the subsurface conditions at two sites within Norco Community College campus. The borings were drilled using an 8-inch dimeter hollow stem auger to the depths between 7.5 and 50.2 feet below existing ground surface (bgs). Borings (BH-03 and BH-04) were terminated at depths of 7.5 and 10.5 feet bgs due to the obstruction in cobbles/boulders and possible bedrock.

Approximate boring locations are indicated in Figure No. 2a, *Approximate Boring Locations Map (MVC)* and Figure No. 2b*, Approximate Boring Locations Map (NC)*. For a description of the field exploration and sampling program, see Appendix A, *Field Exploration*.

4.4 Laboratory Testing

Representative soil samples of the project sites were tested in the laboratory to aid in the soils classification and to evaluate the relevant engineering properties of the soils. These tests included the following.

- *In*-situ moisture contents and dry densities (ASTM D2216 and ASTM D2937)
- Expansion index (ASTM D4829)
- Collapse potential (ASTM D4546)
- Soil corrosivity (California Tests 643, 422, and 417)
- Grain size distribution (ASTM D6913)
- Maximum dry density and optimum-moisture content (ASTM D1557)
- Direct shear (ASTM D3080)

For *in-situ* moisture and dry density data, see the Logs of Borings in Appendix A, *Field Exploration*. For a description of the laboratory test methods and test results, see Appendix B, *Laboratory Testing Program.*

Project: Districtwide Solar Planning Initiative
Location: Moreno Valley College Campus
City of Moreno Valley, Riverside County, California
For: Riverside Community College District

Approximate Boring Locations Map (MVC)

Project No.
21-81-232-01

Converse Consultants

Figure No.
2a

Project: Districtwide Solar Planning Initiative
Location: Norco College Campus
City of Norco, Riverside County, California
For: Riverside Community College District

Approximate Boring Locations Map (NC)

Project No.
21-81-232-01

Converse Consultants

Figure No.
2b

4.5 Analysis and Report Preparation

Data obtained from the field exploration and laboratory testing program was compiled and evaluated. Geotechnical analyses of the compiled data were performed, and this report was prepared to present our findings, conclusions, and recommendations for the project.

5.0 LABORATORY TEST RESULTS

Results of physical and chemical tests performed for this project are presented below.

5.1 Physical Testing

Results of the various laboratory tests are presented in Appendix B, *Laboratory Testing Program*, except for the results of in-situ moisture and dry density tests which are presented on the Logs of Borings in Appendix A, *Field Exploration*. The results are also discussed below.

Moreno Valley College Campus

- In-situ Moisture and Dry Density – *In-situ* dry densities and moisture contents of the site soils were determined in accordance with ASTM Standard D2216 and D2937. Dry densities of alluvium soils ranged from 106 to 126 pounds per cubic foot (pcf) with moisture contents of 3 to 8 percent.
- Expansion Index (EI) – One representative sample from the upper 5 feet soils was tested to evaluate the expansion potential in accordance with ASTM Standard D4829. The test result showed an EI of 1, corresponding to very low expansion potential.
- Collapse Potential – The collapse potential of one relatively undisturbed sample was tested under a vertical stress of up to 2.0 kips per square foot (ksf) in accordance with the ASTM Standard D4546 test method. The test result showed collapse of 2.0 percent, corresponding to slight collapse potential.
- Grain Size Analysis –Two representative samples were tested to determine the relative grain size distribution in accordance with the ASTM Standard D6913. The test results are graphically presented in Drawing No. B-1, *Grain Size Distribution Results.*
- Maximum Dry Density and Optimum Moisture Content – Typical moisture-density relationship test was performed on a representative sample in accordance with ASTM D1557. The results are presented in Drawing No. B-2, *Moisture-Density Relationship Results*, in Appendix B, *Laboratory Testing Program*. The laboratory maximum dry density was 132.0 pcf and the optimum moisture content of 6.0 percent.
- Direct Shear – One direct shear test was performed on undisturbed representative ring samples under soaked moisture condition in accordance with ASTM Standard D3080. The results are presented in Drawings No. B-3, *Direct Shear Test Results* in Appendix B, *Laboratory Testing Program*.

Norco College Campus

- In-situ Moisture and Dry Density – *In-situ* dry densities and moisture contents of the site soils were determined in accordance with ASTM Standard D2216 and D2937. Dry densities of alluvium soils ranged from 101 (ignoring disturbed) to 128 pounds per cubic foot (pcf) with moisture contents of 2 to 10 percent.
- Expansion Index (EI) – One representative sample from the upper 5 feet soils was tested to evaluate the expansion potential in accordance with ASTM Standard D4829. The test result showed an EI of 9, corresponding to very low expansion potential.
- Collapse Potential – The collapse potential of one relatively undisturbed sample was tested under a vertical stress of up to 2.0 kips per square foot (ksf) in accordance with the ASTM Standard D4546 test method. The test result showed collapse of 1.9 percent, corresponding to slight collapse potential.
- Grain Size Analysis – Two representative samples were tested to determine the relative grain size distribution in accordance with the ASTM Standard D6913. The test results are graphically presented in Drawing No. B-1, *Grain Size Distribution Results.*
- Maximum Dry Density and Optimum Moisture Content – Typical moisture-density relationship test was performed on a representative sample in accordance with ASTM D1557. The results are presented in Drawing No. B-2, *Moisture-Density Relationship Results*, in Appendix B, *Laboratory Testing Program*. The laboratory maximum dry density was 133.5 pcf and the optimum moisture content of 5.5 percent.
- Direct Shear – One direct shear test was performed on undisturbed representative ring samples under soaked moisture condition in accordance with ASTM Standard D3080. The results are presented in Drawings No. B-4, *Direct Shear Test Results* in Appendix B, *Laboratory Testing Program*.

5.2 Chemical Testing - Corrosivity Evaluation

Two representative soil samples (one from each college campus) was tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purposes of these tests were to determine the corrosion potential of site soils when placed in contact with common pipe materials. These tests were performed by AP Engineering and Testing, Inc. (Pomona, CA) in accordance with California Tests 643, 422, and 417. The test results are presented in Appendix B, *Laboratory Testing Program and summarized below.*

Moreno Valley College Campus

- The pH measurement of the tested sample was 8.1.
- The sulfate content of the tested sample was 36 ppm (0.0036 percent by weight).
- The chloride concentration of the tested sample was 23 ppm.
- The minimum electrical resistivity when saturated was 6,466 ohm-cm.

<u>Norco College Campus</u>

- The pH measurement of the tested sample was 7.4.
- The sulfate content of the tested sample was 23 ppm (0.0023 percent by weight).
- The chloride concentration of the tested sample was 21 ppm.
- The minimum electrical resistivity when saturated was 19,890 ohm-cm.

6.0 SUBSURFACE CONDITIONS

A general description of the subsurface conditions, various materials and groundwater conditions encountered at each location during our field exploration is discussed below.

6.1 Subsurface Profile

General subsurface soils description for each college campus is presented below.

<u>Moreno Valley College Campus</u>

Based on the exploratory borings and laboratory test results, the subsurface alluvial soils at the site consist primarily of a mixture of sand, silt and gravel. Scattered gravel up to 1 inch in maximum dimension was encountered in the borings. The alluvium is underlain at varying depths (15 feet to 45 feet bgs) by granitic bedrock. Though not encountered, cobbles and boulders will likely be present at the site.

<u>Norco College Campus</u>

Based on the exploratory borings and laboratory test results, the subsurface alluvial soils at the site consist primarily of a mixture of sand, silt, gravel, cobbles and boulders. Scattered gravel up to 3 inches and cobbles up to 4 inches were observed in the borings. The alluvium is underlain at varying depths (10 feet to 15 feet bgs) by silty sandstone bedrock. Boulders up to 3 feet is expected to be present at the site.

For a detailed description of the subsurface materials encountered in the exploratory borings, see Drawings No. A-2 through A-7, Logs of Borings, in Appendix A, Field Exploration.

6.2 Groundwater

Groundwater data for each college campus is presented below.

<u>Moreno Valley College Campus</u>

Groundwater was not encountered during the investigation at the Moreno Valley College site to the maximum explored depth of 51.5 feet bgs.

For comparison, regional groundwater data from the GeoTracker database (SWRCB, 2021) for locations within a one-mile radius of the project site was reviewed to evaluate the current and historical groundwater levels and no data was available.

Regional groundwater data from the USGS National Water Information System (USGS, 2021) for locations within a one-mile radius of the project site was reviewed to evaluate the current and historical groundwater levels. One site was found with available groundwater data and can be seen below.

- Site No. 335358117114501, located approximately one mile to the northwest of the project site, reported groundwater at a depth of approximately 172 feet below ground surface (bgs) in 2001.

Regional groundwater data from the California Water Data Library (DWR, 2021) for locations within a one-mile radius of the project sites was reviewed to evaluate the current and historical groundwater levels. Two sites were found with available groundwater data and can be seen below.

- Station No. 338982N1171940W001, located approximately one mile to the northwest of the project site, reported groundwater at depths ranging between 38 and 69 feet bgs from 2013 to 2021.
- Station No. 338995N117958W001, located approximately one mile to the northwest of the project site, reported groundwater at depths ranging between 30 and 61 feet bgs from 2011 to 2021.

Based on the absence of groundwater during boring operations at the Moreno Valley College site, as well as current and historical data, groundwater is expected to be deeper than 51.5 feet bgs. It should be noted that the groundwater level could vary depending upon the seasonal precipitation and possible groundwater pumping activity in each site vicinity. Shallow perched groundwater may be present locally, particularly following precipitation or irrigation events.

Norco College Campus

Groundwater was not encountered during the investigation in borings BH-03, BH-04, and BH-06; however, groundwater was encountered in BH-05 at 30.7 feet bgs.

For comparison, regional groundwater data from the GeoTracker database (SWRCB, 2021) for locations within a one-mile radius of the project sites was reviewed to evaluate the current and historical groundwater levels. Three sites were found with available groundwater data and can be seen below.

- Thrifty Oil #338 (T0606500206), located approximately 2,100 feet to the southeast of the project site, reported groundwater at depths ranging between 25 and 34 feet bgs from 1991 to 2021.
- Mobil St. Anthony (T0606500393), located approximately 2,300 feet to the northeast of the project site, reported groundwater at depths ranging between 18 and 29 feet bgs from 2001 to 2012.
- Shell Hamner (T0606520856), located approximately 4,200 feet to the southeast of the project site, reported groundwater at depths ranging between 25 and 38 feet bgs from 2003 to 2013.

Regional groundwater data from the USGS National Water Information System (USGS, 2021) for locations within a one-mile radius of the project sites was reviewed to evaluate the current and historical groundwater levels and no data was available.

Regional groundwater data from the California Water Data Library (DWR, 2021) for locations within a one-mile radius of the project sites was reviewed to evaluate the current and historical groundwater levels and no data was available.

Based on the presence of groundwater during boring operations, as well as current and historical data, groundwater is expected to be present around 30 feet bgs. It should be noted that the groundwater level could vary depending upon the seasonal precipitation and possible groundwater pumping activity in each site vicinity. Shallow perched groundwater may be present locally, particularly following precipitation or irrigation events.

6.3 Expansive Soils

Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures or concrete slabs supported on grade. Depending on the extent and location below finish subgrade, expansive soils can have a detrimental effect on structures.

Based on the laboratory test results, the expansion indices of the upper 5 feet of both sites soils were 1 and 9, corresponding to very low expansion potentials.

6.4 Collapse Potential

Soil deposits subjected to collapse/hydro-consolidation generally exist in regions of moisture deficiency. Collapsible soils are generally defined as soils that have potential to suddenly decrease in volume upon increase in moisture content even without an increase in external loads. Moreover, some soils may have a different degree of collapse/hydro-consolidation based on the amount of proposed fill or structure loads. Soils susceptible to collapse/ hydro-consolidation include wind-blown silt, weakly cemented sand, and silt where the cementing agent is soluble (e.g. soluble gypsum, halite), alluvial or colluvial deposits within semi-arid to arid climate, and certain weathered bedrock above the groundwater table.

Granular soils may have a potential to collapse upon wetting in arid climate regions. Collapse/hydro-consolidation may occur when the soluble cements (carbonates) in the soil matrix dissolve, causing the soil to densify from its loose/low density configuration from deposition.

The degree of collapse of a soil can be defined by the collapse potential value, which is expressed as a percent of collapse of the total sample using the Collapse Potential Test (ASTM D4546). According to the ASTM guideline, the severity of collapse potential is commonly evaluated by the following Table No. 1, *Collapse Potential Values*.

Table No. 1, Collapse Potential Values

Collapse Potential Value (%)	Severity of Problem
0	None
0.1 to 2	Slight
2.1 to 6.0	Moderate
6.0 to 10.0	Moderately Severe
>10	Severe

Based on the laboratory test results (collapse potential of 2.0 percent at a depth of 2.5 feet bgs at MVC and 1.9 percent at NC), a slight problem is anticipated at the sites. Collapse potential distress is typically considered a concern when collapse potential is over 2% (LA County, 2013).

6.5 Excavatability

The surface and subsurface soil materials at the sites are expected to be excavatable by conventional heavy-duty earth moving and trenching equipment. <u>Difficult excavation will be encountered due to the presence of gravel, cobbles, boulders and bedrock.</u>

The phrase "conventional heavy-duty excavation equipment" is intended to include commonly used equipment such as excavators and trenching machines. It does not include hydraulic hammers ("breakers"), jackhammers, blasting, or other specialized equipment and techniques used to excavate hard earth materials. Selection of an appropriate excavation equipment model should be done by an experienced earthwork contractor and may require test excavations in representative areas.

6.6 Subsurface Variations

Based on results of the subsurface exploration and our experience, some variations in the continuity and nature of subsurface conditions within the project sites should be anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations.

7.0 ENGINEERING GEOLOGY

The regional and local geology within the proposed project area are discussed below.

7.1 Regional Geology

The Norco and Moreno Valley College sites lie in the Chino Basin and Perris Block, respectively, and are centrally located within the Peninsular Ranges Geomorphic Province adjacent to the Transverse Ranges province.

The Peninsular Ranges Geomorphic Province consists of a series of northwest-trending mountain ranges and valleys bounded on the north by the San Bernardino and San Gabriel Mountains, on the west by the Los Angeles Basin, and on the south by the Pacific Ocean.

The province is a seismically active region characterized by a series of northwest-trending strike-slip faults. The most prominent of the nearby fault zones include the San Andreas, Elsinore, and San Jacinto fault zones which have been known to be active during Quaternary time.

Topography within the province is generally characterized by broad alluvial valleys separated by linear mountain ranges. This northwest-trending linear fabric is created by the regional faulting within the granitic basement rock of the Southern California Batholith. Broad, linear, alluvial valleys have been formed by erosion of these principally granitic mountain ranges.

The Chino Basin is a broad alluvial valley bounded by the San Gabriel Mountains on the north, the San Bernardino Mountains on the east and northeast, the Santa Ana Mountains on the southwest, and the Puente Hills on the west. The thickness of the alluvium is more than 800 feet in the central area of the basin with a maximum thickness of 1,300 feet near the Riverside area.

The Perris Block is a relatively stable structural block bounded by the active Elsinore and San Jacinto fault zones to the west and east, and the Chino and Temecula basins to the north and south, respectively. The Perris Block has low relief and is roughly rectangular in shape.

7.2 Local Geology

Local geology for each college campus is presented below.

Moreno Valley College Campus
Review of geologic mapping indicates that the Moreno Valley College site is underlain locally by very old (late to middle Pleistocene aged) alluvial-fan deposits. These alluvial-fan deposits primarily consist of moderately to well consolidated silt, sand, gravel, and conglomerate. This site may be underlain at some depth by heterogeneous (Cretaceous aged) granitic rocks derived from the Peninsular Ranges Batholith (Morton and Miller, 2006).

Norco College Campus
Review of geologic mapping indicates that the Norco College site is underlain locally by old (late to middle Pleistocene) alluvial-fan deposits. These alluvial-fan deposits primarily consist of moderately to well consolidated silt, sand, and gravel. Portions of the project site are also underlain with various bedrock units including sedimentary rocks of the Norco area (QTn) and Micropegmatite granite (Kmp). The sedimentary rock (QTn) consist of early Pleistocene to late Pliocene aged conglomerate and the micropegmatite granite (Kmp) consists of Cretaceous aged granite with micropegmatitic texture (Morton and Miller, 2006).

8.0 FAULTING AND SEISMICITY

The approximate distance and seismic characteristics of nearby faults as well as seismic design coefficients are presented in the following subsections.

8.1 Faulting

The proposed sites are situated in a seismically active region. As is the case for most areas of Southern California, ground-shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project sites. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the sites.

The project sites are not located within a currently mapped State of California Earthquake Fault Zone for surface fault rupture. The sites are also not located within an Alquist-Priolo Earthquake Fault Zone, no faults are located within 1,000 feet from the sites. So, sites are not considered susceptible to surface fault rupture hazards.

8.2 CBC Seismic Design Parameters

Seismic parameters based on the 2019 California Building Code (CBSC, 2019) and ASCE 7-16 are provided in the following table. These parameters were determined using the generalized coordinates and the Seismic Design Maps ATC online tool.

Table No. 2, CBC Seismic Design Parameters

Seismic Parameters	MVC	NC
Site Coordinates	33.886083N, 117.197391W	33.922312N 117.563179W
Site Class	D	D
Risk Category	II	II
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_S	1.548g	1.543g
Mapped 1-second Spectral Response Acceleration, S_1	0.6g	0.6g
Site Coefficient (from Table 11.4-1), F_a	1.0	1.0
Site Coefficient (from Table 11.4-2), F_v	1.7	1.7
MCE 0.2-sec period Spectral Response Acceleration, S_{MS}	1.548g	1.543g
MCE 1-second period Spectral Response Acceleration, S_{M1}	1.020g	1.020g
Design Spectral Response Acceleration for short period S_{DS}	1.032g	1.029g
Design Spectral Response Acceleration for 1-second period, S_{D1}	0.680g	0.680g
Site Modified Maximum Peak Ground Acceleration, PGA_M	0.723g	0.719g

8.3 Secondary Effects of Seismic Activity

In general, secondary effects of seismic activity include surface fault rupture, soil liquefaction, landslides, lateral spreading, and settlement due to seismic shaking, tsunamis, seiches, and earthquake-induced flooding. The site-specific potential for each of these seismic hazards is discussed in the following sections.

Surface Fault Rupture: The project sites are not located within a currently designated State of California or Riverside County Earthquake Fault Zone (CGS, 2007; Riverside County, 2021). There are no known active faults projecting toward or extending across the project sites. The potential for surface rupture resulting from the movement of nearby major faults is not known with certainty but is considered low.

Liquefaction: Liquefaction is defined as the phenomenon in which a cohesionless soil mass within the upper 50 feet of the ground surface suffers a substantial reduction in its shear strength, due the improvement of excess pore pressures. During earthquakes, excess pore pressures in saturated soil deposits may develop as a result of induced cyclic shear stresses, resulting in liquefaction.

Soil liquefaction generally occurs in submerged granular soils and non-plastic silts during or after strong ground shaking. There are several general requirements for liquefaction to occur and they are as follows.

- Soils must be submerged.
- Soils must be loose to medium-dense.
- Ground motion must be intense.
- Duration of shaking must be sufficient for the soils to lose shear resistance.

Based on review of hazard maps, the Moreno Valley and Norco College sites are located within Riverside County liquefaction zones determined to have a liquefaction potential of low and high, respectively. Based on the absence of groundwater at Moreno Valley college site, liquefaction potential is considered to be low.

Groundwater was encountered at Norco College sites at depth of 30.7 feet bgs; however, high blow counts and bedrocks (at depth of around 15 feet bgs) were observed at the site. Therefore, liquefaction potential is considered to be low. This should be verified during final design phase.

Landslides: Seismically induced landslides and slope failures are common occurrences during or soon after large earthquakes. Due to the close proximity of local foothills to the Moreno Valley College site, the potential for seismically induced landslides affecting the proposed site is considered to be low to moderate. Due to the flat nature of the Norco College site, the potential for seismically induced landslides affecting the proposed site is considered to be low.

Lateral Spreading: Seismically induced lateral spreading involves primarily lateral movement of earth materials over underlying materials which are liquefied due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. Due to the low and high risk of liquefaction for the Moreno Valley and Norco College sites, the risk of lateral spreading is considered low and high, respectively.

Tsunamis: Tsunamis are large waves generated in open bodies of water by fault displacement or major ground movement. Due to the inland location of the sites, tsunamis are not considered to be a risk.

Seiches: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. There are no enclosed bodies of water immediately near the project sites. Seiching is not considered to be a risk during construction.

Earthquake-Induced Flooding: Dams or other water-retaining structures may fail as a result of large earthquakes. The project sites are not located within a Riverside County designated dam inundation zone (Riverside County, 2021). The risk for earthquake-induced flooding to affect the project sites is considered low.

9.0 PRELIMINARY CONCLUSION AND RECOMMENDATIONS

Preliminary recommendations for the project are presented in the following sections.

9.1 General

These recommendations are based on the results of our field exploration, laboratory tests, our experience with similar projects, and data evaluation as presented in the preceding sections. These recommendations may require modification by the geotechnical consultant based on observation of the actual field conditions during grading.

Prior to the start of construction, all existing underground utilities and appurtenances should be located at the project sites. Such utilities should either be protected in-place or removed and replaced during construction as required by the project specifications. All excavations should be conducted in such a manner as not to cause loss of bearing and/or lateral support of existing utilities and structure (if any).

All debris, surface vegetation, deleterious material, and surficial soils containing roots and perishable materials should be stripped and removed from the site. Deleterious material, including large particles and debris generated during excavation, should not be placed as fill.

The final bottom surfaces of all excavations should be observed and approved by the project geotechnical consultant prior to placing any fill. Based on these observations, localized areas may require remedial grading deeper than indicated herein. Therefore, some variations in the depth and lateral extent of excavation recommended in this report should be anticipated.

9.2 Remedial Grading

Footings (if used) and concrete pad should be uniformly supported by compacted fill. In order to provide uniform support, structural areas should be overexcavated, scarified, and recompacted as follows.

Table No. 3, Overexcavation Depths

Structure/Pavement	Minimum Excavation Depth
Footings/Concrete Pad	2 feet below footing/pad bottom or 3 feet below existing ground surface, whichever is deeper

The overexcavation should extend to at least 3 feet beyond the footprint of the footing/concrete pad.

If isolated pockets of very soft, loose, eroded, or pumping soil are encountered, the unstable soil should be excavated as needed to expose undisturbed, firm, and unyielding soils.

The contractor should determine the best manner to conduct the excavations, such that there are no losses of bearing and/or lateral support to the existing structures or utilities (if any).

9.3 On-site Soil as Fill Material

Based on the field investigation and laboratory test results, we anticipate that the on-site alluvial soils may be utilized as engineered fill once debris, vegetation, and large particles (>3 inches) have been segregated, providing that they can be adequately moisture conditioned.

9.4 Preliminary Foundation Design Parameters

Soil types and parameters are almost identical for all sites. Possible foundation types and preliminary design parameters are presented below.

<u>Shallow Foundation</u>

The design of the shallow foundations may be based on the parameters presented in the table below.

Table No. 4, Preliminary Foundation Parameters

Parameter	Value
Minimum continuous spread footing width	18 inches
Minimum isolated footing width	18 inches
Minimum continuous or isolated footing depth of embedment below lowest adjacent grade	18 inches
Allowable net bearing capacity	2,000 psf

The actual footing dimensions and reinforcement should be based on structural design. The allowable bearing capacity can be increased by 500 pounds per square foot (psf) with each foot of additional embedment and 100 psf with each foot of additional width up to a maximum of 3,000 psf.

The net allowable bearing values indicated above are for the dead loads and frequently applied live loads and are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity. If normal code requirements are applied for design, the above vertical bearing value may be increased by 33 percent for short duration loadings, which will include loadings induced by wind or seismic forces.

The total settlement of shallow footings designed as recommended above, from static structural loads and short-term settlement of properly compacted fill is anticipated to be 1 inch or less. The static differential settlement can be taken as equal to one-half of the static total settlement.

Mat Foundation

The concrete pad may be designed as mat foundation. The modulus of subgrade reaction (k) for design of flexible mat foundation was estimated from the available soil compressibility data and published charts. For design of flexible mat foundation, the following equation may be used.

$$k= k_1[(B+1)/2B]^2$$

Where:
k= vertical modulus of subgrade reaction for mat foundation, kips per cubic feet
k_1= 200 kcf, normalized modulus of subgrade reaction for 1-square-foot footing
B= foundation width, feet

Other necessary parameters (modulus of elasticity and Poisson's ratio) for mat foundation design are as follows.

$$E= 33\ W_c^{1.5}\ f_c^{\ 0.5}\ \text{psi}$$

Where, E = Modulus of Elasticity of Concrete (psi)

W_c = weight of concrete (pcf)
f_c = compressive strength of concrete at 28 days (psi)
ν = 0.35, Poisson's Ratio

An allowable net bearing capacity of 3,000 psf may be used for mat foundations founded on compacted native soil. The mat should be reinforced with top and bottom steel, as appropriate, to provide structural continuity and to permit spanning of local irregularities. The mat foundation dimensions, and reinforcement should be based on structural design. For design purposes, the self-weight of the mat foundation can be negligible.

Driven Pile Foundation

Based on the shallow dense to very dense silty sands and presence of gravel, cobbles, boulders and bedrock, driven friction piles may be difficult to install or may encounter refusal during driving. If used, the piles may be designed for compression using an allowable skin friction value of 110 psf per foot for combined dead plus live loads. The piles should have a minimum diameter of at least 18 inches and extend at least 10 feet below the existing ground surface. Piles should have a minimum center-to-center spacing of at least three pier diameters.

This value may be increased by 33 percent for transient wind and seismic forces. For pier design in tension, 50 percent of the recommended allowable skin friction values in compression may be used. For design purpose, the upper at least 2 feet of the soils should be neglected in determining the skin friction. Pile tip resistance will not be considered in the design of friction pile. The equivalent lateral earth pressure equal to 220 pounds per square foot per foot of depth may be used for the design.

Total settlements for properly designed and constructed piles should be less than 0.5 inch.

Drilled Pier Foundation

Solar panel can be supported on drilled pier foundations deriving their support primarily through skin friction. The piers may be designed for compression using an allowable skin friction value of 110 psf per foot for combined dead plus live loads. The piers should have a minimum diameter of at least 18 inches and extend at least 10 feet below the existing ground surface. Piers should have a minimum center-to-center spacing of at least three pier diameters.

This value may be increased by 33 percent for transient wind and seismic forces. For pier design in tension, 50 percent of the recommended allowable skin friction values in compression may be used. For design purpose, the upper at least 3 feet of the soils should be neglected in determining the skin friction. Pier tip resistance will not be considered in the design of friction pier. The equivalent lateral earth pressure equal to 220 pounds per square foot per foot of depth may be used for the design.

Total settlements for properly designed and constructed piles should be less than 0.5 inch.

9.5 Lateral Earth Pressures and Resistance to Lateral Loads

In the following subsections, the lateral earth pressures and resistance to lateral loads are estimated by using on-sites native soils strength parameters obtained from laboratory testing.

9.5.1 Active Earth Pressures

The active earth pressure behind any buried wall or foundation depends primarily on the allowable wall movement, type of backfill materials, backfill slopes, wall or foundation inclination, surcharges, and any hydrostatic pressures. The lateral earth pressures are presented in the following tables.

Table No. 5, Active and At-Rest Earth Pressures

Loading Conditions	Lateral Earth Pressure (psf)
Active earth conditions (wall is free to deflect at least 0.001 radian)	45
At-rest (wall is restrained)	65

These pressures assume a level ground surface around the structure for a distance greater than the structure height, no surcharge, and no hydrostatic pressure.

If water pressure is allowed to build up behind the walls, the active pressures should be reduced by 50 percent and added to a full hydrostatic pressure to compute the design pressures against the walls.

9.5.2 Passive Earth Pressure

Resistance to lateral loads can be assumed to be provided by a combination of friction acting at the base of foundations and by passive earth pressure. A coefficient of friction of 0.35 between formed concrete and soil may be used with the dead load forces. An allowable passive earth pressure of 220 psf per foot of depth may be used for the sides of the footing poured against recompacted native soils. A factor of safety of 1.5 was applied in calculating passive earth pressure. The maximum value of the passive earth pressure should be limited to 2,000 psf.

Vertical and lateral bearing values indicated above are for the total dead loads and frequently applied live loads. If normal code requirements are applied for design, the above vertical bearing and lateral resistance values may be increased by 33 percent for short duration loading, which will include the effect of wind or seismic forces.

Due to the low overburden stress of the soil at shallow depth, the upper 1 foot of passive resistance should be neglected unless the soil is confined by pavement or slab.

9.6 Soil Corrosivity

Two representative soil samples were evaluated for corrosivity with respect to common construction materials such as concrete and steel. The test results are presented in Appendix B, *Laboratory Testing Program* and general recommendations pertaining to soil corrosivity are presented below.

The sulfate contents of the sampled soils correspond to American Concrete Institute (ACI) exposure category S0 for these sulfate concentrations (ACI 318-14, Table 19.3.1.1). No concrete type restrictions are specified for exposure category S0 (ACI 318-14, Table 19.3.2.1). A minimum compressive strength of 2,500 psi is recommended.

We anticipate that concrete structures such as footings, slab, and concrete pad will be exposed to moisture from precipitation and irrigation. Based on the site locations and the results of chloride testing of the sites soils, we do not anticipate that concrete structures will be exposed to external sources of chlorides, such as deicing chemicals, salt, brackish water, or seawater. ACI specifies exposure category C1 where concrete is exposed to moisture, but not to external sources of chlorides (ACI 318-14, Table 19.3.1.1). ACI provides concrete design recommendations in ACI 318-14, Table 19.3.2.1, including a compressive strength of at least 2,500 psi and a maximum chloride content of 0.3 percent.

According to Romanoff, 1957, the following table provides general guideline of soil corrosion based on electrical resistivity.

Table No. 6, Correlation Between Resistivity and Corrosion

Soil Resistivity (ohm-cm) per Caltrans CT 643	Corrosivity Category
Over 10,000	Mildly corrosive
2,000 – 10,000	Moderately corrosive
1,000 – 2,000	corrosive
Less than 1,000	Severe corrosive

The measured value of the minimum electrical resistivity of the sample when saturated was 6,466 ohm-cm (Moreno Valley College) and 19,890 ohm-cm (Norco College). This indicates that the soils tested are moderately corrosive to mildly corrosive to ferrous metals in contact with the soil. Converse does not practice in the area of corrosion consulting. If needed, a qualified corrosion consultant should provide appropriate corrosion mitigation measures for any ferrous metals in contact with the site soils.

9.7 Preliminary Construction Recommendations

Since this is preliminary report, no site-specific construction recommendations are presented at this time.

10.0 CLOSURE

This report is prepared for the project described herein and is intended for use solely by Riverside Community College District (RCCD) and their authorized agents for preliminary information. Our findings and recommendations were obtained in accordance with generally accepted professional principles practiced in geotechnical engineering. We make no other warranty, either expressed or implied.

Converse Consultants is not responsible or liable for any claims or damages associated with interpretation of available information provided to others. Field exploration identifies actual soil conditions only at those points where samples are taken, when they are taken. Data derived through sampling and laboratory testing is extrapolated by Converse employees who render an opinion about the overall soil conditions. Actual conditions in areas not sampled may differ. In the event that changes to the project occur, or additional, relevant information about the project is brought to our attention, the recommendations contained in this report may not be valid unless these changes and additional relevant information are reviewed and the recommendations of this report are modified or verified in writing. In addition, the recommendations can only be finalized by observing actual subsurface conditions revealed during construction. Converse cannot be held responsible for misinterpretation or changes to our recommendations made by others during construction.

As the project evolves, continued consultation and construction monitoring by a qualified geotechnical consultant should be considered an extension of geotechnical investigation services performed to date. The geotechnical consultant should review plans and specifications to verify that the recommendations presented herein have been appropriately interpreted, and that the design assumptions used in this report are valid. Where significant design changes occur, Converse may be required to augment or modify the recommendations presented herein. Subsurface conditions may differ in some locations from those encountered in the explorations, and may require additional analyses and, possibly, modified recommendations.

Design recommendations given in this report are based on the assumption that it will be used only as primary. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

11.0 REFERENCES

AMERICAN CONCRETE INSTITUTE (ACI), 2014, Building Code Requirements for Structural Concrete (ACI 318-14) and Commentary, October 2014.

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE), 2017, Minimum Design Loads for Buildings and Other Structures, SEI/ASCE Standard No. 7-16, dated 2017.

CALIFORNIA BUILDING STANDARDS COMMISSION (CBSC), 2019, California Building Code (CBC).

CALIFORNIA DEPARTMENT OF WATER RESOURCES (DWR), 2021, Water Data Library (http://wdl.water.ca.gov/waterdatalibrary/), accessed October 7, 2021.

CALIFORNIA GEOLOGICAL SURVEY (CGS), 2007, Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Faulting Zoning Act with Index to Earthquake Fault Zone Maps, Special Publication 42, revised 2007.

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD (SWRCB), 2021, GeoTracker database (http://geotracker.waterboards.ca.gov/), accessed on October 17, 2021.

DAS, B.M., 2011, Principles of Foundation Engineering, Seventh Edition, published by Global Engineering, 2011.

COUNTY OF LOS ANGELES, 2013, Manual for the Preparation of Geotechnical Reports, July 1, 2013.

MORTON, D.M. and MILLER, F.K., 2006, Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangles, California, U.S. Geological Survey Open-File Report 2006-1217, scale 1:100,000.

RIVERSIDE COUNTY, 2021, Riverside County GIS - Map My County (https://gis.countyofriverside.us/Html5Viewer/?viewer=MMC_Public), accessed on October 7, 2021.

ROMANOFF, MELVIN, 1957, Underground Corrosion, National Bureau of Standards Circular 579, dated April 1957.

U.S. DEPARTMENT OF THE NAVY, 1986, NAVFAC DM 7.01: Soil Mechanics, Naval Facilities Engineering Command, Alexandria, Virginia.

U.S. GEOLOGICAL SURVEY (USGS), 2021, National Water Information System: Web Interface (http://nwis.waterdata.usga.gov/nwis/gwlevels), accessed on October 7, 2021.

U. S. GEOLOGIC SURVEY (USGS), 2008 National Seismic Hazard Maps – Source Parameters, https://earthquake.usgs.gov/cfusion/hazfaults_2008_search.

Appendix A

Field Exploration

APPENDIX A

FIELD EXPLORATION

Our field investigation included sites reconnaissance and a subsurface exploration program consisting of drilling soil borings. During the sites reconnaissance, the surface conditions were noted, and the borings were marked at locations approved by Mehran Mohtasham with RCCD. The approximate boring locations were established in the field with reference to existing surroundings, street centerlines and other visible features. The locations should be considered accurate only to the degree implied by the method used.

Two exploratory boring (BH-01 and BH-02) were drilled on September 22, 2021, to investigate the subsurface conditions at Moreno Valley College campus. The borings were drilled to depths between 17.7 feet and 51.5 feet below existing ground surface (bgs).

Four borings (BH-03 through BH-06) were drilled on September 22 and 23, 2021 to investigate the subsurface conditions at two sites within Norco Community College campus. The borings were drilled to depths between 7.5 and 50.2 feet below existing ground surface (bgs). Borings (BH-03 and BH-04) were terminated at depths of 7.5 and 10.5 feet bgs due to obstruction in cobbles/boulders and possible bedrock.

The borings were advanced using a truck-mounted drill rig equipped with 8-inch diameter hollow-stem augers for soils sampling. Encountered materials were continuously logged by a Converse geologist and classified in the field by visual classification in accordance with the Unified Soil Classification System. Where appropriate, the field descriptions and classifications have been modified to reflect laboratory test results.

Relatively undisturbed samples were obtained using California Modified Samplers (2.4 inches inside diameter and 3.0 inches outside diameter) lined with thin sample rings. The steel ring sampler was driven into the bottom of the borehole with successive drops of a 140-pound driving weight falling 30 inches. Blow counts at each sample interval are presented on the boring logs. Samples were retained in brass rings (2.4 inches inside diameter and 1.0 inch in height) and carefully sealed in waterproof plastic containers for shipment to the Converse laboratory. Bulk samples of typical soil types were also obtained.

Standard Penetration Testing (SPT) was also performed in accordance with the ASTM Standard D1586 test method at 10-foot intervals beginning at 20 feet bgs in borings BH-01 and BH-05 using a standard (1.4 inches inside diameter and 2.0 inches outside diameter) split-barrel sampler. The mechanically driven hammer for the SPT sampler was 140 pounds, falling 30 inches for each blow. The recorded blow counts for every 6 inches for a total of 1.5 feet of sampler penetration are shown on the Logs of Borings.

The exact depths at which material changes occur cannot always be established accurately. Unless a more precise depth can be established by other means, changes in material conditions that occur between drive samples are indicated on the logs at the top of the next drive sample.

Following the completion of logging and sampling, the borings were backfilled with soil cuttings and compacted by pushing down with augers using the drill rig weight. If construction is delayed, the surface may settle over time. We recommend the owner monitor the boring locations and backfill any depressions that might occur or provide protection around the boring locations to prevent trip and fall injuries from occurring near the area of any potential settlement.

For a key to soil symbols and terminology used in the boring logs, refer to Drawing No. A-1a through A-1c, *Unified Soil Classification and Key to Boring Log Symbols*. For logs of borings, see Drawings No. A-2 through A-7, *Logs of Borings*.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

FIELD AND LABORATORY TESTS

C	Consolidation (ASTM D 2435)
CL	Collapse Potential (ASTM D 4546)
CP	Compaction Curve (ASTM D 1557)
CR	Corrosion, Sulfates, Chlorides (CTM 643-99; 417; 422)
CU	Consolidated Undrained Triaxial (ASTM D 4767)
DS	Direct Shear (ASTM D 3080)
EI	Expansion Index (ASTM D 4829)
M	Moisture Content (ASTM D 2216)
OC	Organic Content (ASTM D 2974)
P	Permeablility (ASTM D 2434)
PA	Particle Size Analysis (ASTM D 6913 [2002])
PI	Liquid Limit, Plastic Limit, Plasticity Index (ASTM D 4318)
PL	Point Load Index (ASTM D 5731)
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value (CTM 301)
SE	Sand Equivalent (ASTM D 2419)
SG	Specific Gravity (ASTM D 854)
SW	Swell Potential (ASTM D 4546)
TV	Pocket Torvane
UC	Unconfined Compression - Soil (ASTM D 2166) Unconfined Compression - Rock (ASTM D 7012)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850)
UW	Unit Weight (ASTM D 2937)

BORING LOG SYMBOLS

DRILLING METHOD SYMBOLS

Auger Drilling | Mud Rotary Drilling | Dynamic Cone or Hand Driven | Diamond Core

SAMPLE TYPE

STANDARD PENETRATION TEST Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method

DRIVE SAMPLE 2.42" I.D. sampler (CMS).

DRIVE SAMPLE No recovery

BULK SAMPLE

GROUNDWATER WHILE DRILLING

GROUNDWATER AFTER DRILLING

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Districtwide Solar Planning Initiative Project
Moreno Valley and Norco College Campuses
Cities of Moreno Valley and Norco, Riverside County, California
For: Riverside Community College District

Project No. 21-81-232-01

Drawing No. A-1a

Project ID: 21-81-232-01.GPJ; Template: KEY

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	SPT Blow Counts	Pocket Penetrometer (tsf)	CA Sampler	Torvane (tsf)	Field Approximation
Very Soft	<0.25	< 2	<0.25	<3	<0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	2 - 4	0.25 - 0.50	3 - 6	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	5 - 8	0.50 - 1.0	7 - 12	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	9 - 15	1.0 - 2.0	13 - 25	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	16 - 30	2.0 - 4.0	26 - 50	1.0 - 2.0	Readily indented by thumbnail
Hard	>4.0	>30	>4.0	>50	>2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N_{60}- Value (blows / foot)	CA Sampler
Very Loose	<4	<5
Loose	4- 10	5 - 12
Medium Dense	11 - 30	13 - 35
Dense	31 - 50	36 - 60
Very Dense	>50	>60

MOISTURE

Descriptor	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OF PROPORTION OF SOILS

Descriptor	Criteria
Trace (fine)/ Scattered (coarse)	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor		Size
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION/ Induration

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

NOTE: This legend sheet provides descriptions and associated criteria for required soil description components only. Refer to Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010), Section 2, for tables of additional soil description components and discussion of soil description and identification.

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Districtwide Solar Planning Initiative Project
Moreno Valley and Norco College Campuses
Cities of Moreno Valley and Norco, Riverside County, California
For: Riverside Community College District

Project No. 21-81-232-01

Drawing No. A-1b

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

BEDDING SPACING

Description	Thickness/Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in - 1 ft
Thinly Bedded	1 in - 4 in
Very Thinly Bedded	1/4 in - 1 in
Laminated	Less than 1/4 in

WEATHERING DESCRIPTORS FOR INTACT ROCK

	Diagnostic Features					
	Chemical Weathering-Discoloration-Oxidation		Mechanical Weathering and Grain Boundary Conditions	Texture and Leaching		
Description	Body of Rock	Fracture Surfaces		Texture	Leaching	General Characteristics
Fresh	No discoloration, not oxidized	No discoloration or oxidation	No separation, intact (tight)	No change	No leaching	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull	Minor to complete discoloration or oxidation of most surfaces	No visible separation, intact (tight)	Preserved	Minor leaching of some soluble minerals	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty"; feldspar crystals are "cloudy"	All fracture surfaces are discolored or oxidized	Partial separation of boundaries visible	Generally preserved	Soluble minerals may be mostly leached	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation, grain boundary conditions	All fracture surfaces are discolored or oxidized; surfaces friable	Partial separation, rock is friable; in semi-arid conditions, granitics are disaggregated	Texture altered by chemical disintegration (hydration, argillation)	Leaching of soluble minerals may be complete	Dull sound when struck with hammer; usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures or veinlets. Rock is significantly weakened.
Decomposed	Discolored of oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay		Complete separation of grain boundaries (disaggregated)	Resembles a soil; partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes".

PERCENT CORE RECOVERY (REC)

$$\frac{\Sigma \text{ Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100$$

ROCK QUALITY DESIGNATION (RQD)

$$\frac{\Sigma \text{ Length of intact core pieces} \geq 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100$$

RQD* indicates soundness criteria not met.

ROCK HARDNESS

Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with a pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily with a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

Fracturing Spacing

Description	Observed Fracture Density
Unfractured	No fractures
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

BEDROCK CLASSIFICATION AND KEY TO BORING LOG AND TEST PIT SYMBOLS

Log of Boring No. BH-01 (MVC)

Dates Drilled: 9/22/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1656 Depth to Water (ft, bgs): NOT ENCOUNTERED

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

ALLUVIUM:

SILTY SAND (SM): fine to coarse-grained, scattered gravel up to 1" in maximum dimension, indurated, medium dense to dense, moist, brown.

Depth (ft)	Description	Samples: Drive	Samples: Bulk	Blows	Moisture (%)	Dry Unit Wt. (pcf)	Other
0–10			Bulk				CR, CP
2.5		Drive		23/24/26	3	124	
5		Drive		15/23/35	7	121	DS, PA
7.5		Drive		10/15/19	6	120	
10		Drive		8/19/31	7	123	
15		Drive		6/6/7	3	113	
20	- loose	Drive		1/2/3	4		
25	- medium dense	Drive		12/12/23	4	116	
30	- loose	Drive		5/5/6	3		

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Project No. **21-81-232-01**

Drawing No. **A-2a**

Log of Boring No. BH-01 (MVC)

Dates Drilled: 9/22/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1656 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine to coarse-grained, medium dense, moist, brown.			12/13/14	6	118	
40		- loose			3/4/6	7		
45		**BEDROCK** **GRANITE (Khg):** fine to medium-grained, moderately to intensely weathered, moderately desiccated, hard to very hard **Excavate as: SILTY SAND (SM):** fine to medium-grained, moist, brown.			27/50@6"	8	124	
50					14/14/18	6		
		End of boring at 51.5 feet bgs. No groundwater encountered. Borehole backfilled with soil cuttings and compacted by pushing down with auger using the drill rig weight on 09/22/2021.						

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Drawing No. A-2b

Log of Boring No. BH-02 (MVC)

Dates Drilled: 9/22/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 1659 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		ALLUVIUM: **SILTY SAND (SM):** fine to coarse-grained, scattered gravel up to 1" in maximum dimension, indurated, very dense, moist, brown.						EI, PA
					39/50@3"	4	116	CL
5					27/50@6"	5	126	
					50@6"	6	112	
10					14/14/14	5	126	
15		**BEDROCK** **GRANITE (Khg):** fine to medium-grained, moderately to intensely weathered, moderately desiccated, very hard **Excavate as: SILTY SAND (SM):** fine to medium-grained, moist, brown.			30/42/50@5"	4	106	
					38/50@2"	5	116	

Boring terminated at 17.7 feet bgs due to obstruction in bedrock.
No groundwater encountered.
Borehole backfilled with soil cuttings and compacted by pushing down with auger using the drill rig weight on 09/22/2021.

Log of Boring No. BH-03 (NC)

Dates Drilled: 9/22/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 695 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		ALLUVIUM: **SILTY SAND (SM):** fine to medium-grained, indurated, medium dense, moist, yellowish brown.						
					7/19/9	2	101	
5					15/33/31	3	104	
		- more sand content			9/13/14	4	104	
10		**BEDROCK** **Norco Formation (QTn): SILTY SANDSTONE** fine to coarse-grained, moderately to intensely weathered, moderately desiccated, very hard **Excavate as: SILTY SAND (SM):** fine to coarse-grained, moist, brown.			50@5"	9	94	dist.

Boring terminated at 10.5 feet bgs due to obstruction in bedrock.
No groundwater encountered.
Borehole backfilled with soil cuttings and compacted by pushing down with auger using the drill rig weight on 09/22/2021.

Log of Boring No. BH-04 (NC)

Dates Drilled: 9/22/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 709 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		ALLUVIUM: **SILTY SAND (SM):** fine to coarse-grained, scattered gravel up to 3" and cobbles up to 4" in maximum dimension, indurated, very dense, moist, brown.						PA
					50@3"			NR
5					50@5"			NR
					50@1"			NR
		Boring terminated at 7.5 feet bgs due to presence of cobbles/boulders. No groundwater encountered. Borehole backfilled with soil cuttings and compacted by pushing down with auger using the drill rig weight on 09/22/2021.						

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Drawing No. **A-5**

Log of Boring No. BH-05 (NC)

Dates Drilled: 9/23/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 652 Depth to Water (ft, bgs): 30.7

SUMMARY OF SUBSURFACE CONDITIONS

This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.

Depth (ft)	Summary of Subsurface Conditions	Samples: Drive	Samples: Bulk	Blows	Moisture (%)	Dry Unit Wt. (pcf)	Other
0	**ALLUVIUM:** **SILTY SAND (SM):** fine to coarse-grained, indurated, very dense, moist, reddish-brown.		X				CP, EI
		X	X	31/50@4"	6	106	
5		X	X	17/34/40	5	124	DS
	- few cobbles up to 4" in maximum dimension	X	X	27/50@5"	6	106	
10	- scattered gravel up to 1" in maximum dimension, medium dense	X		13/18/28	5	103	
	- trace clay						
15	**BEDROCK** **Norco Formation (QTn): SILTY SANDSTONE** fine to coarse-grained, moderately weathered, slightly desiccated, very hard **Excavate as: SAND WITH SILT (SP-SM):** fine to coarse-grained, moist, yellowish brown.	X		16/17/50@5"	9	128	
20		X	X	38/50@2"	3		
25		X		50@3"	4	111	
30	water was encountered at 30.7 feet bgs,	X		50@2"	3		

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Drawing No. A-6a

Log of Boring No. BH-05 (NC)

Dates Drilled: 9/23/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 652 Depth to Water (ft, bgs): 30.7

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES: DRIVE	SAMPLES: BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		BEDROCK **Norco Formation (QTn): SILTY SANDSTONE** fine to coarse-grained, moderately weathered, slightly desiccated, very hard **Excavate as: SAND WITH SILT (SP-SM):** fine to coarse-grained, moist, yellowish brown.			50@2"	3	106	
40					50@4"	7		
45					50@2"	9	122	
50					50@2"	11		
		End of boring at 50.2 feet bgs. Groundwater was encountered at 30.7 bgs. Borehole backfilled with soil cuttings and compacted by pushing down with auger using the drill rig weight on 09/23/2021.						

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Project No. **21-81-232-01**

Drawing No. **A-6b**

Log of Boring No. BH-06 (NC)

Dates Drilled: 9/23/2021 Logged by: Mahmoud Suliman Checked By: Robert Gregorek

Equipment: 8" HOLLOW STEM AUGER Driving Weight and Drop: 140 lbs / 30 in

Ground Surface Elevation (ft): 648 Depth to Water (ft, bgs): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the Boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		ALLUVIUM (Qal): **SILTY SAND (SM):** fine to coarse-grained, medium dense, moist, reddish brown.						CR, PA
					9/14/24	4	120	CL
5					15/30/37	7	116	
		- trace clay			13/20/28	6	126	
10					15/22/41	7	124	
15		**BEDROCK** **Norco Formation (QTn): SILTY SANDSTONE** fine to coarse-grained, moderately weathered, slightly desiccated, very hard **Excavate as: SILTY SAND (SM):** fine to coarse-grained, moist, yellowish brown.			50@6"	10	112	
20		End of boring at 20.2 feet bgs. No groundwater encountered. Borehole backfilled with soil cuttings and compacted by pushing down with auger using the drill rig weight on 09/23/2021.			50@3"			

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Project No. 21-81-232-01

Drawing No. A-7

Appendix B

Laboratory Testing Program

APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their physical properties and engineering characteristics. The amount and selection of tests were based on the geotechnical parameters required for this project. Test results are presented herein and on the Logs of Borings, in Appendix A, *Field Exploration*. The following is a summary of the various laboratory tests conducted for this project.

In-Situ Moisture Content and Dry Density

In-situ dry density and moisture content tests were performed on relatively undisturbed ring samples, in accordance with ASTM Standard D2216 and D2937 to aid soils classification and to provide qualitative information on strength and compressibility characteristics of the site soils. For test results, see the Logs of Borings in Appendix A, *Field Exploration.*

Expansion Index

Two representative bulk samples were tested to evaluate the expansion potential in accordance with ASTM Standard D4829. The test results are presented in the following table.

Table No. B-1, Expansion Index Test Results

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-02/ MVC	0-5	Silty Sand (SM)	1	Very Low
BH-05/ NC	0-5	Silty Sand with Gravel (SM)	9	Very Low

Note:
- MVC: Moreno Valley College
- NC: Norco College

Soil Corrosivity

Two representative soil samples were tested to determine minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests was to determine the corrosion potential of sites soils when placed in contact with common construction materials. The tests were performed by AP Engineering and Testing, Inc. (Pomona, CA) in accordance with Caltrans Test Methods 643, 422 and 417. Test results are presented in the following table.

Table No. B-2, Summary of Soil Corrosivity Test Results

Boring No.	Depth (feet)	pH	Soluble Sulfates (CA 417) (ppm)	Soluble Chlorides (CA 422) (ppm)	Min. Resistivity (CA 643) (Ohm-cm)
BH-01/ MVC	0-5	8.1	36	23	6,466
BH-06/ NC	0-5	7.4	23	21	19,890

Collapse

To evaluate the moisture sensitivity (collapse/swell potential) of the encountered soils, two collapse tests were performed in accordance with the ASTM Standard D4546 laboratory procedure. The sample was loaded to approximately 2 kips per square foot (ksf), allowed to stabilize under load, and then submerged. The test results are presented in the following table.

Table No. B-3, Collapse Test Results

Boring No.	Depth (feet)	Soil Classification	Percent Swell (+) Percent Collapse (-)	Collapse Potential
BH-02/ MVC	2.5-4.0	Silty Sand (SM)	-2.0	Slight
BH-06/ NC	2.5-4.0	Silty Sand (SM)	-1.9	Slight

Grain-Size Analyses

To assist in classification of soils, mechanical grain-size analyses were performed on four select samples in accordance with the ASTM Standard D6913 test method. Grain-size curves are shown in Drawing No. B-1, *Grain Size Distribution Results* and results are presented in the below table.

Table No. B-4, Grain Size Distribution Test Results

Boring No.	Depth (ft)	Soil Classification	% Gravel	% Sand	%Silt	%Clay
BH-01/ MVC	5-10	Silty Sand (SM)	2.0	64.9	33.1	
BH-02/ MVC	0-5	Silty Sand (SM)	2.0	71.7	26.3	
BH-04/ NC	0-5	Silty Sand (SM)	5.0	80.2	14.8	
BH-06/ NC	0-5	Silty Sand (SM)	0.0	66.8	33.2	

Maximum Density and Optimum Moisture Content

Laboratory maximum dry density-optimum moisture content relationship tests were performed on two representative bulk samples. The tests were conducted in accordance with the ASTM Standard D1557 test method. The tests results are presented in Drawing No. B-2, *Moisture-Density Relationship Results,* and are summarized in the following table.

Table No B-5, Summary of Moisture-Density Relationship Results

Boring No.	Depth (feet)	Soil Description	Optimum Moisture (%)	Maximum Density (lb/cft)
BH-01/ MVC	0-5	Silty Sand (SM), Brown	6.0	132.0
BH-05/ NC	0-5	Silty Sand (SM), Reddish Brown	5.5	133.0

Direct Shear

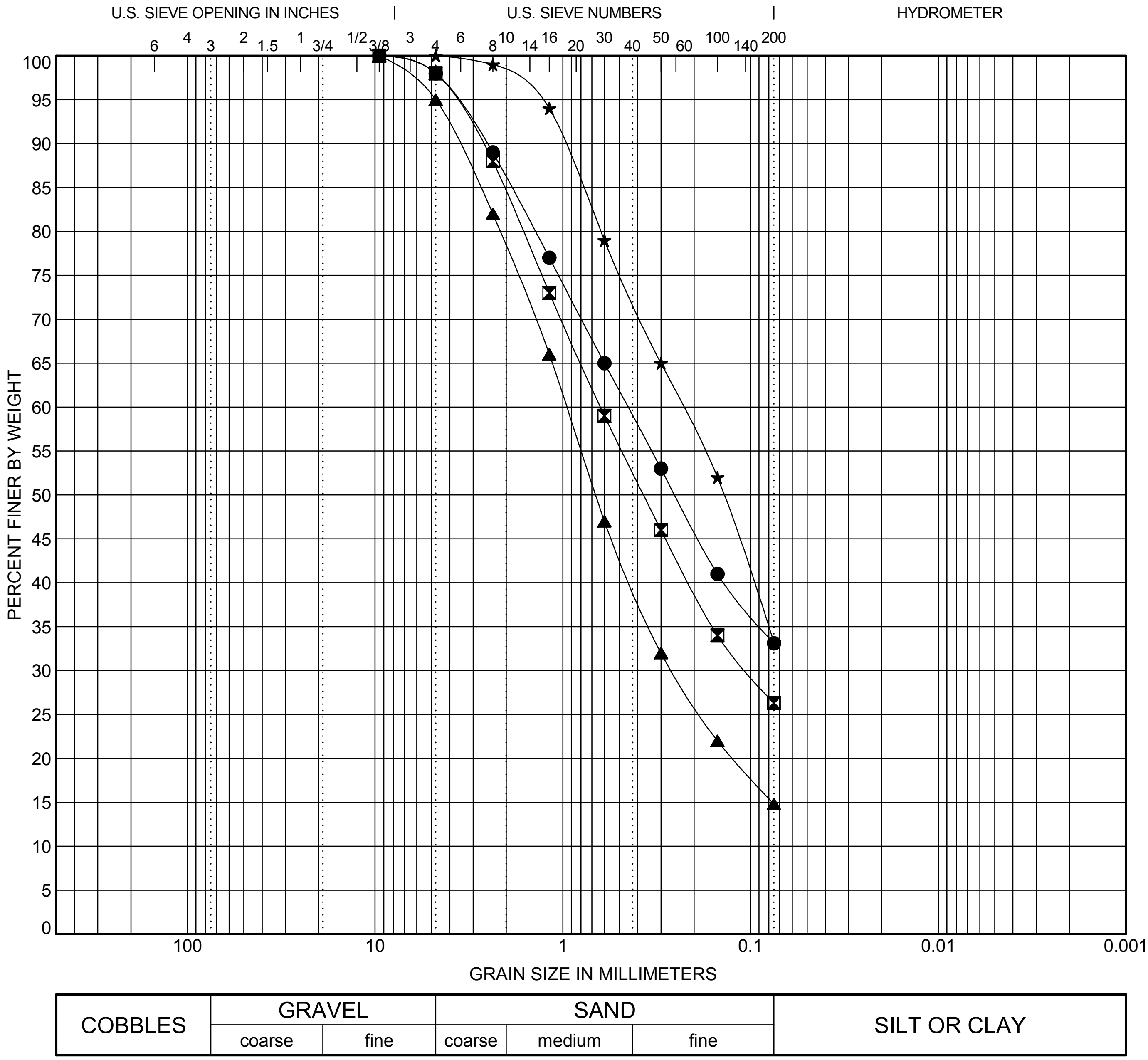
Two direct shear tests were performed on relatively undisturbed representative ring samples under soaked moisture condition in accordance with the ASTM D3080 procedure. For each test, three samples contained in brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The samples were then sheared at a constant strain rate of 0.02 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test data, including sample density and moisture content, see Drawings No. B-3 and B-4*, Direct Shear Test Results,* and the following table.

Table No. B-6, Summary of Direct Shear Test Results

Boring No.	Depth (feet)	Soil Description	Peak Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-01/ MVC	5.0-6.5	Silty Sand (SM)	31	190
BH-05/ NC	5.0-6.5	Silty Sand (SM)	29	70

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period.



	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH-01**	**5-10**	**SILTY SAND (SM)**					
⊠	**BH-02**	**0-5**	**SILTY SAND (SM)**					
▲	**BH-04**	**0-5**	**SILTY SAND (SM)**					
★	**BH-06**	**0-5**	**SILTY SAND (SM)**					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH-01**	**5-10**	**9.5**	**0.449**			**2.0**	**64.9**	**33.1**	
⊠	**BH-02**	**0-5**	**9.5**	**0.63**	**0.105**		**2.0**	**71.7**	**26.3**	
▲	**BH-04**	**0-5**	**9.5**	**0.953**	**0.261**		**5.0**	**80.2**	**14.8**	
★	**BH-06**	**0-5**	**9.5**	**0.23**			**0.0**	**66.8**	**33.2**	

GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

Districtwide Solar Planning Initiative Project
Moreno Valley and Norco College Campuses
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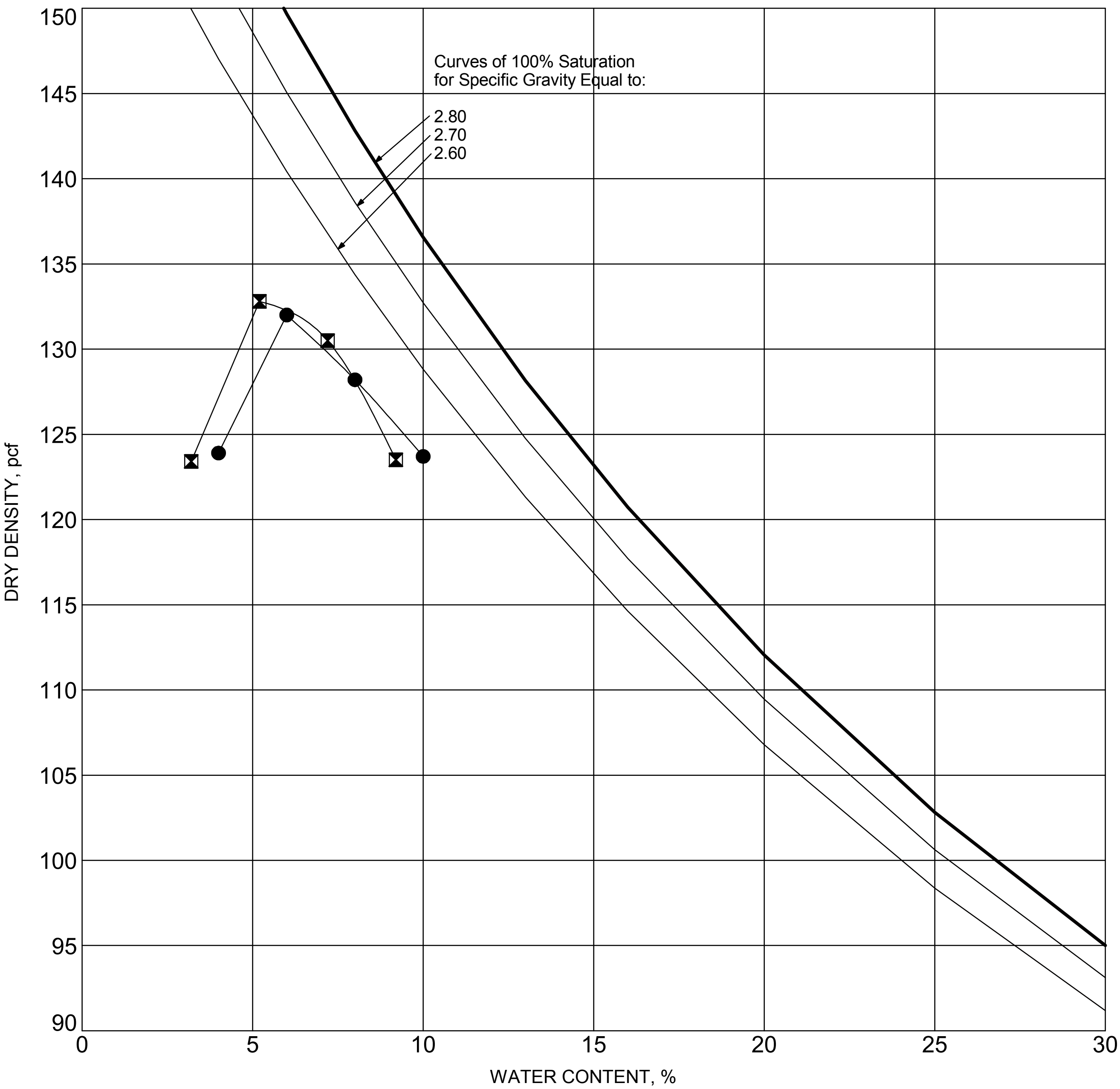
Project No. **21-81-232-01**

Drawing No. **B-1**



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	**BH-01**	**0-5**	**SILTY SAND (SM), BROWN**	**D1557- A**	**6.0**	**132.0**
⧗	**BH-05**	**0-5**	**SILTY SAND (SM), REDDISH BROWM**	**D1557- A**	**5.5**	**133.0**

MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

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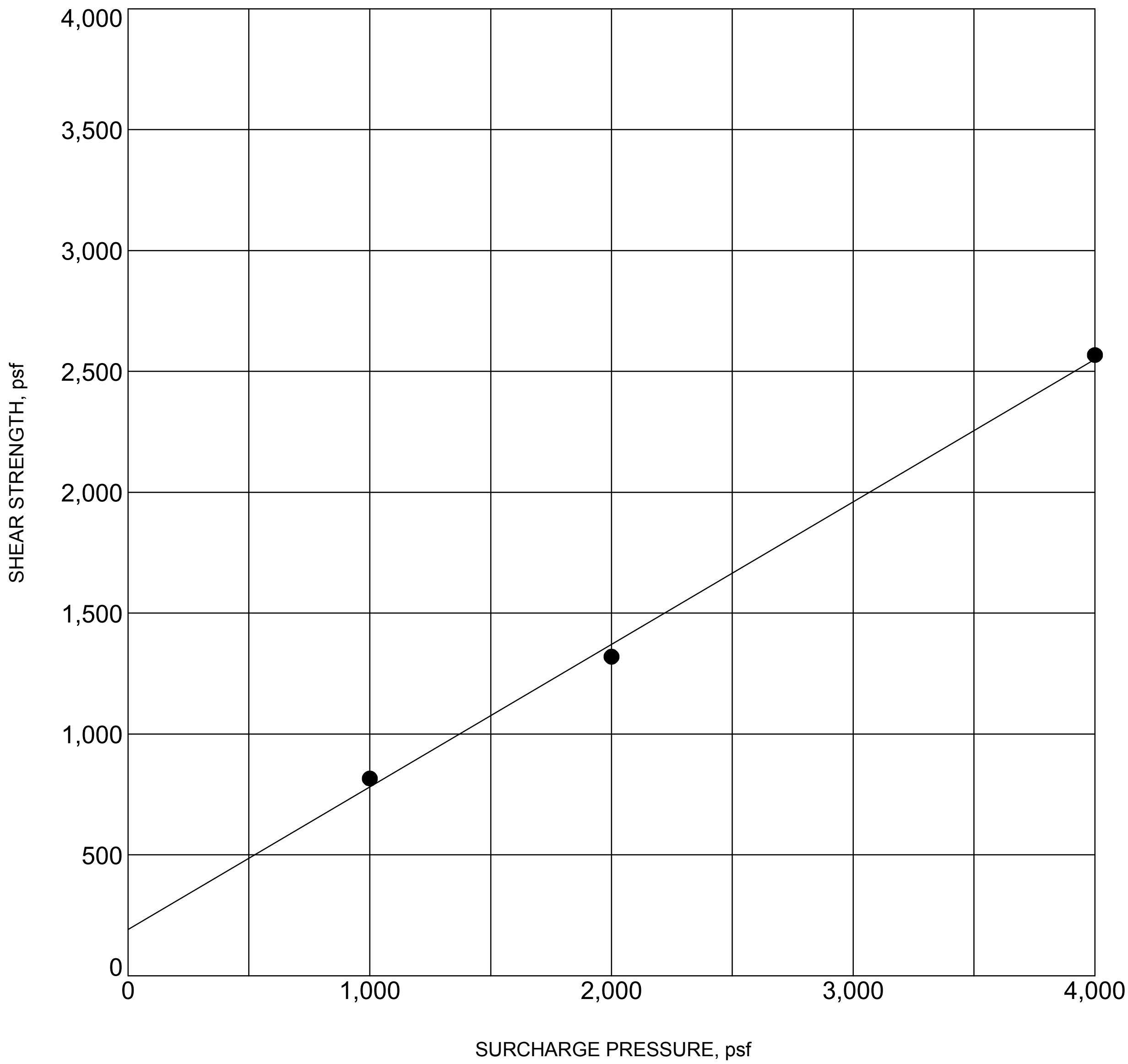
For: Riverside Community College District

Project No. **21-81-232-01**

Drawing No. **B-2**

Project ID: 21-81-232-01.GPJ; Template: COMPACTION



BORING NO.	:	**BH-01**	DEPTH (ft)	:	**5.0-6.5**
DESCRIPTION	:	**SILTY SAND (SM)**			
COHESION (psf)	:	**190**	FRICTION ANGLE (degrees):		**31**
MOISTURE CONTENT (%)	:	**6.1**	DRY DENSITY (pcf)	:	**125.0**

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Districtwide Solar Planning Initiative Project
Moreno Valley and Norco College Campuses
Cities of Moreno Valley and Norco, Riverside County, California
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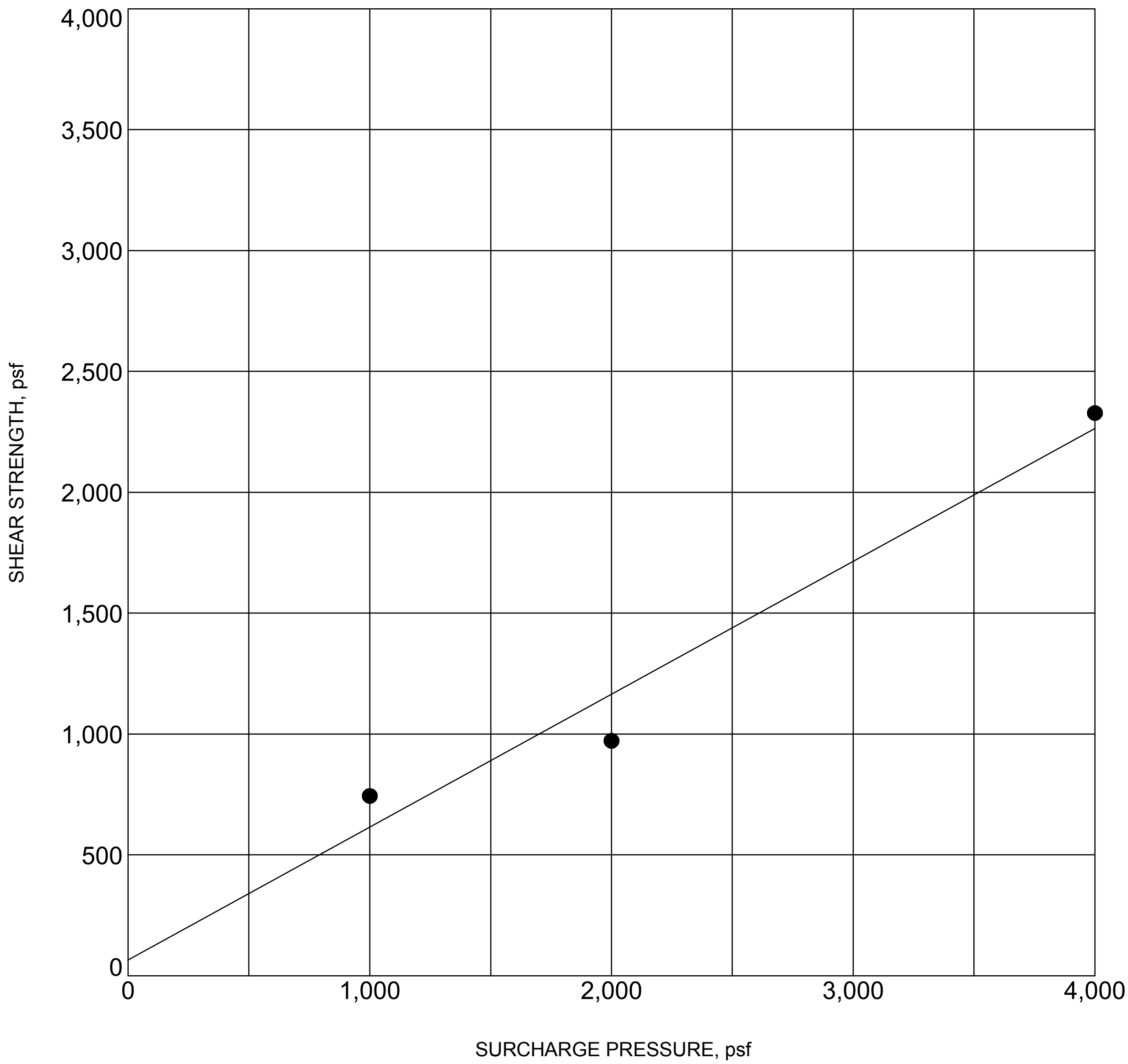
Project No. **21-81-232-01**

Drawing No. **B-3**



BORING NO. :	**BH-05**	DEPTH (ft) :	**5.0-6.5**
DESCRIPTION :	**SILTY SAND (SM)**		
COHESION (psf) :	**70**	FRICTION ANGLE (degrees):	**29**
MOISTURE CONTENT (%) :	**4.9**	DRY DENSITY (pcf) :	**124.2**

NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Districtwide Solar Planning Initiative Project
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Project No. **21-81-232-01**

Drawing No. **B-4**

Appendix D
Noise

APPENDIX D-1

Field Noise Measurement Data Sheets

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT RCCD SOLAR PLAN PROJECT# 14415
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 7/13/22 END DATE 7/13/22
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 89 F HUMIDITY 35 % R.H. WIND CALM LIGHT MODERATE
WINDSPD 12 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-P3 TYPE 1 2 SERIAL # 130927046
CALIBRATOR REED R8090 SERIAL # –
CALIBRATION CHECK PRE-TEST ___ dBA SPL POST-TEST ___ dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST1	97-112	14:51	15:06							

COMMENTS
READING TAKEN AT NORTH END OF GARDEN AT NORCO SENIOR CENTER (2690 CLARK AVE);

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: N/A DIST. TO RDWY C/L OR EOP: –
TRAFFIC COUNT DURATION: – MIN SPEED ___ MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE

COUNT 2 (OR RDWY 2) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES POSSIBLY DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVERSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: DISTANT LOW HUM FROM ~~[illegible]~~ COOLING UNITS AT NORCO CITY FACILITIES TO THE NORTH

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 4668; 4669; 4670
OTHER COMMENTS / SKETCH

N

FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT RCCD SOLAR PLAN PROJECT # 14415
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 7/13/22 END DATE 7/13/22
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 89 F HUMIDITY 35 % R.H. WIND CALM LIGHT MODERATE
WINDSPD 12 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-P3 TYPE 1 2 SERIAL # 130927046
CALIBRATOR REED R8090 SERIAL # –
CALIBRATION CHECK PRE-TEST ___ dBA SPL POST-TEST ___ dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST2	113-128	15:07	15:23							

COMMENTS
READING TAKEN ~~TOWARD~~ ON THE SOUTH END OF GARDEN AT NORCO SENIOR CENTER (2690 CLARK AVE)

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: N/A DIST. TO RDWY C/L OR EOP: –
TRAFFIC COUNT DURATION: ___ MIN SPEED ___ MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2) NB/EB	SB/WB	NB/EB	SB/WB
AUTOS									
MED TRKS									
HVY TRKS									
BUSES									
MOTRCLS									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT POSSIBLE RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: DISTANT LOW HUM FROM ~~[illegible]~~ COOLING UNITS AT NORCO CAT FACILITIES TO THE NORTH

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 4674; 4675; 4676; 4677
OTHER COMMENTS / SKETCH

ST1

Rec 97 to 112	Slow Response		dBA weighting		2.0 dB resc
Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin
7/13/2022 14:51	1.0 min	42.3	60.1	47	40.3
7/13/2022 14:52	1.0 min	43	60.8	49.1	40.3
7/13/2022 14:53	1.0 min	42.8	60.6	47.6	40.2
7/13/2022 14:54	1.0 min	44.9	62.7	57	39.9
7/13/2022 14:55	1.0 min	44	61.8	54.7	40.8
7/13/2022 14:56	1.0 min	42.7	60.5	50.9	40.8
7/13/2022 14:57	1.0 min	42.9	60.7	48	40.2
7/13/2022 14:58	1.0 min	42.7	60.5	47.6	41
7/13/2022 14:59	1.0 min	41.6	59.4	45.4	40.1
7/13/2022 15:00	1.0 min	42.7	60.5	49.3	39.4
7/13/2022 15:01	1.0 min	44.2	62	55.3	40.2
7/13/2022 15:02	1.0 min	40.5	58.3	42.6	39.4
7/13/2022 15:03	1.0 min	42.2	60	52.1	39.8
7/13/2022 15:04	1.0 min	46.7	64.5	58.5	41.2
7/13/2022 15:05	1.0 min	42.9	60.7	52.6	40.4
7/13/2022 15:06	44 sec	44.4	60.8	50.8	40.6
		L_{eq}		L_{max}	L_{min}
		43.3		58.5	39.4

ST2

Rec 113 to 128	Slow Response		dBA weighting		2.0 dB resc
Date hh:mm:ss	LeqPeriod	Leq	SEL	Lmax	Lmin
7/13/2022 15:07	1.0 min	49.6	67.4	61.2	41.8
7/13/2022 15:08	1.0 min	48.2	66	58.2	40.7
7/13/2022 15:09	1.0 min	41.8	59.6	43.2	40.5
7/13/2022 15:10	1.0 min	43.9	61.7	49	40.8
7/13/2022 15:11	1.0 min	42.7	60.5	45.9	40.5
7/13/2022 15:12	1.0 min	47.6	65.4	51.7	41.3
7/13/2022 15:13	1.0 min	43.3	61.1	48.5	41.2
7/13/2022 15:14	1.0 min	42.1	59.9	44	40.3
7/13/2022 15:15	1.0 min	44.4	62.2	53.5	40.2
7/13/2022 15:16	1.0 min	43	60.8	50.5	39.9
7/13/2022 15:17	1.0 min	42.1	59.9	49.3	39.5
7/13/2022 15:18	1.0 min	41.8	59.6	46	39.6
7/13/2022 15:19	1.0 min	41.2	59	46.8	39.3
7/13/2022 15:20	1.0 min	48.1	65.9	53.4	40.4
7/13/2022 15:21	1.0 min	43.7	61.5	51.2	40.8
7/13/2022 15:22	34 sec	46.4	61.7	54.5	42.1
		L_{eq}		L_{max}	L_{min}
		45.1		61.2	39.3

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: NORCO COLLEGE KINESIOLOGY BUILDING   PROJECT #: 13705
SITE ID: ST2 (ST3)
SITE ADDRESS: OBSERVER(S): DAVID ORTEGA
START DATE: 10/12/2021   END DATE: 10/12/2021
START TIME: 10:48 AM   END TIME: 11:03 AM

METEOROLOGICAL CONDITIONS
TEMP: 71° F   HUMIDITY: 12 % R.H.   WIND: CALM LIGHT MODERATE
WINDSPD: <1 MPH   DIR. N NE S SE S SW W NW   VARIABLE STEADY GUSTY
SKY: SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT: Piccolo II   TYPE 1 2   SERIAL #: 1200
CALIBRATOR: Rion NC-74   SERIAL #: 34678576
CALIBRATION CHECK: PRE-MEASUREMENT 94 dBA SPL   POST-MEASUREMENT 94 dBA SPL   WINDSCRN: YES

SETTINGS: A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
18-34	10:48AM	11:03AM	49.1	67.1	43.3	44.6	45.8	48.8	

COMMENTS:
Measurement taken adjacent to Applied Technology building, on lawn. Students/staff conversations audible throughout measurement. Leq constant around 44.5 dBA.

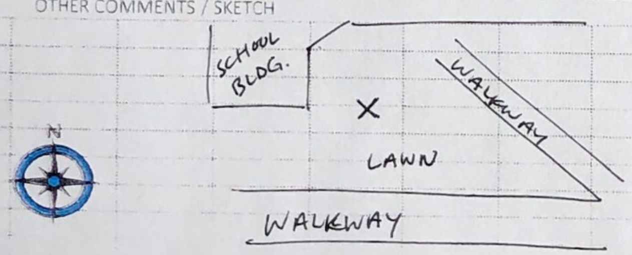
SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: DIST. TO RDWY C/L OR EOP:
TRAFFIC COUNT DURATION: ___ MIN   SPEED   ___ MIN   SPEED

	DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE		NB/EB	SB/WB	NB/EB	SB/WB
COUNT 1 (OR RDWY 1)	AUTOS						COUNT 2 (OR RDWY 2)				
	MED TRKS										
	HVY TRKS										
	BUSES										
	MOTRCLS										

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD. GARDENERS/LANDSCAPING NOISE
OTHER: HVAC from adjacent/nearby buildings audible. Aircraft fly-overs are audible. Fly-over @ 10:52 = 60 dBA Leq.

DESCRIPTION / SKETCH
TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS: YES
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT MORENO VALLEY COLLEGE WC PROJECT # 11413
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 11/8/18 END DATE 11/8/18
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 76 F HUMIDITY 15 % R.H. WIND ~~CALM~~ LIGHT MODERATE
WINDSPD MPH DIR. N NE S SE S SW W NW ~~VARIABLE~~ STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 2 SERIAL # 14031700041
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-4 (ST4)	7-8	12:28	12:43	64.6	85.3	50.5				

COMMENTS READING TAKEN AT BACK OF PROPERTY AT 26502 ~~[illegible]~~ CLYDESDALE LANE ON KRAMERIA AVE, (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON KRAMERIA AVE; SECONDARY IS TRAFFIC ON CAMULLA DR;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: 45' FROM KRAMERIA AVE.
TRAFFIC COUNT DURATION: 15 MIN SPEED MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	87			
MED TRKS	1			
HVY TRKS	0			
BUSES	0			
MOTRCLS	0			

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 2745; 2746; 2747; 2748; 2749; 2750; 2751
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT MORENO VALLEY COLLEGE WC PROJECT # 11413
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 11/8/18 END DATE 11/8/18
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 75 F HUMIDITY 20 % R.H. WIND CALM LIGHT MODERATE
WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 2 SERIAL # 14031700(4
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-1 (ST5)	3-4	11:42	11:57	54.5	67.1	51				

COMMENTS
READING TAKEN ON CAMPUS ON PATH BETWEEN SCIENCE & TECH BUILDING AND STUDENT PARKING LOT (AT END OF COLLEGE DRIVE); PRIMARY NOISE SOURCE: CARS IN MV COLLEGE PARKING LOT; SECONDARY: CONVERSATIONS

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: APX 100' TO COLLEGE DR. END
TRAFFIC COUNT DURATION: — MIN SPEED MIN SPEED

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	NB/EB	SB/WB	NB/EB	SB/WB
COUNT 1 (OR RDWY 1) / COUNT 2 (OR RDWY 2)									
AUTOS									
MED TRKS									
HVY TRKS									
BUSES									
MOTRCLS									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 2734; 2735; 2736; 2737; 2738;
OTHER COMMENTS / SKETCH

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT MORENO VALLEY COLLEGE WC PROJECT # 11413
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 11/8/18 END DATE 11/8/18
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 75 F HUMIDITY 20 % R.H. WIND CALM LIGHT MODERATE
WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 2 SERIAL # 140317004
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-2 (ST6)	1-2	11:22	11:37	58.3	75.2	51.9				

COMMENTS
READING TAKEN ON CAMPUS IN QUAD IN FRONT OF STUDENT ACADEMIC SERVICES BUILDING; PRIMARY NOISE SOURCE IS PASSING CONVERSATIONS;

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: ~~[illegible]~~ CONVERSATIONS
ROADWAY TYPE: N/A DIST. TO RDWY C/L OR EOP: N/A
TRAFFIC COUNT DURATION: — MIN SPEED MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2) NB/EB	SB/WB	NB/EB	SB/WB
AUTOS									
MED TRKS									
HVY TRKS									
BUSES									
MOTRCLS									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN HARD SOFT MIXED FLAT OTHER:
PHOTOS 2729; 2730; 2731; 2732
OTHER COMMENTS / SKETCH

N

APPENDIX D-2

Construction Noise Modeling
Input and Output

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at occupied building, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = 1

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Barrier / Topo Insertion Loss (dB)*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
Site Preparation	Grader	1	40	85		160		74.9	1	60	71
	Dozer	1	40	82		160		71.9	1	60	68
	Tractor	1	40	84	Tractors/Loaders/Back	160		73.9	1	60	70
									Total for Site Preparation Phase:		**74.5**
Grading	Grader	1	40	85		160		74.9	1	60	71
	Roller	1	20	80		160		69.9	1	60	63
	Tractor	1	40	84	Tractors/Loaders/Back	160		73.9	1	60	70
									Total for Grading Phase:		**73.8**
Boring/Conduit	Tractor	1	40	84	Crawler Tractors	500		64.0	1	60	60
	Excavator	1	40	81		500		61.0	1	60	57
	Roller	1	20	80		500		60.0	1	60	53
	Man Lift	1	20	75	Rough Terrain Forklifts	500		55.0	1	60	48
									Total for Boring/Conduit Phase:		**62.5**
Racking/Other Mechanicals	Auger Drill Rig	1	20	84	Bore/Drill Rigs	375		66.5	1	60	60
	Tractor	1	40	84	Off-Highway Tractor	375		66.5	1	60	63
	Man Lift	1	20	75	Rough Terrain Forklifts	375		57.5	1	60	51
									Total for Racking/Other Mechanicals Phase:		**64.5**
PV Panel Installation	Man Lift	1	20	75	Rough Terrain Forklifts	160		64.9	1	60	58
									Total for PV Panel Installation Phase:		**57.9**
Other Electrical	Man Lift	1	20	75	Aerial Lift	160		64.9	1	60	58
	Grader	1	40	85		160		74.9	1	60	71
	Front End Loader	1	40	79	Skid Steer Loaders	160		68.9	1	60	65
									Total for Other Electrical Phase:		**72.1**

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at occupied building, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = 1

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Barrier / Topo Insertion Loss (dB)*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
Site Preparation	Grader	1	40	85		130		76.7	1	60	73
	Dozer	1	40	82		130		73.7	1	60	70
	Tractor	1	40	84	Tractors/Loaders/Back	130		75.7	1	60	72
									Total for Site Preparation Phase:		**76.3**
Grading	Grader	1	40	85		130		76.7	1	60	73
	Roller	1	20	80		130		71.7	1	60	65
	Tractor	1	40	84	Tractors/Loaders/Back	130		75.7	1	60	72
									Total for Grading Phase:		**75.6**
Boring/Conduit	Tractor	1	40	84	Crawler Tractors	450		64.9	1	60	61
	Excavator	1	40	81		450		61.9	1	60	58
	Roller	1	20	80		450		60.9	1	60	54
	Man Lift	1	20	75	Rough Terrain Forklifts	450		55.9	1	60	49
									Total for Boring/Conduit Phase:		**63.4**
Racking/Other Mechanicals	Auger Drill Rig	1	20	84	Bore/Drill Rigs	365		66.7	1	60	60
	Tractor	1	40	84	Off-Highway Tractor	365		66.7	1	60	63
	Man Lift	1	20	75	Rough Terrain Forklifts	365		57.7	1	60	51
									Total for Racking/Other Mechanicals Phase:		**64.7**
PV Panel Installation	Man Lift	1	20	75	Rough Terrain Forklifts	130		66.7	1	60	60
									Total for PV Panel Installation Phase:		**59.7**
Other Electrical	Man Lift	1	20	75	Aerial Lift	130		66.7	1	60	60
	Grader	1	40	85		130		76.7	1	60	73
	Front End Loader	1	40	79	Skid Steer Loaders	130		70.7	1	60	67
									Total for Other Electrical Phase:		**73.9**

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at occupied building, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = 1

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Barrier / Topo Insertion Loss (dB)*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
Site Preparation	Grader	1	40	85		220		72.1	1	60	68
	Dozer	1	40	82		220		69.1	1	60	65
	Tractor	1	40	84	Tractors/Loaders/Back	220		71.1	1	60	67
										Total for Site Preparation Phase:	**71.8**
Grading	Grader	1	40	85		220		72.1	1	60	68
	Roller	1	20	80		220		67.1	1	60	60
	Tractor	1	40	84	Tractors/Loaders/Back	220		71.1	1	60	67
										Total for Grading Phase:	**71.1**
Boring/Conduit	Tractor	1	40	84	Crawler Tractors	220		71.1	1	60	67
	Excavator	1	40	81		220		68.1	1	60	64
	Roller	1	20	80		220		67.1	1	60	60
	Man Lift	1	20	75	Rough Terrain Forklifts	220		62.1	1	60	55
										Total for Boring/Conduit Phase:	**69.6**
Racking/Other Mechanicals	Auger Drill Rig	1	20	84	Bore/Drill Rigs	220		71.1	1	60	64
	Tractor	1	40	84	Off-Highway Tractor	220		71.1	1	60	67
	Man Lift	1	20	75	Rough Terrain Forklifts	220		62.1	1	60	55
										Total for Racking/Other Mechanicals Phase:	**69.1**
PV Panel Installation	Man Lift	1	20	75	Rough Terrain Forklifts	2000		43.0	1	60	36
										Total for PV Panel Installation Phase:	**36.0**
Other Electrical	Man Lift	1	20	75	Aerial Lift	220		62.1	1	60	55
	Grader	1	40	85		220		72.1	1	60	68
	Front End Loader	1	40	79	Skid Steer Loaders	220		66.1	1	60	62
										Total for Other Electrical Phase:	**69.3**

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase at occupied building, per FTA guidance = 80
allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = 1

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Barrier / Topo Insertion Loss (dB)*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
Site Preparation	Grader	1	40	85		890		60.0	1	60	56
	Dozer	1	40	82		890		57.0	1	60	53
	Tractor	1	40	84	Tractors/Loaders/Back	890		59.0	1	60	55
										Total for Site Preparation Phase:	**59.6**
Grading	Grader	1	40	85		890		60.0	1	60	56
	Roller	1	20	80		890		55.0	1	60	48
	Tractor	1	40	84	Tractors/Loaders/Back	890		59.0	1	60	55
										Total for Grading Phase:	**58.9**
Boring/Conduit	Tractor	1	40	84	Crawler Tractors	1200		56.4	1	60	52
	Excavator	1	40	81		1200		53.4	1	60	49
	Roller	1	20	80		1200		52.4	1	60	45
	Man Lift	1	20	75	Rough Terrain Forklifts	1200		47.4	1	60	40
										Total for Boring/Conduit Phase:	**54.9**
Racking/Other Mechanicals	Auger Drill Rig	1	20	84	Bore/Drill Rigs	1225		56.2	1	60	49
	Tractor	1	40	84	Off-Highway Tractor	1225		56.2	1	60	52
	Man Lift	1	20	75	Rough Terrain Forklifts	1225		47.2	1	60	40
										Total for Racking/Other Mechanicals Phase:	**54.2**
PV Panel Installation	Man Lift	1	20	75	Rough Terrain Forklifts	890		50.0	1	60	43
										Total for PV Panel Installation Phase:	**43.0**
Other Electrical	Man Lift	1	20	75	Aerial Lift	890		50.0	1	60	43
	Grader	1	40	85		890		60.0	1	60	56
	Front End Loader	1	40	79	Skid Steer Loaders	890		54.0	1	60	50
										Total for Other Electrical Phase:	**57.2**

Construction Activity	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	*Barrier / Topo Insertion Loss (dB)*	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 1-hour Leq
Site Preparation	Grader	1	40	85		250		71.0	1	60	67
	Dozer	1	40	82		250		68.0	1	60	64
	Tractor	1	40	84	Tractors/Loaders/Back	250		70.0	1	60	66
										Total for Site Preparation Phase:	**70.7**
Grading	Grader	1	40	85		250		71.0	1	60	67
	Roller	1	20	80		250		66.0	1	60	59
	Tractor	1	40	84	Tractors/Loaders/Back	250		70.0	1	60	66
										Total for Grading Phase:	**69.9**
Boring/Conduit	Tractor	1	40	84	Crawler Tractors	180		72.9	1	60	69
	Excavator	1	40	81		180		69.9	1	60	66
	Roller	1	20	80		180		68.9	1	60	62
	Man Lift	1	20	75	Rough Terrain Forklifts	180		63.9	1	60	57
										Total for Boring/Conduit Phase:	**71.4**
Racking/Other Mechanicals	Auger Drill Rig	1	20	84	Bore/Drill Rigs	250		70.0	1	60	63
	Tractor	1	40	84	Off-Highway Tractor	250		70.0	1	60	66
	Man Lift	1	20	75	Rough Terrain Forklifts	250		61.0	1	60	54
										Total for Racking/Other Mechanicals Phase:	**68.0**
PV Panel Installation	Man Lift	1	20	75	Rough Terrain Forklifts	1300		46.7	1	60	40
										Total for PV Panel Installation Phase:	**39.7**
Other Electrical	Man Lift	1	20	75	Aerial Lift	250		61.0	1	60	54
	Grader	1	40	85		250		71.0	1	60	67
	Front End Loader	1	40	79	Skid Steer Loaders	250		65.0	1	60	61
										Total for Other Electrical Phase:	**68.2**

APPENDIX D-3

Operational Noise Modeling Input and Output

RCCD Solar Plan

Operational Noise Analysis

Norco College Campus

Operational Component	Location	Noise Emission Level	Nearest Noise-Sensitive Receiver	Distance (feet)	Resulting Noise Level at Receiver	Notes (references etc.)
2500 kVA step-up transformer	SW corner of solar field	61 dBA at 1 m.	Apartments to the east	375	19.8	Siemens Power Engineering Guide, 4th Edition: Transformers
Inverter	SW corner of solar field	69 dBA at 1 m.	Apartments to the east	375	27.8	STP 150 US; from applicant
			Combined		**28.5**	
BESS	North-central portion of campus	75 dBA at 10 m.	Campus core	170	32.7	Megapack 2; from applicant
200 kVA step-up transformer	southwest corner of campus	48 dBA at 1 m.	Campus core	35	7.4	Siemens Power Engineering Guide, 4th Edition: Transformers

Moreno Valley Campus

Operational Component	Location	Noise Emission Level	Nearest Noise-Sensitive Receiver	Distance (feet)	Resulting Noise Level at 200'	Distance (feet)	Resulting Noise Level at Receiver	Notes (references etc.)
1000 kVA step-up transformer	NW corner of solar field	55 dBA at 1 m.	Single-family residences to the south	200	19.3	1200	3.7	Siemens Power Engineering Guide, 4th Edition: Transformers
Inverter	NW corner of solar field	69 dBA at 1 m.	Single-family residences to the south	200	33.3	1200	17.7	STP 150 US; from applicant
			Combined		**33.5**		**17.9**	
BESS	Northern portion of campus	75 dBA at 10 m.	Campus core	200	51.3	75	39.8	Megapack 2; from applicant
600 kVA step-up transformer	Northern portion of campus at BESS	55 dBA at 1 m.	Campus core	200	19.3	75	7.8	Siemens Power Engineering Guide, 4th Edition: Transformers
200 kVA step-up transformer	southwest corner of campus	48 dBA at 1 m.	Campus core	200	12.3	100	0.0	Siemens Power Engineering Guide, 4th Edition: Transformers
750 kVA step-up transformer	southwest corner of campus	55 dBA at 1 m.	Campus core	200	19.3	100	5.3	Siemens Power Engineering Guide, 4th Edition: Transformers

Appendix E

Tribal Cultural Resources

DUDEK
38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

October 5, 2022 14415

Hussain Agah
Associate Vice Chancellor, Facilities Planning & Development
Riverside Community College District
3801 Market Street, 3rd Floor
Riverside, California 92501

Subject: Phase I Archaeological Resources Assessment for the Riverside Community College District Solar Plan Project, Cities of Norco and Moreno Valley, Riverside County, California

Dear Mr. Agah:

This letter documents the Phase I archaeological resources assessment conducted by Dudek for the Riverside Community College District Solar Plan Project (Project or proposed Project), located within the Cities of Norco and Moreno Valley, Riverside County, California. The present study documents the results of a California Historical Resources Information System (CHRIS) records search conducted at the South Central Coastal Information Center (SCCIC), Native American coordination with the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) review, an archaeological pedestrian survey, an analysis regarding the potential for archaeological resources to be present, as well as management recommendations. The Riverside Community College District (District) is the lead agency responsible for compliance with California Environmental Quality Act (CEQA).

Project Location and Description

The proposed Project is located on two District campuses within Riverside County; Norco College and Moreno Valley College. For the purposes of this report, the two campuses that collectively represent the proposed Project site will be referred to as the Norco College Solar Site and the Moreno Valley College (MVC) Solar Site. The Norco College Solar Site is located within the City of Norco, outside the developed campus center and within mostly undeveloped lands and falls on public land survey system (PLSS) Sections 12 and 13 of Township 3 South, Range 7 West on the *Corona North*, CA 7.5-minute United States Geological Survey (USGS) Quadrangle. The MVC Solar Site is located within the City of Moreno Valley, outside the developed campus center and within mostly undeveloped rural lands, and falls on PLSS Section 28 of Township 3 South, Range 3 West on the *Sunnymead*, CA 7.5-minute USGS Quadrangle. See Figure 1, Project Locations Map, in Appendix A.

The Norco College Solar Site Project component includes the installation of a 2.1- MW, ground-mounted fixed tilt photovoltaic (PV) solar array approximately 6 acres in size and associated underground lines and Battery Energy Storage System (BESS) on the undeveloped hillside to the northeast of the developed Norco College campus. The MVC Solar Site Project component includes the installation of a 0.9-MW ground-mounted fixed tilt PV solar array approximately 2.7 acres in size and associated underground lines on undeveloped land on the easternmost edge of the MVC campus, including a solar switchboard at the northern edge of the PV solar array location. See Figures 2A and 2B, Project Site Maps, in Appendix A.

Current Project design indicates that the depths of ground disturbance for the proposed Project is between 4 to 8 feet (ft) below the existing ground surface for construction activities, including site preparation, grading, paving, boring and conduit installation, installation of racking and other mechanical components PV solar array panel installation and other electrical component installation.

Environmental Setting and Review of Soils

Norco College Solar Site

The Norco College Solar Site is within California's Transverse Ranges geomorphic province, which is defined by an east-west trending series of steep mountain ranges and valleys (California Geological Survey 2002). The transverse ranges include the Santa Ana Mountains to the southwest, the San Jacinto Mountains to the southeast, and the San Gabriel and San Bernardino Mountains to the north. The City of Norco is bound to the north by the Santa Ana River, to the west by the Prado Basin, and to the east and south by the Norco Hills. The topography within the Norco College Solar Site consists of lightly undulating valleys amongst gently rising hills. Elevations within the Norco College Solar Site generally decrease southwest with a high of 683 feet above mean sea level (AMSL) in the northeast to 610 feet AMSL in the southwest (Google 2021).

Present site conditions for the Norco College Solar Site primarily consist of a 6-acre, undeveloped hillside area to the northeast of the main campus that would support a future PV solar array, a BESS component on a developed portion of the main campus, and an EV charger switchboard (and associated AC conduit) in the southwest corner of the main campus. The proposed new 12 kV underground lines are within partially developed and undeveloped/vacant settings. At the location of the proposed 6-acre PV solar array, the underlying terrain lightly slopes northward, with grassland habitat dominating most of the rectangular area. Similar grassland habitat is found to the immediate west, north and south of this area; however, off-campus development further away consists of the multi-structure campus of Naval Sea Systems Command (located to the west) and one- and two-story commercial and office style development in the City of Norco. The proposed BESS component is located on the flat, developed/paved northerly portion of the main campus which currently supports the Main Plant, Operations Center, and campus staff parking. The EV charger switchboard and associated AC conduit are primarily proposed to be located to the immediate west of the Wilfred J. Airey Library and east of campus Parking Lot D. More specifically, the proposed switchboard is proposed in an existing shrub and tree vegetated planting area bordered by concrete sidewalk and paved parking and conduit would be installed beneath existing portions of the nearby parking lot.

According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2021a), four soil types have been identified in the Norco College Solar Site: Cieneba rocky sandy loam and Cienega sandy loam; Delhi fine sand; and Vista coarse sandy loam. The soil series are described below according to their official soil descriptions.

Cieneba Series: Cieneba Series soils consist of very shallow and shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. They occur on hills and mountains at elevations of 500 to 4,000 feet and have slopes of 9 to 85 percent. Vegetation is mainly chaparral and chemise with widely spread foothill pine or oak tree. A typical Cieneba series pedon extends 30 inches below ground surface (bgs). Cieneba rocky sandy loam and Cieneba sandy loam, 15 to 50 percent slopes, eroded is found within the location of the existing 12kV underground line and possible route of the new 12kV underground utility line, respectively.

Delhi Series: Delhi series soils are found on 0 to 15 percent slopes at elevations of 25 to 1,400 feet. They formed in wind-modified alluvium derived from granitic rock sources on floodplains, alluvial fans, and terraces. Principal native plants are buckwheat and a few shrubs and trees. Typical vegetation is annual grasses and forbs. A typical Delhi series pedon extends 70 inches bgs. Delhi fine sand, 2 to 15 percent slopes, wind-eroded is found within the location of the proposed BESS, launching pit, EV charger switchboard/pit, alternating current (AC) conduits, existing 12kV underground line, and the possible route of the new 12kV underground utility line.

Vista Series: Vista series soils are found on hilly slopes at elevations of 400 to 3,900 feet in Southern California and at lower than 3,500 feet elevation in Central California. Slopes range from 2 to 75 percent. The soils formed in material weathered from decomposed granite and other closely related rocks. The natural vegetation is annual grasses and forbs and such shrubs as California sagebrush (*Artemisia californica*), scrub oak (*Quercus berberidifolia*), lilac, chamise, sumac, and flattop buckwheat. A typical Vista series pedon extends 61 inches bgs. Vista coarse sandy loam, 8 to 15 percent slopes, eroded is found within the location of the proposed PV solar array, maintenance road, and portions of the possible route of the new 12kV underground utility line.

A review of the USGS mineral resources (USGS 2021) online spatial data for geology indicates that the Norco College Solar Site is comprised of two types of native soil. The western half of the Norco College Solar Site, including the proposed BESS, EV charger switch board, alternating current (AC) conduits, existing 12kV underground line, and the possible route of the new 12kV underground utility line areas are composed of Mesozoic granitic rocks, unit 2 (Peninsular Ranges) from the middle Jurassic to Late Cretaceous epoch. These formations have low potential to support the presence of buried archaeological resources.

The eastern half of the Norco College Solar Site, including the proposed PV solar array, existing 12kV underground line, and possible route of the new 12kV underground utility line areas are composed of Older Quaternary alluvium and marine deposits from the Pleistocene epoch. Late Pleistocene-era alluvial formations do have the potential to support the presence of buried archaeological resources. These soils are associated with the period of prehistoric human use, as well as represent ongoing processes of development that have potential to preserve cultural material in context, depending on area-specific topographical setting.

MVC Solar Site

The MVC Solar Site is within California's Peninsular Range geomorphic province, which is a prominent natural geomorphic province that extends from the Santa Monica Mountains approximately 900 miles south to the tip of Baja California, Mexico, and is bound to the east by the Colorado Desert. The Peninsular Range is characterized by steep, elongated ranges and valleys that generally trend northwesterly (California Geological Survey 2002). Topographically, the MVC Solar Site is situated along the foothills of Mount Russell Hills, part of the Lake Perris Recreation Area. The MVC Solar Site is surrounded by numerous ephemeral drainages originating from the mountainous terrain to the east. Elevations within the MVC Solar Site decrease from southeast the northwest, with a high of 1,654 feet AMSL at the proposed PV solar array area to 1,550 feet AMSL at the proposed BESS area (Google 2021).

Present site conditions for the MVC Solar Site primarily consist of an approximately 2.7-acre, undeveloped area on the easternmost edge of campus (and upslope of adjacent College Park) that would support a future PV solar array, a BESS component on a developed portion of the campus located to the north of the library, and an EV charger switchboard (and associated AC conduit) to the south of College Drive in campus Parking Lot B. The proposed new

12 kV underground lines are within partially developed and undeveloped/vacant settings. The proposed PV solar array area is surrounded by undeveloped hilly terrain to the north, east, and south, College Park to the southwest, and a previously graded yet undeveloped portion of the campus (and an adjacent surface parking lot) to the west and lightly developed portions of the campus to the northwest. Two large water storage tanks are located less than 200 feet northeast of this work area and public trails border the area to the north, east, and south. The BESS component encompasses a small, 0.04-acre area that consists of mostly of barren, rocky soils with a canopy of mature pine trees (Pinus sp.).

According to the USDA NRCS Web Soil Survey (USDA 2021a), 10 soil types have been identified in the MVC Solar Site: Cieneba rocky sandy loam; Fallbrook sandy loam; Hanford coarse sandy loam and Hanford loamy fine sand; Monserate sandy loam, eroded, and Monserate sandy loam, severely eroded; Ramona very fine sandy loam, Ramona sandy loam, severely eroded, and Ramona sandy loam, eroded and each Ramona series is comprised various slopes consisting of four Ramona soil types. The soil series are described below according to their official soil descriptions.

Cieneba Series: Cieneba Series soils consist of very shallow and shallow, somewhat excessively drained soils that formed in material weathered from granitic rock. They occur on hills and mountains at elevations of 500 to 4,000 feet and have slopes of 9 to 85 percent. Vegetation is mainly chaparral and chemise with widely spread foothill pine or oak tree. A typical Cieneba series pedon extends 30 inches below ground surface (bgs). Cieneba rocky sandy loam, 15 to 50 percent slopes, eroded is found within the location of the possible route of the new 12kV underground utility line.

Fallbrook Series: Fallbrook Series soils are found on gently rolling to very steep hills at elevations of 200 to 3,000 feet or as high as 3,500 feet on south-facing slopes. They formed in material weathered from granite and closely related granitic rocks that are usually deeply weathered. Rock outcrops are common in some areas. Uncultivated areas are mainly annual grasses and forbs with considerable chaparral, chamise (*Adenostoma fasciculatum*), flattop buckwheat (*Eriogonum fasciculatum v. polifolium*), and other shrubs. A typical Fallbrook Series pedon extends 90 inches bgs. Fallbrook sandy loam, 8 to 15 percent slopes, eroded is found within a portion of the proposed BESS and existing 12kV underground line.

Hanford Series: Hanford Series soils are found on stream bottoms, floodplains, and alluvial fans at elevations of 150 to 3,500 feet. Slopes range from 0 to 15 percent. The soils formed in deep, moderately coarse textured alluvium, dominantly from granite and other quartz-bearing rocks of similar texture. Vegetation in uncultivated areas is mainly annual grasses and associated herbaceous plants. A typical Hanford Series pedon extends 60 inches bgs. Hanford loamy fine sand, 0 to 8 percent slopes, is found within the location of the proposed PV solar array. Hanford coarse sandy loam, 8 to 15 percent slopes, eroded is found within a portion of the proposed BESS, existing 12kV underground line, and the possible route of the new 12kV underground utility line.

Monserate Series: Monserate Series soils consists of fine-loamy, mixed, superactive, thermic Typic Durixeralfs and is formed in alluvium derived principally from granitic rocks on nearly level to moderately steep old dissected terraces and fans at elevations of 700 to 2,500 feet. Slopes range from 5 to 25 percent. Vegetation in uncultivated areas is mainly annual grasses and forbs, widely spaced native canyon oak, and shrubs on eroded slopes. A typical Monserate Series pedon extends 70 inches bgs. Monserate sandy loam, 5 to 15 percent slopes, eroded is found within the location of the existing 12kV underground line. Monserate sandy loam, 15 to 25 percent slopes, severely eroded is found within the existing 12kV underground line, the possible route of the new 12kV underground utility line, and the launching pit.

Ramona Series: Ramona Series soils consists of well-drained soils formed in alluvium derived mostly from granitic materials. Ramona soils are on terraces and alluvial fans at elevations of 500 feet to 3,500 feet amsl with slopes of 0 to 25 percent. The natural vegetation consists primarily of annual grasses, forbs, chamise, sages (*Salvia* spp.), and California buckwheat (*Eriogonum fasciculatum*). Soils at the surface include sandy loam to very fine sandy loam, with some loamy sand, gravelly sandy loam, and gravelly fine sandy loam. A typical Ramona Series pedon extends 74 inches bgs. Ramona very fine sandy loam, 0 to 8 percent slopes, eroded, is found within a portion of the proposed EV charger switchboard, PV solar array and existing 12kV underground line. Ramona sandy loam, 5 to 8 percent slopes, severely eroded and Ramona sandy loam, 8 to 15 percent slopes, eroded, are found within the location of the existing 12kV underground line and the possible route of the new 12kV underground utility line and a portion of the proposed maintenance road. Ramona sandy loam, 0 to 5 percent slopes, severely eroded, are found within the location of the AC conduits, a portion of the EV charger switchboard, and the possible route of the new 12kV underground utility line.

A review of the USGS mineral resources (USGS 2021) online spatial data for geology indicates that the MVC Solar Site is comprised of two types of native soil. Approximately 95 percent of the MVC Solar Site, including the proposed PV solar array, BESS, EV charger switch board, AC conduits, existing 12kV underground line, and the possible route of the new 12kV underground utility line areas are composed of Mesozoic granitic rocks, unit 2 (Peninsular Ranges) from the middle Jurassic to Late Cretaceous epoch. These formations have limited potential to support the presence of buried archaeological resources.

The remaining 5 percent of the MVC Solar Site encompasses portions of the AC conduits, specifically the EV Charger-POI and INV-SPB, and is composed of Older Quaternary alluvium and marine deposits from the Pleistocene epoch. Late Pleistocene-era alluvial formations do have the potential to support the presence of buried archaeological resources. These soils are associated with the period of prehistoric human use, as well as represent ongoing processes of development that have potential to preserve cultural material in context, depending on area-specific topographical setting.

Regulatory Context

Work for this Project was conducted in compliance with the California Environmental Quality Act (CEQA). The regulatory framework as it pertains to cultural resources under CEQA is detailed below.

Under the provisions of CEQA, including the CEQA Statutes (PRC Sections 21083.2 and 21084.1), the CEQA Guidelines (14 CCR 15064.5), and California Public Resources Code (PRC) Section 5024.1 (14 CCR 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for California Register of Historical Resources (CRHR) eligibility (PRC Section 5024.1).

The purpose of the CRHR is to maintain listings of the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term historical resources include a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (14 CCR 15064.5[a]). The criteria for listing properties in the CRHR were developed in accordance with previously established criteria developed for listing in the National Register of Historic Places. The California Office of Historic Preservation regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation (OHP 1995:2).

State

The California Register of Historical Resources

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing on the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

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

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. A unique archaeological resource is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
  - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
  - Has a special and particular quality, such as being the oldest of its type or the best available example of its type
  - Is directly associated with a scientifically recognized important prehistoric or historic event or person

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a "unique archaeological resource" under CEQA (PRC Section 21083.2) are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC Section 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

California Environmental Quality Act

As described further, the following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

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

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

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

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

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC,

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

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (CEQA Guidelines Section 15064.5(b)(2)).

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

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

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

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Impacts on nonunique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a nonunique archaeological resource qualifies as a TCR (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

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

California State Assembly Bill 52

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

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

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

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

California Health and Safety Code Section 7050.5

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

Local

City of Norco General Plan Land Use Element

The City's General Plan Goal 2.7 describes archaeological and paleontological resources, a regulatory framework, and policies and plans to protect such resources. The planning goals and policies are described below (City of Norco 2009).

The Historic Resources Element of the City's General Plan (adopted in 2009) addresses archaeological and historical cultural resources. Goal 4.3 in the Goals and Policies section states that the City will "preserve from development to the extent possible, the City's Historical and archaeological resources" Nine policies are enumerated to assist in implementation of the goal. The Historic Element also calls for an inventory of all historically significant sites and/or structures that require protection.

City of Moreno Valley Cultural Preservation (Title 7)

This study was completed in consideration of all sections of the City of Moreno Valley Cultural Preservation Ordinance (Title 7). Sections most relevant to this study are provided below (City of Moreno Valley 2007).

7.01.010 - Purpose of Title.

A. The general purpose of this title is to promote the public health, safety, and general welfare by providing for the preservation, identification, protection, enhancement and perpetuation of existing improvements, buildings, structures, signs, objects, features, sites, places, areas, districts, neighborhoods, streets and natural features having special cultural, historical, archaeological, architectural or community value in the city.

B. Specific purposes of this title are as follows:

1. To safeguard the city's heritage as embodied and reflected in such resources;
2. To encourage public knowledge, understanding, and appreciation of the city's past;
3. To foster civic and neighborhood pride and a sense of identity based on the recognition and use of cultural resources;
4. To promote the enjoyment and use of cultural resources appropriate for the education and recreation of the people of the city;
5. To preserve diverse and harmonious architectural styles and design preferences reflecting phases of the city's history;
6. To enhance property values and to increase economic and financial benefits to the city and its inhabitants;
7. To protect and enhance the city's attraction to tourists and visitors, thereby stimulating business and industry;
8. To identify as early as possible potential conflicts between the preservation of cultural resources and alternative land uses;
9. To integrate the preservation of cultural resources and the extraction of relevant data from such resources into public and private land management and development processes. (Ord. 126 § 1, 1987)

7.05.010 - Landmark.

A landmark is any site, including significant trees or other significant permanent landscaping located thereof, place, building, structure, street, improvement, natural feature or other object having a special historical, archaeological, paleontological, cultural, architectural or community value in the city and which has been designated a landmark pursuant to this title. (Ord. 126 § 1, 1987)

7.05.130 Structure of merit.

The City (sic) may encourage the protection, enhancement, appreciation and use of structures of historical, archaeological, paleontological, cultural, architectural, community or aesthetic value which have not been designated as landmarks but are deserving of recognition, by designating them as structures of merit so as to emphasize their importance in the past, present and future of the city. (Ord. 126 § 1, 1987)

7.07.010 Preservation district.

A preservation district is any legally described geographic area having historical significance; special character for aesthetic value; serving as an established neighborhood or community center; representing one or more architectural periods or styles typical in the history of the city; or constituting a distinct section of the city, and which has been designated a preservation district by committee or by the city council on appeal. (Ord. 126 § 1, 1987)

7.07.130 Neighborhood conservation area.

The City (sic) may encourage the protection, enhancement, appreciation and use of areas of historical, architectural, aesthetic, cultural or community value which have not been designated as preservation districts but are deserving of recognition by designating them as neighborhood conservation areas so as to emphasize their importance in the past, present and future of the city. Any decision of the City (sic) designating a neighborhood conservation area shall be final and no appeal may be taken to the city council on account of any such action by the committee. (Ord. 126 § 1, 1987)

Cultural Setting

Evidence for continuous human occupation in the region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1750), and Ethnohistoric (post-AD 1750).

Paleoindian (pre-5500 BC)

Information pertaining to the Paleoindian occupation in the region is tenuous; the knowledge of associated cultural pattern(s) is informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego through the Mojave Desert and beyond. One of the earliest dated archaeological assemblages in this area (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla, San Diego County. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2006). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of groundstone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large-stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Prime examples of this pattern are sites that were studied by (Davis 1978) on China Lake Naval Air Weapons Station near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679), a multicomponent fluted point site, and MNO-680, a single component Great Basined stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare, while finely made projectile points were common.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the Southern California region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004, p. 26). Termed San Dieguito (Rogers 1945), assemblages at the Harris site, located in the area now occupied by City of Escondido, are qualitatively distinct from most others in the region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, are very different than nearly all other assemblages throughout the region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with the general trends in Southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1990).

Archaic (8000 BC–AD 500)

The more than 1500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the region. If San Dieguito is the only recognized Paleoindian component in the region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the region (Hale 2001, 2009).

The Archaic pattern is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities, and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped groundstone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

Late Prehistoric (AD 500–1750)

The period following the Archaic and prior to Ethnohistoric times (AD 1750) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. The post-AD 1450 period is called the San Luis Rey complex (Meighan and True 1977). Rogers (1929) also subdivided the last 1,000 years into the Yuman II and III cultures, based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey complex difficult. For this reason, the term Late Prehistoric is well suited to describe the last 1,500 years of prehistory in the region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric period are poorly understood. This is partly due to the fact that the fundamental Late Prehistoric assemblage is very similar to the Archaic pattern but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. While steatite was commonly the material of choice for vessel production, it was generally replaced near the time of missionization by locally procured clay to produce ceramic vessels. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400. True (1980) argued that acorn processing and ceramic use in the region did not occur until the San Luis Rey pattern emerged after approximately AD 1450.

Ethnohistoric (post-AD 1750)

The following section represents a summary of applicable and commonly cited academic and historic era documentation pertaining to Native American history. The documented history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. While valuable for the record they created, these brief, and generally peripheral, accounts should also be subject to critical interpretation because they were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Bean and Shipek 1978; Boscana 1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; White 1963). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005, p. 32) by recording languages and oral histories within the region. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities. This understanding of culture is, of course, not consistent with contemporary considerations of culture change and continuity. Living Native American dependent communities and individuals, while subject to substantial historical abuses and disruptions by the Euroamerican population, are considered the stewards of their heritage and traditional tribal cultural knowledge and values. AB 52 and other regulatory requirements for consultation reflect this understanding.

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families. Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative "time depth" of the speaking populations. A large amount of variation within the language of a group represents a greater time depth than a group's language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (2007, pp. 71). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

The majority of documentation assign the Proposed Project areas within the Cahuilla, Luiseño, Serrano, and Gabrieleño traditional use area also claim traditional associations with this area. The tribes of this area have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007, pp. 74). These groups include the Luiseño, Cupeño, and Cahuilla. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic speaking tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010). The Cahuilla are linguistically and culturally related to the Gabrielino, Cupeño, and Luiseño, and represent the descendants of local Late Prehistoric populations. They are generally considered to have migrated into the area from the Mojave Desert, possibly displacing the prehistoric Yuman-speaking inhabitants.

The tribes of the region were organized into patrilineal clans or bands centered on a chief, comprised of 25–30 people (Kroeber 1925), each of which had their own territorial land or range where food and other resources were collected at different locations throughout the year (Sparkman 1908). The title of chief was heritable along family lines. Inter-band conflict was most common over trespassing. Sparkman observed that "when questioned as to when or how the land was divided and sub-divided, the Indians say they cannot tell, that their fathers told them that it had always been thus" (1908). Place names were assigned to each territory, often reflecting common animals, plants, physical landmarks, or cosmological elements that were understood as being related to that location. Marriages were generally arranged by parents or guardians. Free and widowed women had the option to choose their partner. Polygamy occurred though was not common, often with a single man marrying a number of sisters and wives. Shamanism was a major component in tribal life. The physical body and its components was thought to be related to the power of an individual, and wastes such as fluids, hair, and nails were discarded with intent. Hair, once cut, was often carefully collected and buried to avoid being affected negatively or controlled by someone who wishes them harm. Some locations and natural resources were of cultural significance. Springs and other water-related features were thought to be related with spirits. These resources, often a component of origin stories, had power that came with a variety of risks and properties to those who became affected. Puberty ceremonies for both boys and girls were complex and rigorous. Mourning ceremonies were similar throughout the region, generally involving cut of the hair, burning of the deceased's clothes a year after death, and redistribution of personal items to individuals outside of the immediate tribal group (Sparkman 1908; Kroeber 1925). Areas or regions, identified by known physical landmarks, could be recognized as band-specific territories that might be violently defended. Other areas or resources, such as water sources and other locations that were rich in natural resources, were generally understood as communal land to be shared.

The staple food of the inhabitants of the region during the ethnohistoric period was acorns (Sparkman 1908). Of the at least six oak species within this tribal groups traditional territory, the most desirable of these was the black oak (*Quercus kelloggii*) due to its ease of processing, protein content, and digestibility. Acorns were stored in granaries to be removed and used as needed. The acorns were generally processed into flour using a mortar and pestle. The meal was most commonly leached with hot water and the use of a rush basket, however, there are also accounts of placing meal into excavated sand and gravel pits to allow the water to drain naturally. The acorn was then prepared in a variety of ways, though often with the use of an earthen vessel (Sparkman 1908). Other edible and medicinal plants of common use included wild plums, choke cherries, Christmas berry, gooseberry, elderberry, willow, Juncus, buckwheat, lemonade berry, sugar bush, sage scrub, currents, wild grapes, prickly pear, watercress, wild oats and other plants. More arid plants such as Yucca, Agave, mesquite, chia, bird-claw fern, Datura, yerba santa, Ephedra, and cholla were also of common use by some Luiseño populations. A number of mammals were commonly eaten. Game animals included back-tailed deer, antelope, rabbits, hares, birds, ground squirrels, woodrats, bears, mountain lions, bobcats, coyotes, and others. In lesser numbers, reptiles and amphibians may have been consumed. Fish and marine resources provided some portion of many tribal communities, though most notably those nearest the coast. Shellfish would have been procured and transported inland from three primary environments, including the sandy open coast, bay and lagoon, and rocky open coast. The availability of these marine resources changed with the rising sea levels, siltation of lagoon and bay environments, changing climatic conditions, and intensity of use by humans and animals.

The first extensive contact with Europeans occurred when the Juan Bautista de Anza expedition passed through the area, setting up a trade route to provide resources to the missions by land. Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to native populations. Some former mission neophytes were absorbed into the work forces on the ranchos, while others drifted toward the urban centers at Los Angeles or moved to more rural areas where they were able to join still largely autonomous native communities. United States conquest and annexation, together with the gold rush in Northern California, brought many additional outsiders into the region. Development during the following decades was fitful, undergoing cycles of boom and bust. With rising populations in the nineteenth century throughout the Southern California region, there were increased demands for important commodities such as salt. While the first contact was hostile, later interaction included baptisms (at the surrounding missions) and, eventually, the adoption by the tribes of Euroamerican cattle and agricultural practices. Many tribal communities managed to maintain their political and economic autonomy through the Spanish period, Mexican period, and into the American pioneer period.

Background Research

SCCIC Records Search

The CHRIS is experiencing extensive delays in records search request turn-around times as a result of the COVID-19 pandemic. Therefore, as part of the cultural resources study prepared for the Project, Dudek utilized the results of records searches conducted for previous Dudek reports submitted to the District that address the Norco College Solar Site and the MVC Solar Site titled *Cultural Resources Study for the Norco College Veterans Resource Center, City of Norco, Riverside County, California* (Colston and Comeau 2019) and *Cultural Resources Inventory Report for the Moreno Valley College Welcome Center Project, City of Moreno Valley, Riverside County, California* (Nicolay et al. 2018), respectively. These records searches for the aforementioned projects cover the current proposed Project site, and is therefore considered adequate to support the analysis of previous cultural resources studies and previously recorded cultural resources within the Norco College Solar Site and the MVC Solar Site.

The CHRIS records search for the Norco College Solar Site (completed August 10, 2018) and the MVC Solar Site (completed November 13, 2018) included a 1-mile buffer and were completed at the Eastern Information Center (EIC), which houses cultural resources records for Riverside County. The search included previously recorded prehistoric and historic-age archaeological resources as well as any historic-age built-environment resources; Department of Park and Recreation (DPR) site records; technical reports; archival resources; and ethnographic references. The CHRIS search also included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The confidential records search results are provided in Confidential Appendix B.

Previously Conducted Cultural Resource Studies

Norco College Solar Site

Results of the CHRIS records search indicate that eighteen (18) previous cultural resources studies have been conducted within 1-mile of the Norco College Solar Site. These studies were conducted between 1980 and 2017. One study, RI-01108, covers the Norco College Solar Site and indicates the prehistoric sensitivity of the surrounding area. A brief summary of this report is provided in the following paragraph.

RI-01108

Environmental Impact Evaluation: An Archaeological Assessment of the Proposed Riverside Community College District Site and Dean Homes Residential Development, Norco, California (Drover 1987), documents the results of a cultural resources survey of a 285-acre property posed for development. A portion of the study area would later become the site of Norco College, which includes Norco College Solar Site. Four prehistoric archaeological sites were identified within the 285-acre property as a result of the cultural resources study: P-33-001229/CA-RIV-001229, P-33-002315/CA-RIV-002315, and P-33-002316/CA-RIV-002316. All of these sites consist of bedrock milling features. No associated prehistoric artifacts, ecofacts, or midden soils were documented at any of the bedrock milling sites. However, none of the sites were subject to subsurface testing, nor were they evaluated for eligibility for listing on the NRHP or CRHR. Although prehistoric resources were encountered during the survey, none of the sites were within close proximity to the Norco College Solar Site. The prehistoric resources were located west of the Norco College Solar Site with the closest milling site located within approximately 305 meters (1,000 feet). Additionally, a review of historical aerial photographs for the current study indicates that the area where the four prehistoric resources were encountered during the 1987 study has since been developed into a residential neighborhood. As a result, it is likely that these prehistoric resources have since been destroyed.

MVC Solar Site

Results of the CHRIS records search indicate that seventeen (17) previous cultural resources studies have been conducted within 1-mile of the MVC Solar Site. These studies were conducted between 1953 and 2012. Two of these studies (RI-00137 and RI-01843) overlap the MVC Solar Site. These studies indicate the prehistoric sensitivity of the immediate surroundings of the MVC Solar Site, and will therefore be summarized in the following paragraphs.

RI-00137

Perris Reservoir Archaeology: Late Prehistoric Demographic Change in Southeastern California (O'Connell et al. 1974), was commissioned by the State of California Department of Parks and Recreation as a comprehensive study on prehistoric human adaptation within the Perris Reservoir region. This study was conducted in anticipation of the development of the Perris Reservoir and implemented using a cooperative approach among multi-institutional organizations. What resulted is an anthology of archaeological research of prehistoric human settlement patterns at Perris Reservoir.

Included within the study is Ambrose and King's report, *Archaeological Survey and Site Distributions*, which documents the results of an intensive-level pedestrian survey of the lower elevations of Perris Reservoir. The field reconnaissance included the Mount Russell Hills area in and around the MVC Solar Site. Overall, sixty-one (61) prehistoric archaeological sites were located as a result of the survey; fourteen (14) of which were captured in the CHRIS records search results of the current proposed Project. These 14 prehistoric archaeological sites (P-33-000530 through P-33-000543) located within 1-mile of the MVC Solar Site consist of bedrock milling stations that were interpreted to be food processing sites. No additional study was conducted at these sites beyond their initial documentation.

RI-01843

Cultural Resource Survey Report on Wolfskill Ranch (Scientific Resource Surveys, Inc. 1984) documents the cultural resources assessment conducted on Wolfskill Ranch prior to the subdivision and development of the 4000+ acre property. The ranch subsumes the MVC campus, and thus, the current MVC Solar Site was investigated as part of 1984 study. A systematic survey approach with the use of mules provided nearly full survey coverage of the 4000+ acre property. A total of fifty-one (51) archaeological resources were identified within the Ranch as a result of the study. Of these, twenty-four (24) were previously recorded prehistoric resources (including sites P-33-000530 through P-33-000543 discussed above), twenty-six (26) were newly identified prehistoric sites, and one (1) was a newly identified historic-age archaeological site. For any direct impacts that may occur to archaeological sites as a result of project grading and construction, Scientific Resource Surveys, Inc. (1984) recommended site documentation, subsurface testing and evaluation, and archaeological monitoring during grading.

Previously Recorded Cultural Resources

Norco College Solar Site

The CHRIS records search did not identify any previously recorded cultural resources within the Norco College Solar Site. However, twenty-four (24) previously recorded cultural resources were identified within 1-mile of the Project site. These resources consist of five (5) prehistoric sites, one (1) prehistoric isolated artifact, two (2) historic-age archaeological sites, and sixteen (16) historic-age built environment resources. Amongst the prehistoric archaeological resources are four (4) bedrock milling stations, one (1) low density lithic scatter, and one (1) isolated handstone fragment. The historic-age archaeological sites consist of foundation remnants of previously extant single-family properties. Table 1, below, provides a summary of the previously recorded cultural resources within 1-mile of the Norco College Solar Site.

Table 1. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Norco College Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to Norco College Solar Site
001229	001229	Prehistoric Site	Bedrock milling station with one milling slick	7R. Identified during survey; Not evaluated	1977 (Eastvold); 1980 (Feickert and Bjornsen); 1985 (McCarthy); 1987 (Drover)	Outside
001230	001230	Prehistoric Site	Low density lithic scatter collected in 1977. No artifacts remain as of the 1984 update.	7R. Identified during survey; Not evaluated	1977 (Eastvold); 1984 (Drover)	Outside
002315	002315	Prehistoric Site	Bedrock milling stations; two boulders each with one slick	7R. Identified during survey; Not evaluated	1977 (Eastvold); 1980 (Feickert and Bjornsen); 1987 (Drover)	Outside
002316	002316	Prehistoric Site	Bedrock milling station with seven milling slicks	7R. Identified during survey; Not evaluated	1977 (Eastvold); 1980 (Feickert and Bjornsen); 1985 (McCarthy); 1987 (Drover)	Outside

Table 1. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Norco College Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to Norco College Solar Site
002317	002317	Prehistoric Site	Bedrock milling stations; two boulders each with one slick	7R. Identified during survey; Not evaluated	1977 (Eastvold); 1980 (Feickert and Bjornsen); 1985 (McCarthy); 1987 (Drover)	Outside
009101	—	Historic-age Built Environment, Club/Hotel	Lake Norconian Club/Hotel: Spanish Colonial Revival style built c. 1929	1S. Individual property listed in the NRHP and CRHR	1998 (Ensley); 1999 (Urbas)	Outside
019896	010121	Historic-age Archaeological Site	Remnants of a single family residence built 1960 which includes concrete footings and concrete slab foundations	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Goodwin)	Outside
019897	010122	Historic-age Archaeological Site	Remnants of a single family residence built 1953 which includes concrete footings and concrete slab foundations	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Goodwin)	Outside
019898	—	Historic-age Built Environment, Single Family Residence	2441 First Street: modest Ranch-style residence built 1958	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
019900	—	Historic-age Built Environment, Single Family Residence	2214 Second Street: vernacular residence built 1927	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside

Table 1. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Norco College Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to Norco College Solar Site
019901	—	Historic-age Built Environment, Single Family Residence	2138 Second Street: vernacular farm cottage residence built 1924	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
019902	—	Historic-age Built Environment, Single Family Residence	2266 Second Street: Ranch-style residence built 1956	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
019903	—	Historic-age Built Environment, Single Family Residence	2390 Second Street: modest Ranch-style residence built 1958	6Z. Found ineligible for CRHR through survey evaluation; not evaluated for NRHP or local designation	2011 (Tibbet)	Outside
019904	—	Historic-age Built Environment, Single Family Residence	1492 Mountain Avenue: Ranch-style residence built 1949	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
019906	—	Historic-age Built Environment, Ranch	1658 Mountain Avenue/Norco Egg Ranch: built 1956	5S3: Appears to be individually eligible for local listing designation through survey evaluation	2011 (Tibbet)	Outside
019908	—	Historic-age Built Environment, Single Family Residence	1463 Pacific Avenue: vernacular residence built 1947	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
019909	—	Historic-age Built Environment, Two Single Family Residences	1451 and 1463 Pacific Avenue: two vernacular residences built 1949 and 1947	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside

Table 1. Previously Recorded Cultural Resources Within a 1-Mile Radius of the Norco College Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to Norco College Solar Site
019910	—	Historic-age Built Environment, Single Family Residence	1445 Pacific Avenue: vernacular residence built 1948	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
019911	—	Historic-age Built Environment, Single Family Residence	1463 Pacific Avenue: vernacular residence built 1947	6Z. Found ineligible for CRHR through survey evaluation; not evaluated for NRHP or local designation	2011 (Tibbet)	Outside
019912	—	Historic-age Built Environment, Single Family Residence	1577 Pacific Avenue: vernacular residence built 1920	6L. Determined ineligible for local designation; may warrant special consideration in local planning	2011 (Tibbet)	Outside
019913	—	Historic-age Built Environment, Single Family Residence	1619 Pacific Avenue: vernacular farm cottage with Craftsman elements residence built 1916	6Z. Found ineligible for CRHR through survey evaluation; not evaluated for NRHP or local designation	2011 (Tibbet)	Outside
019937	—	Historic-age Built Environment, Single Family Residence	1661 Mountain Avenue: vernacular farm cottage residence built 1948	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2011 (Tibbet)	Outside
024100	—	Historic-age Built Environment, Irrigation Structure	Concrete weir box dating mid-twentieth century	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2014 (Evans and Smallwood)	Outside
028176	—	Prehistoric Isolate	Isolated granitic bifacial handstone	6Z. Found ineligible for NRHP, CRHR, or local designation through survey evaluation	2018 (Moslak)	Outside

MVC Solar Site

The CHRIS records search did not identify any previously recorded cultural resources within the MVC Solar Site. However, seventeen (17) previously recorded cultural resources were identified within 1-mile of the MVC Solar Site. All of these resources are prehistoric archaeological sites consisting of bedrock milling stations distributed along the foothills of Mount Russell Hills east of the MVC Solar Site. No associated prehistoric artifacts, ecofacts, or midden soils were documented at any of the bedrock milling sites. Additionally, none of the sites were subject to subsurface testing, nor were they evaluated for eligibility for listing on the NRHP or CRHR. Table 2, below, provides a summary of the previously recorded cultural resources within 1-mile of the MVC Solar Site.

Table 2. Previously Recorded Cultural Resources Within a 1-Mile Radius of the MVC Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to MVC Solar Site
000530	000530	Prehistoric Site	Bedrock milling station with one milling slicks	7. Not evaluated	1972 (Terry Ambrose); 1983 (Jackie Desautels); 1988 (Beth Padon and Pat Jertberg)	Outside
000531	000531	Prehistoric Site	Bedrock milling station with three milling slicks	7. Not evaluated	1972 (Terry Ambrose); 1983 (Jackie Desautels); 1988 (Beth Padon and Pat Jertberg)	Outside
000532	000532	Prehistoric Site	Bedrock milling station with several milling slicks	7. Not evaluated	1972 (Terry Ambrose)	Outside
000533	000533	Prehistoric Site	Bedrock milling station with one milling slick	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000534	000534	Prehistoric Site	Bedrock milling station with one milling slick	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000535	000535	Prehistoric Site	Bedrock milling station with seven milling slicks	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000536	000536	Prehistoric Site	Bedrock milling stations; two boulders each with one slick	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000537	000537	Prehistoric Site	Bedrock milling station with two slicks	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside

Table 2. Previously Recorded Cultural Resources Within a 1-Mile Radius of the MVC Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to MVC Solar Site
000538	000538	Prehistoric Site	Bedrock milling station, two boulders one with two milling slicks and one with one milling slick	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000539	000539	Prehistoric Site	Bedrock milling station with two milling slicks	7. Not evaluated	1972 (Terry Ambrose)	Outside
000540	000540	Prehistoric Site	Bedrock milling stations, three boulders one with four milling slicks, one with two milling slicks, and one with one milling slick	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000541	000541	Prehistoric Site	Bedrock milling slick with seven milling slicks and one mortar	7. Not evaluated	1963 (P. Chace and E. Shepard); 1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000542	000542	Prehistoric Site	Bedrock milling station with one milling slick	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000543	000543	Prehistoric Site	Bedrock milling stations, two boulders one with one milling slicks and one with two milling slicks	7. Not evaluated	1972 (Terry Ambrose); 1983 (Don Carey)	Outside
000715	000715	Prehistoric Site	Bedrock milling stations with three boulders, one with five milling slicks, one with one milling slick and a mortar, and one with one milling slick	7. Not evaluated	1963 (P. Chace and E. Shepard); 1983 (Jackie Desautels); 1988 (Beth Padon and Pat Jertberg)	Outside

Table 2. Previously Recorded Cultural Resources Within a 1-Mile Radius of the MVC Solar Site

Primary (P-33-)	Trinomial (CA-RIV-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to MVC Solar Site
002829	002829	Prehistoric Site	Bedrock milling station with four milling slicks	7. Not evaluated	1983 (Ann Cody)	Outside
002994	002994	Prehistoric Site	Bedrock milling station with ten milling slicks on a split boulder outcrop	7. Not evaluated	1984 (Roger Mason)	Outside

Review of Historical Topographical Maps and Aerial Photographs

Dudek consulted historical topographic maps and aerial photographs through the Nationwide Environmental Title Research, LLC (NETR) to better understand any natural or human-made changes to the Norco College Solar Site and MVC Solar Site and surrounding properties over time. It is important to note that while topographic maps are informative, they do not illustrate the minute changes that can occur to a landscape overtime and at times, are inconsistent with what is depicted year to year. Most often, structures depicted in topographical maps are limited to those with community or social significance (e.g. Firehouses or Hospitals), including additions or changes to roads and/or waterways. Nonetheless, the information gathered contributes to the understanding of the chronological development of a study area.

Norco College Solar Site

Historical Topographic Maps

USGS topographic maps for the Norco College Solar Site are available for the years 1947 through 2018 (NETR 2021a). The first available topographic map of 1947 depicts the Norco College Solar Site as within the 678-acre luxury resort known as the Lake Norconian Club. Though numerous roads run around and throughout the Norco College Solar Site, only one structure is represented. That structure appears to be a single-family residence placed outside, yet adjacent to, the southwest portion of the Norco College Solar Site's proposed locations of the EV charger switchboard and associated AC conduit, and possible route of the new underground 12 kV underground line. No significant changes observed to the Norco College Solar Site.

By 1955, it is evident that the resort complex has been sold to the U.S. Navy as "NAVAL RESERVATION" is labeled over the complex. There have been slight alterations to some of the road alignments, though they have generally remained consistent with the previous year. One major difference to the area is the addition of barracks and a building labeled "Ordinance Laboratory" to the west of the presently proposed BESS area. The structure adjacent to the southwest portion of the Norco College Solar Site is no longer depicted. No significant changes observed to the Norco College Solar Site.

A few more structures have been added to the 1969 topographic map within the Naval Reservation. No significant changes observed to the Norco College Solar Site.

On the 1982 topographic map, "NAVAL RESERVATION" has been changed to "NAVAL WEAPONS CENTER", though no other changes to the Norco College Solar Site are depicted.

Norco College is first depicted on the 2012 topographic map as "Riverside Community College Norco Campus," indicating the sale of the government-owned land to District. Though the map does not show any structures, the roads are in their present-day alignments. There are no features depicted within the Norco College Solar Site.

There are no changes depicted within the Norco College Solar Site on either the 2015 or 2018 topographic maps. However, directly north of the Norco College Solar Site is the added perimeter of a naval base labeled "NWS-SEAL BEACH CORONA".

Historical Aerial Photographs

A review of historical aerial photographs was conducted as part of the archival research effort from the following years: 1938, 1948, 1966, 1967, 1980, 1994, 1998, 1999, 2002, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 (NETR 2021b). This section will only focus on noticeable changes to the Norco College Solar Site as they developed over time and not the development of the Norco College campus as a whole.

The 1938 historic aerial photograph shows the Norco College Solar Site within vacant and undeveloped land with the exception of a few dirt roads. The Lake Norconian resort complex is visible north of the Norco College Solar Site along the north shore of Lake Norconian. The dirt roads that weave in and around the Norco College Solar Site connect to the complex.

The naval barracks and Ordinance Laboratory adjacent to the proposed BESS area are clearly visible on the 1948 historic aerial photograph. The Norco College Solar Site has remained relatively undisturbed with the exception of the partial cultivation of the proposed BESS area.

By 1966, two small sheds and a graded dirt parking lot/turn-around are visible southwest of the Norco College Solar Site's proposed locations of the EV charger switchboard and associated AC conduit, and possible route of the new underground 12 kV underground line. No significant changes observed to the Norco College Solar Site.

More substantial disturbances are visible within the Norco College Solar Site on the 1980 aerial photograph. Numerous informal dirt roads of varying widths cut through each work area making a network of scars. The work areas are entirely altered due to the construction of Norco College as seen on the 1994 aerial photograph. All work areas have been subject to some degree of ground disturbance either through complete grading or plowing. Alterations to the Norco College campus and associated facilities continues until 2009 when the campus and Norco College Solar Site look much as they do today. There are no other substantial alterations to the work areas through 2018 besides the routine disking and/or plowing of the area southwest of the proposed locations of the EV charger switchboard and associated AC conduit, and possible route of the new underground 12 kV underground line, and proposed BESS area.

MVC Solar Site

Historical Topographic Maps

USGS topographic maps for the MVC Solar Site are available for the years 1954 through 2018 (NETR 2021c). The first available topographic map from 1954 depicts the MVC Solar Site as mostly undeveloped aside from a north-south trending tract road that meanders the perimeter of the Mount Russell Hills, eventually bisecting the proposed BESS area. The 1963 map depicts a second tract road within the MVC Solar Site. This north-south trending road runs adjacent to the western border of proposed PV solar array area. The 1968 map details a shift in the tract road alignments. The road that once intersected the proposed BESS area is offset to the west, and the road adjacent to the proposed PV solar array location is no longer depicted. There are no changes to the topographic maps until 2012, at which time the surrounding area is shown as entirely developed, and Moreno Valley College is labeled on the map, though no individual features are depicted. There are no additional updates to the topographic maps through 2018.

Historical Aerial Photographs

A review of historical aerial photographs was conducted as part of the archival research effort from the following years: 1966, 1967, 1978, 1997, 2002, 2005, 2009, 2010, 2012, 2014, 2016, and 2018 (NETR 2021d). This section will only focus on noticeable changes to the MVC Solar Site as they developed over time and not the development of the MVC campus as a whole.

The 1966 aerial photograph shows the MVC Solar Site within disturbed land denuded of vegetation and with little to no boulder outcrops. This is a noticeable stark contrast to the undisturbed Mount Russell Hills that abut the MVC Solar Site and contain a plethora of visible outcrops. The location of the proposed PV solar array has been graded and prepped for possible cultivation and a natural drainage bisects this area north-south. A dirt road encircles the cleared area encompassing the proposed PV solar array area. Similarly, the proposed BESS area has also been subject to earth moving activities as evidenced by the lack of vegetation and an informal dirt road bisects this area northwest to southeast. Immediately south of the MVC Solar Site is a large, flat parcel of cultivated land that is the eventual location of the MVC campus.

There are no substantial changes to the MVC Solar Site until 1997, when the development of the MVC campus has completely altered the landscape. Two large water tanks have been erected immediately north of the proposed PV solar array location. Additionally, a network of informal dirt roads crisscross and delineate the boundaries of proposed PV solar array area. A row of ornamental trees has been added to the proposed BESS area, though it otherwise remains vacant; however, paved roads and campus buildings surround this area to the north, east, and south.

By 2005, the proposed PV solar array area has been graded and shaped into a flat pad. At this point, the MVC Solar Site appears as it does in its current condition. No discernable changes occurred within the MVC Solar Site through 2018.

Geotechnical Report Review

The geotechnical report, *Preliminary Geotechnical Investigation Report Districtwide Solar Planning Initiative Project, Moreno Valley And Norco College Campuses, Cities of Moreno Valley and Norco, Riverside County, California* (Converse Consultants 2021), was prepared for District in October 2021 to determine the subsurface geological conditions of the proposed Project site. The results of the subsurface investigations for the Norco College Solar Site and the MVC Solar Site are individually discussed below.

Norco College Solar Site

Subsurface exploratory investigations were conducted within the location of the 2.1- MW, ground-mounted fixed tilt PV solar array within the Norco College Solar Site. According to the boring logs for the two (2) locations investigated (BH-05 and BH-06) within the Norco College Solar Site's proposed PV solar arrays work area, alluvium (native soils) was encountered from the surface to 15 feet below existing ground surface at both boring locations. Underlying the alluvium is bedrock. No fill soils were encountered within the locations subjected to subsurface investigation.

MVC Solar Site

Subsurface exploratory investigations were conducted within the location of the 0.9-MW ground-mounted fixed tilt PV solar array within the MC Solar Site. According to the boring logs for the two locations investigated (BH-01 and BH-02) within the MVC Solar Site's proposed PV solar arrays work area, alluvium (native soils) was encountered from surface to between 15 to 45 feet below existing ground surface at BH-01 and BH-02, respectively. Underlying the alluvium is bedrock. No fill soils were encountered within the locations subjected to subsurface investigation.

Native American Coordination

NAHC Sacred Lands File Search

Norco College Solar Site

The SLF record is maintained at a public land survey system section level meaning the negative or positive result is respective of a general area covering approximately 1 square mile (640 acres) rather than the exact area of study. As part of the process of identifying cultural resources within or near the Norco College Solar Site, a search of the NAHC's SLF database was requested on May 13, 2022. The NAHC's SLF search result (received June 16, 2022) was positive; however, as previously stated, the SLF record is maintained at a public land survey system section level, which indicates a recorded sacred site could be anywhere within this 1 square mile (640 acre) area and therefore, does not necessarily equate to the existence of resources within the specific area occupied by the Norco College Solar Site.

MVC Solar Site

A search of the NAHC's SLF database for the MVC Solar Site was requested on May 13, 2022. The NAHC's SLF search result (received June 16, 2022) was negative for known Native American heritage resources within the MVC Solar Site. It is important to note that the SLF maintained by the NAHC represents a curation of "sacred lands" or tribal cultural resources (TCRs) provided by Tribal entities and Native American representatives. For various reasons, Tribal entities and Native American representatives do no not always report sacred lands or TCRs to the NAHC. As such, the NAHC's SLF is not a comprehensive list, and searches of the SLF must be considered in concert with other research and not used as a sole source of information regarding the presence of Native American sacred sites or resources documented to be of specific Native American origin.

Documentation of the NAHC SLF search results for both the Norco College Solar Site and the MVC Solar Site are provided in Appendix C.

Assembly Bill 52

The proposed Project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives that have requested notification who are traditionally or culturally affiliated with the geographic area of the proposed Project site. Native American consultation completed to date has identified at named village locations and traditional landscapes intersecting and surrounding both the Norco College campus and the MVC campus. All records of correspondence related to AB 52 notification and any subsequent consultation are on file with the District. A summary of the consultation record is provided and addressed in the Initial Study/Mitigated Negative Declaration document for the proposed Project.

Field Survey

Methods

Norco College Solar Site

Dudek Cultural Specialist, Adriane Gusick, conducted a pedestrian survey of the Norco College Solar Site on August 25, 2021, specifically the locations of the proposed BESS and PV solar array. Dudek Cultural Specialists, Linda Kry and Lanette Renz, conducted a supplemental survey of the Norco College Solar Site on September 28, 2022 focusing on the limits of the possible new underground line that extends from the proposed PV solar array to the existing 12 kV underground line and BESS.

Given present site conditions within the work areas for the Norco College Solar Site, survey techniques were adjusted to accommodate for variations in level of development, ground surface visibility, and terrain. An opportunistic survey approach was employed in areas with dense vegetation cover and low visibility, which involved meandering through vegetation, and inspecting areas of cut banks when possible, including atop and along the hill to the southwest of the proposed PV solar array work area. An intensive-level survey was conducted within areas of good to excellent visibility resulting from recent plowing for weed abatement areas and where informal dirt access roads are present. The intensive-level survey entailed walking parallel transects spaced no more than 10 to 15 meters apart (approximately 32 to 50 feet) where feasible, within the limits of the proposed work areas.

Throughout the extent of the Norco College Solar Site, the ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historic-period artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. Particular attention was given to examining all bedrock outcrops present within the proposed work areas for signs of prehistoric milling activities. Location-specific photographs were taken using an Apple 3rd Generation iPad equipped with 8-megapixel resolution and georeferenced PDF maps of the Norco College Solar Site. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office.

MVC Solar Site

Dudek Cultural Specialist, Adriane Gusick, conducted a pedestrian survey of the MVC Solar Site on August 25, 2021, specifically the locations of the proposed BESS and PV solar array. Dudek Cultural Specialists, Linda Kry and Lanette Renz, conducted a supplemental survey of the MVC Solar Site on September 28, 2022 focusing on the limits of the possible new underground line that extends from the proposed PV solar array to the existing 12 kV underground line and BESS.

Given present site conditions within the work areas for the MVC Solar Site, survey techniques were adjusted to accommodate for variations in level of development, ground surface visibility, and terrain. An opportunistic survey approach was employed in areas with dense vegetation cover and low visibility, which involved meandering through vegetation, and inspecting areas of cut banks when possible. An intensive-level survey was conducted within areas of moderate to excellent visibility resulting from landscaping activities, grading work as evidenced by the presence of push piles, weed abatement, mechanically sloped terraces, informal dirt access roads, and pedestrian trails that meander within the vacant and undeveloped areas. The intensive-level survey entailed walking parallel transects spaced no more than 10 meters apart (approximately 32 feet) where feasible, within the limits of the proposed work areas.

Throughout the extent of the MVC Solar Site, the ground surface was inspected for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, groundstone tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of structures and/or buildings (e.g., standing exterior walls, post holes, foundations), and historic-period artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. Particular attention was given to examining all bedrock outcrops, if present within the proposed work areas, for signs of prehistoric milling activities. Location-specific photographs were taken using an Apple 3rd Generation iPad equipped with 8-megapixel resolution and georeferenced PDF maps of the MVC Solar Site. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office.

Results

Norco College Solar Site

The Norco College Solar Site work areas are within disturbed and mostly undeveloped land. The following provides a brief summary of the results of the pedestrian survey within each specific work area:

BESS, AC Conduit, EV Charger/Solar Switchboard Work Areas. These work areas are within developed settings, such as paved parking lots, including a paved parking lot within the Central Plants facility (Image 1), extant campus buildings/structures, as well paved walkways/roadways and landscaped areas. As such, ground surface visibility in these areas non-existent to poor (0 to less than 20 percent). Given that no cultural resources survey was able to be conducted within these work areas, results of the pedestrian survey are considered inconclusive for archaeological resources.

Image 1. View of BESS Work Area, looking northwest (IMG_2275)

PV Solar Array Work Area. This work area is comprised of a hillside that gradually raises in elevation to the north. This portion of vacant, cultivated land is bound by the naval base to the north and west, by commercial, residential, and educational buildings to the east, and continued open space to the south. The parcel is fenced on all sides except the southern perimeter. An approximately 60-foot-wide strip of recently plowed earth comprises the eastern perimeter of the work area. This recent plowing allowed for excellent (100 percent) ground surface visibility in this area. However, the majority of the work area was covered in dense knee-high grasses that obscured the ground surface and provided poor visibility (0 percent). Clusters of low-lying bedrock outcrops were identified at the apex of the hill. Those that were visible through the vegetation cover were inspected for the presence of prehistoric milling. However, numerous outcrops were completely covered by grasses and were thus not able to be inspected. No cultural material was identified in this work area as a result of the pedestrian survey. However, given the poor visibility throughout the majority of the work area, the results of the survey are considered inconclusive for archaeological resources. Image 2 below shows the current site conditions within the proposed PV solar array work area.

Image 2. View of PV Solar Array Work Area, looking southeast (IMG_2332)

New 12 kV Underground Line. This work area is comprised of relatively flat, vacant, cultivated land with the exception of the north-facing slope to the south, south-facing slope to the north, and a hill to the southwest of the proposed PV solar array work area. As currently proposed, the new 12 kV underground line would extend from the southwest corner of the PV solar array work area, travel southwest and turn slightly south, skirting around the extant hill, as it travels to connect with the existing 12 kV underground line at the northwestern border of the Norco College campus. In an effort to capture the limits of all other possible routes of the new 12 kV underground line, the areas outside of this presently proposed alignment within this work area were also surveyed. This included the areas immediately west and south of the proposed PV solar array work area and limited to the undeveloped areas bordered to the east and south by commercial, residential, and educational buildings. With respect to the hill located approximately 200 feet southwest of the PV solar array, a few factors were considered as part of the field survey methodology. For instance, ground disturbing activities for the proposed Project is anticipated to be between 4 to 8 feet below existing ground surface. The extant hill, at its highest point is at an elevation of 740 feet AMSL. Therefore, the probability of the Project design to include trenching for the installation of the proposed new 12 kV underground line from the location of the PV solar array through or over the extant hill to the existing 12 kV underground line is low, while the route to skirt the base of the extant hill on its western or eastern borders presents less of a constraint for Project logistics. Therefore, an opportunistic survey of the extant hill was conducted, which involved inspecting the rocks scattered across the hilltop for evidence of prehistoric milling (Image 3). Overall, ground surface visibility within this work area was variable. The currently proposed route of the new 12 kV underground line exhibits extensive ground disturbance as evidenced by the presence of an informal dirt roads, weed abatement activities, mechanical sloping of the hilly terrain, including evidence of plowing and tilling, all of which provided for excellent visibility (100 percent). The other areas surveyed was covered in dense vegetation, including grasses, weeds, and bushes and therefore, presented non-existent to fair visibility (0 to 30 percent). No cultural material was identified in this work area as a result of the pedestrian surveys. Images 4 through 9 shows the current site conditions of the currently proposed alignment for the new 12 kV underground line, including areas outside of this presently proposed alignment within this work area.

Image 3. Inspecting rocks atop hill southwest of PV Solar Array Work Area, looking north (IMG_0663)

Image 4. View of New 12 kV Underground Line Work Area, looking north (IMG_0657)

Image 5. View of New 12 kV Underground Line Work Area, looking northeast towards the PV Solar Array Work Area (IMG_0656)

Image 6. View of area south of PV Solar Array Work Area, looking south (IMG_0670)

Image 7. View of area south of PV Solar Array Work Area, looking southwest (IMG_0671)

Image 8. View of area south of PV Solar Array Work Area, looking west towards hill (IMG_0672)

Image 9. View of area where route of New 12 kV Underground line would exit the vacant/undeveloped area towards the campus, looking south/southwest (IMG_0679)

Overall, native soils observed were consistent with the USDA's description of soils in work areas as discussed in the environmental setting and review of soils section of this report.

MVC Solar Site

The MVC Solar Site work areas are within disturbed and undeveloped land. The following provides a brief summary of the results of the pedestrian survey within each specific work area:

BESS, AC Conduit, EV Charger/Solar Switchboard Work Areas. BESS work area is comprised of a flat, disturbed area adjacent to MVC campus infrastructure and facilities. Ground surface visibility was non-existent to poor (0 to 25 percent) due to dense duff produced by pine trees that flank the work area. Inspecting the ground surface required the use of boot scrapes employed in approximately 10-foot increments. Additionally, three cargo containers occupied a majority of the BESS work area. Nevertheless, visible portions of the ground surface indicate that the BESS work area is entirely disturbed through grading activities, landscaping, buried utilities, and the construction of the campus facilities. The remainder of the work areas, including where the proposed new 12 kV underground line connects to the existing 12 kV underground line, AC conduits, EV Charger/Solar switchboard work areas are within paved parking lots and roadways, including sidewalks, extant buildings/structures, landscape areas, and areas of subjected to substantial grading activities. As such, ground surface visibility in these areas was variable and ranged from non-existent to poor (0 to less than 20 percent) in developed settings and excellent (100 percent) within the undeveloped areas. No cultural material was identified in this work area as a result of the pedestrian survey. Image 10 below shows the current MVC Solar Site conditions within the BESS work area.

Image 10. View of BESS Work Area, looking north (IMG_2133)

PV Solar Array Work Area. This work area is comprised of a once small, mounded hill that has been cut and mechanically shaped into a pad. Ground surface visibility was considered good to excellent (75 percent to 100 percent) given the low to moderate density of knee-high ruderal vegetation. The entire PV solar array work area is disturbed. Native surface soils were removed during construction of the pad. Additional disturbances include scarring from heavy machinery, multiple informal roads, and walking trails. A portion of the western half of the work area was covered in protective fencing due to undermining and deep erosional cuts caused by a storm water event. The erosional cut provided an opportunity to assess approximately seven feet of stratigraphy. Heavily disturbed alluvium was noted throughout as was plastic refuse approximately 4 feet bgs. No cultural material was identified in this work area as a result of the pedestrian survey. Image 11 below shows the current MVC Solar Site conditions within proposed PV solar array work area.

Image 11. View of PV Solar Array Work Area, looking northeast (IMG_2095)

New 12 kV Underground Line. This work area is comprised of a range of topography, including relatively flat, vacant, landscaped and graded areas to areas that increases with elevation along the southern base of the Mount Russell Hills. As currently proposed, the new 12 kV underground line would extend from the northwest corner of the PV solar array work area, travel west and upturns northwest to connect with the existing 12 kV underground line along the northeastern border of the MVC campus. In an effort to capture the limits of all other possible routes of the new 12 kV underground line, the areas outside of this presently proposed alignment within this work area was also surveyed. This included the areas immediately north, northwest, and west of the proposed PV solar array work area, including the base of the Mount Russell Hills to the north and undeveloped areas and graded areas to the west/southwest. Disturbances observed within this survey area consisted of landscaped areas and areas subjected to substantial grading activities. Also observed along the base of the slope of the Mount Russell Hills are several pedestrian trails, informal dirt roads, mechanical slope work, and the placement of rip rap for retention of the slope as well as a concrete-lined water diversion channel. Based on present site conditions, including dense vegetation comprised of grasses, weeds, and bushes, ground surface visibility was variable. In areas of development, including paved lots and walkways, extant buildings/structures, and landscaped areas, ground surface visibility was non-existent to poor (0 to 20 percent). Whereas the undeveloped areas with dense vegetation, trails, informal dirt roads, graded areas provided for poor to excellent ground surface visibility (20 to 100 percent). No cultural material was identified in this work area as a result of the pedestrian surveys. Images 12 through 14 shows the current site conditions of the new 12 kV underground line work area.

Image 12. View of New 12 kV Underground Line where it connects to the Existing 12 kV Underground Line Work Area, looking east/northeast (IMG_0688)

Image 13. View of concrete-lined water diversion channel within the New 12 kV Underground Line Work Area, looking west (IMG-0698)

Image 14. View of the New 12 kV Underground Line Work Area, looking north towards the Mount Russell Hills (IMG-0702)

Overall, native soils observed were consistent with the USDA's description of soils in work areas as discussed in the environmental setting and review of soils section of this report.

Sensitivity Analysis

Archaeological Sensitivity

Norco College Solar Site

The archaeological resources study revealed that the potential for unrecorded cultural resources to exist within the Norco College Solar Site is considered low based on the following factors: 1) though the topography and natural features that surround the Norco College Solar Site are conducive to supporting prehistoric occupation, archival review and existing Norco College Solar Site conditions determined that the Norco College Solar Site has been routinely disturbed since at least the mid twentieth century; 2) although the data provided by the CHRIS records search indicates that the surrounding area is sensitive for the presence of prehistoric archaeological sites, the previously recorded resources primarily consist of bedrock milling stations with no associated midden or artifacts; 3) it is unlikely that such sites would be encountered within the Norco College Solar Site as the few existing outcrops within the work areas that were examined during the pedestrian survey were found to be without evidence of milling; 4) results of the study indicate that no built environment structures or buildings occupied any of the work areas since at least the mid-twentieth century, suggesting that the possibility of buried historic-age archaeological deposits associated with once extant structures is considered low; and 5) no cultural material was identified within the Norco College Solar Site as a result of the pedestrian survey. Given these factors, the Norco College Solar Site is considered low sensitivity for the presence of cultural resources.

MVC Solar Site

The archaeological resources study revealed that the potential for unrecorded archaeological resources to exist within the MVC Solar Site is considered low based on the following factors: 1) though the topography and natural features that surround the MVC Solar Site are conducive to supporting prehistoric occupation, archival review and existing MVC Solar Site conditions determined that the MVC Solar Site has been routinely disturbed by grading activities since at least the mid-twentieth century; 2) although the data provided by the CHRIS records search indicates that the surrounding Mount Russell Hills are highly sensitive for the presence of prehistoric archaeological sites, the previously recorded resources are a singular site type consisting of bedrock milling stations with no associated midden or artifacts; 3) it is unlikely that such sites would be encountered within the MVC Solar Site as there are no bedrock outcrops within the work areas; 4) additionally, no previously recorded historic-age archaeological sites are documented within 1-mile of the MVC Solar Site, nor was any evidence of historic-age built environment structures or buildings identified within the MVC Solar Site during archival review that would suggest the possibility of buried historic-age archaeological deposits; and 5) no cultural material was identified within the MVC Solar Site as a result of the pedestrian survey. Given these factors, the MVC Solar Site is considered low sensitivity for the presence of cultural resources. The likelihood of encountering intact deposits during ground disturbing activities is considered low due to the disturbed nature of the MVC Solar Site.

Management Recommendations

Although the CHRIS records search results indicate that the areas surrounding the proposed Project site (inclusive of both the Norco College Solar Site and MVC Solar Site) are highly sensitive for the presence of prehistoric archaeological sites, the previously recorded resources are a singular site type consisting of bedrock milling stations with no associated midden or artifacts. Moreover, it is unlikely that such sites would be encountered within the proposed Project site as there are no bedrock outcrops within the work areas. However, although the potential to encounter subsurface intact deposits to exist within native soils to the depths of proposed ground disturbance (between 4 and 8 feet bgs) is considered low, there is a possibility for archaeological resources to be encountered during Project implementation. For these reasons, the proposed Project site should be treated as potentially sensitive for archaeological resources. In the event that unanticipated archaeological resources are encountered during Project implementation, impacts to these resources would be potentially significant.

Project-specific mitigation is included in the MND, a brief summary of which is included here. MM-CUL-1 requires that all Project construction personnel participate in a Workers Environmental Awareness Program training for the proper identification and treatment of inadvertent discoveries. MM-CUL-2 requires the retention of an on-call qualified archaeologist to conduct spot monitoring and respond to and address any inadvertent discoveries. MM-CUL-3 requires construction work occurring within 100 feet of an inadvertent cultural resource discovery be immediately halted until the qualified archaeologist and representatives of traditionally culturally affiliated consulting tribes have been contacted. The qualified archaeologist will inspect the find and, in consultation with the consulting tribal representatives, will provide an initial assessment and management recommendations. The lead agency will weigh recommended management strategies and provide the final determination with regard to resources treatment.

In addition, mitigation required to address impacts related to the inadvertent discovery of human remains have been provided in MM-CUL-4 and MM-CUL-5. Mitigation is inclusive of all comments provided by consulting tribes and is in compliance with appropriate regulations. With implementation of these measures, significant impacts to cultural and tribal cultural resources and human remains would be reduced to less than significant with mitigation incorporated.

Should you have any questions relating to this report and its findings, please do not hesitate to contact us.

Sincerely,

Linda Kry, B.A., RA
Archaeologist
DUDEK
lkry@dudek.com

Adam Giacinto, M.A., RPA
Archaeologist
DUDEK
agiacinto@dudek.com

Att: *Appendix A: Figures*
Appendix B. (Confidential) EIC Records Search Results
Appendix *C. NAHC SLF Search Results*

cc: *Rachel Struglia, Laura Masterson, Dudek*

References

Basgall, M. E., L. Johnson, and M. Hale. 2002. "An Evaluation of Four Archaeological Sites in the Lead Mountain Training Area, Marine Corps Air Ground Combat Center, Twentynine Palms, California." Submitted to U.S. Army Corps of Engineers, Fort Worth, Texas.

Basgall, M.E., and M. Hall. 1990. "Adaptive Variation in the North-Central Mojave Desert." Paper presented at the 55th Annual Meeting of the Society for American Archaeology, Las Vegas, Nevada.

Bean, L.J., and F.C. Shipek. 1978. "Luiseño." In *Handbook of North American Indians*, Vol. 8, *California*, edited by Robert F. Heizer, 550–563. Washington, D.C.: Smithsonian Institution.

Boscana, G. 1846. "Chinigchinich; A Historical Account of the Origin, Customs, and Traditions of the Indians at the Missionary Establishment of St. Juan Capistrano, Alta California." In *Life in California*, by Alfred Robinson, 227–341. New York, New York: Wiley & Putnam.

Byrd, B.F., and S.N. Reddy. 2002. "Late Holocene Adaptations along the Northern San Diego Coastline: New Perspectives on Old Paradigms." In *Cultural Complexity on the California Coast: Late Holocene Archaeological and Environmental Records*, edited by J.M. Erlandson and T.L. Jones, 41–62. Los Angeles, California: University of California–Los Angeles Press.

California Geological Survey. 2002. California Department of Conservation *California Geomorphic Provinces*. Accessed August 2021. https://www.coastal.ca.gov/coastalvoices/resources/California_Geomorphic_Provinces.pdf

City of Moreno Valley. 2006. *City of Moreno Valley General Plan*. Accessed August 2021. http://www.moreno-valley.ca.us/city_hall/general_plan.shtml

City of Norco. 2009. "City of Norco General Plan Land Use Element" Accessed August 2021. http://www.norco.ca.us/civicax/filebank/blobdload.aspx?BlobID=25452.

Colston, Jessica and Brad Comeau. 2019. *Cultural Resources Study for the Norco College Veterans Resource Center, City of Norco, Riverside County, California.* Prepared for the Riverside Community College District Facilities Planning and Development. Prepared by Dudek.

Converse Consultants 2021. Preliminary Geotechnical Investigation Report Districtwide Solar Planning Initiative Project, Moreno Valley And Norco College Campuses, Cities of Moreno Valley and Norco, Riverside County, California

Davis, E.L. 1978. *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*. Los Angeles, California: Natural History Museum of Los Angeles County.

Drover, Christopher. 1987. *Environmental Impact Evaluation: An Archaeological Assessment of the Proposed Riverside Community College District Site and Dean Homes Residential Development, Norco, California*.

Prepared by Consulting Archaeologist. On file at the CHRIS Eastern Information Center, University of California, Riverside.

Fages, P. 1937. *A Historical, Political, and Natural Description of California* (1775). Translated by Herbert Ingram Priestly. Berkeley, California: University of California Press.

Gallegos, D.R. 1987. "San Dieguito-La Jolla: Chronology and Controversy." San Diego County Archaeological Society, Research Paper No. 1.

Geiger, M. and C.W. Meighan. 1976. As the Padres Saw Them: California Indian Life and Customs as Reported by the Franciscan Missionaries, 1813–1815. Santa Barbara Mission Archive Library, Santa Barbara, California.

Golla, V. 2007. "Linguistic Prehistory." In *California Prehistory: Colonization, Culture, and Complexity,* edited by T.L. Jones and K.A. Klar, 71–82. New York, New York: Altamira Press.

Google. 2021. Google Earth; desktop application; centered on the Project site. Accessed August 2021. https://www.google.com/earth/.

Griset, S. 1996. "Southern California Brown Ware." Unpublished PhD dissertation; University of California, Riverside.

Hale, M. 2001. "Technological Organization of the Millingstone Pattern in Southern California." Master's thesis; California State University, Sacramento.

Hale, M. 2009. "San Diego and Santa Barbara: Socioeconomic Divergence in Southern California." PhD dissertation; University of California, Davis.

Harrington, J.P. 1934. "A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southern California." *Smithsonian Miscellaneous Collections* 92(4).

Hector, S.M. 2006. Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California. Prepared for the City of San Diego.

Johnson, J.R., and J.G. Lorenz. 2006. "Genetics, Linguistics, and Prehistoric Migrations: An Analysis of California Indian Mitochondrial DNA Lineages." *Journal of California and Great Basin Anthropology* 26:33–64.

Kroeber, A. 1925. *Handbook of the Indians of California.* Washington DC: Smithsonian Institution.

Laylander, D. 2000. *Early Ethnography of the Californias, 1533–1825*. Salinas, California: Coyote Press Archives of California Prehistory.

Lightfoot, K.J. 2005. *Indians, Missionaries, and Merchants*. Berkeley, California: University of California Press.

Meighan, C.W., and D.L. True. 1977. "Additional Comments on Molpa Archaeological Site." *The Journal of California Anthropology* 4(2).

nahc.gov (Native American Heritage Commission). *About the Native American Heritage Commission*. State of California Native American Heritage Commission, 2021, http://nahc.ca.gov/about/. Accessed November 2021.

NETR (Nationwide Environmental Title Research LLC). 2021a. Historical Topographical Maps of Norco College dating from 1947, 1955, 1960, 1963, 1969, 1975, 1979, 1982, 2012, 2015, and 2018. Accessed August 2021. https://www.historicaerials.com/viewer.

NETR. 2021b. Historic Aerial Photographs of Norco College dating from 1938, 1948, 1966, 1967, 1980, 1994, 1998, 1999, 2002, 2005, 2009, 2010, 2012, 2014, 2016, and 2018. Accessed August 2021. https://www.historicaerials.com/viewer.

NETR. 2021c. Historical Topographical Maps of Moreno Valley College dating from 1954, 1958, 1963, 1965, 1968, 1976, 1980, 1985, 2012, 2015, and 2018. Accessed August 2021. https://www.historicaerials.com/viewer.

NETR. 2021d. Historic Aerial Photographs of Moreno Valley College dating from 1966, 1967, 1978, 1997, 2002, 2005, 2009, 2010, 2012, 2014, 2016, and 2018. Accessed August 2021. https://www.historicaerials.com/viewer.

Nicolay, Erica, Linda Kry, Matthew DeCarlo, and Micah Hale. 2018. *Cultural Resources Inventory Report for the Moreno Valley College Welcome Center Project, City of Moreno Valley, Riverside County, California*. Prepared for the Riverside Community College District Facilities Planning and Development. Prepared by Dudek.

O'Connell, James F., Philip J. Wilke, Thomas F. King, and Carol L. Mix. 1974. *Perris Reservoir Archaeology: Late Prehistoric Demographic Change in Southeastern California*. Prepared for the State of California Department of Parks and Recreation. Prepared by the Archaeological Research Unit, Department of Anthropology, University of California, Riverside. On file at the CHRIS Eastern Information Center, University of California, Riverside.

OHP (Office of Historic Preservation). 1995. Instructions for Recording Historical Resources. Available online December 2012. Website: http://ohp.parks.ca.gov/?page_id=1069.

Rogers, M.J. 1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist* 31:454–467.

Rogers, M.J. 1945. "An Outline of Yuman Prehistory." *Southwestern Journal of Anthropology* 1:167–198.

Scientific Resource Surveys, Inc. 1984. *Cultural Resource Survey Report on Wolfskill Ranch*. Prepared for Douglas Wood & Associates. On file at the CHRIS Eastern Information Center, University of California, Riverside.

Sparkman, P.S. 1908. "The Culture of the Luiseno Indians." *University of California Publications in American Archaeology and Ethnology* 8(4):187–234.

True, D.L. 1980. "The Pauma Complex in Northern San Diego County: 1978." *Journal of New World Archaeology* 3(4):1–39.

USDA (U.S. Department of Agriculture). 2021a. Natural Resources Conservation Service Web Soil Survey. Accessed August 2021. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

USGS (United States Geological Society). 2021. Mineral Resources Online Spatial Data. Interactive maps and downloadable data for regional and global analysis. Accessed August 2021. https://mrdata.usgs.gov/

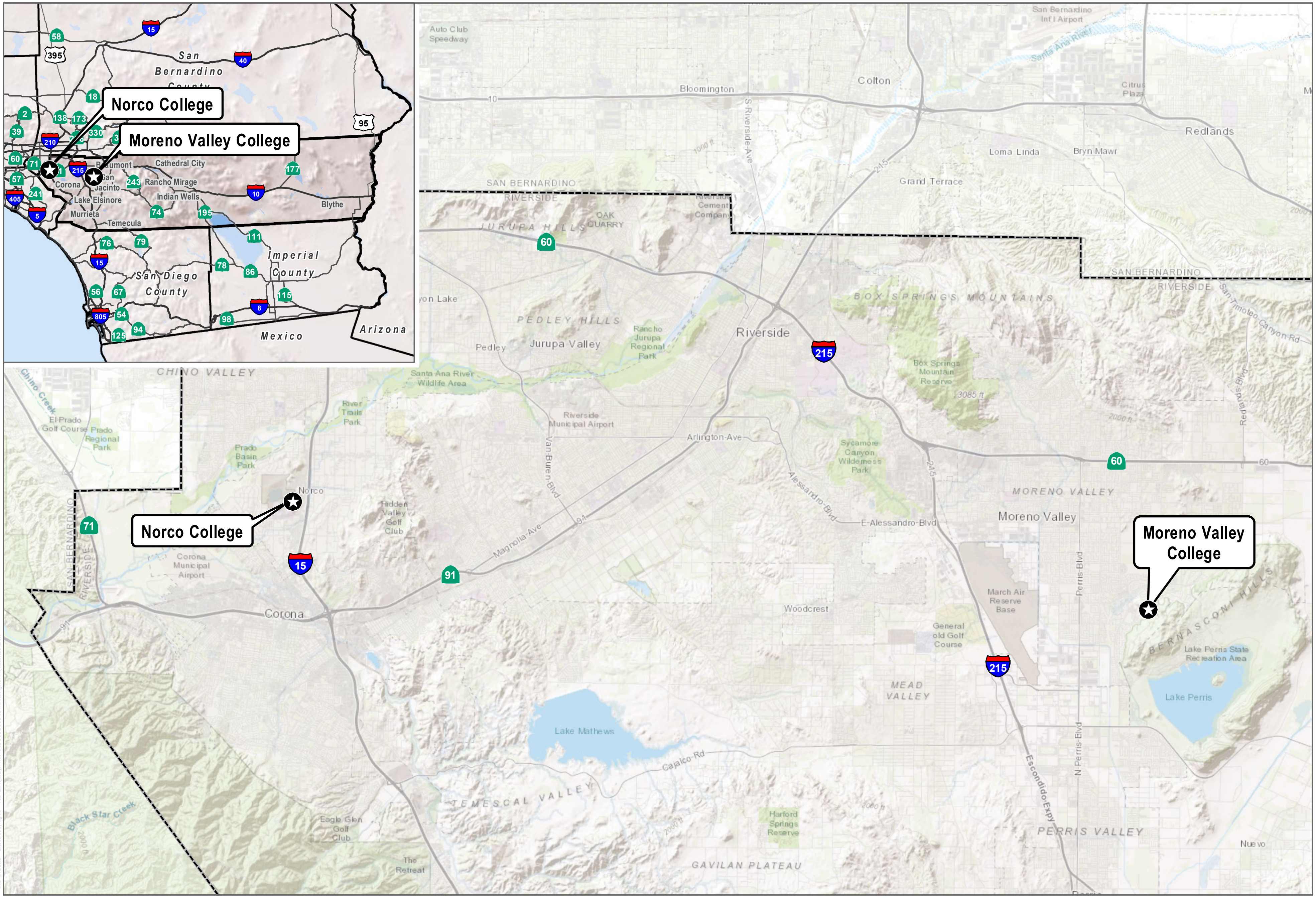
Warren, C.N. 1964. "Cultural Change and Continuity on the San Diego Coast." Unpublished PhD dissertation; University of California, Los Angeles.

Warren, C.N. 1968. "Cultural Tradition and Ecological Adaptation on the Southern California Coast." In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, 1–14. Portales, New Mexico: Eastern New Mexico University Contributions in Anthropology.

Warren, C.N., G. Siegler, and F. Dittmer. 2004. "Paleoindian and Early Archaic Periods." In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. Encinitas, California: ASM Affiliates.

White, R.C. 1963. "Luiseno Social Organization." *University of California Publications in American Archaeology and Ethnology* 48(2): 91–194. Berkeley, California: University of California.

Appendix A
Figures



SOURCE: Riversdie County 2022; ESRI World Topographic Map

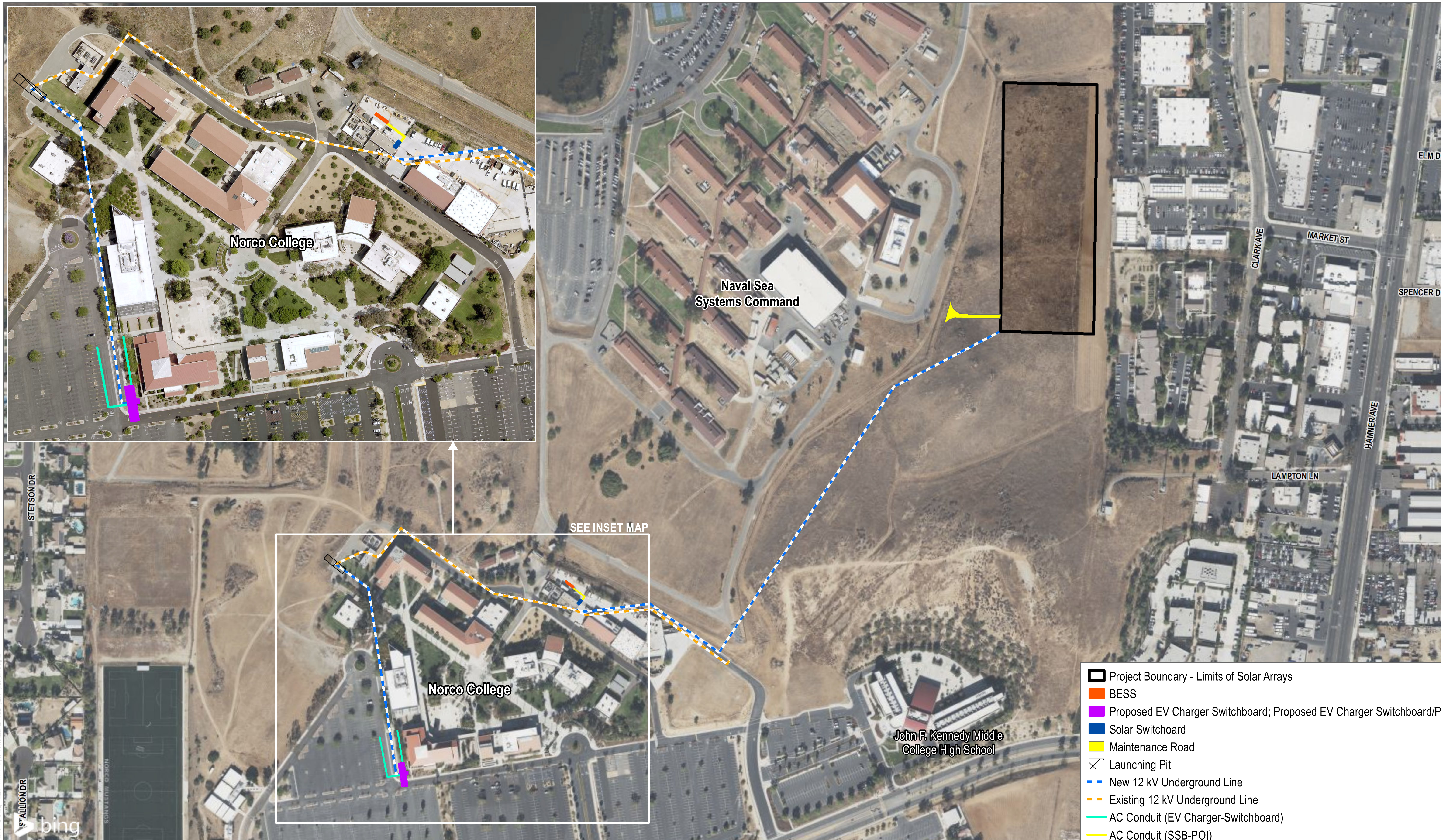
DUDEK

0 2 4 Miles

FIGURE 1

Project Locations

Riverside Community College District Solar Plan MND



SOURCE: SUNPOWER 2021; Riverside County 2020, 2022; Bing Maps

DUDEK

0 150 300 Feet

FIGURE 2A

Project Site - Norco College

Riverside Community College District Solar Plan MND

SOURCE: SUNPOWER 2021; Riverside County 2022; Bing Maps

DUDEK

0 100 200 Feet

FIGURE 2B

Project Site - Moreno Valley College

Riverside Community College District Solar Plan MND

Appendix B (Confidential)

EIC Records Search Results

Appendix C
NAHC SLF Search Results

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

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

June 16, 2022

Heather McDaniel McDevitt
DUDEK

Via Email to: karchipov@dudek.com

Re: RCCD Solar Plan MND – Norco College (PN 14415) Project, Riverside County

Dear Ms. McDevitt:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the tribes on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

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

June 16, 2022

Heather McDaniel McDevitt
DUDEK

Via Email to: karchipov@dudek.com

Re: RCCD Solar Plan MND – Moreno Valley College (PN 14415) Project, Riverside County

Dear Ms. McDevitt:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment