City of Lancaster
Revised Initial Study

1. Project title and File Number: Antelope Valley Transit Authority Solar Project: Site Plan Review (SPR) 21-07

2. Lead agency name and address: City of Lancaster
Development Services Department
Community Development Division
44933 Fern Avenue
Lancaster, California 93534

3. Contact person and phone number: Jocelyn Swain, Senior Planner
City of Lancaster
(661) 723-6100

4. Location: ±43 acres at the southeastern corner of Avenue L-8 and 6th Street West

Assessor Parcel Numbers: 3128-010-026, 3128-013-001, 3128-013-002, 3128-013-004, 3128-013-012, 3128-013-013, 3128-013-014 (acquisition only) (see Figure 1)

5. Applicant name and address: Antelope Valley Transit Authority
42210 6th Street West
Lancaster, California 93534

6. General Plan designation: Light Industrial (six development parcels) and Office Professional (acquisition only parcel)

7. Zoning: LI (six development parcels) and OP (acquisition only parcel)

8. Description of project:

The Antelope Valley Transit Authority (AVTA), headquartered in Lancaster, California has converted their bus fleet to electric vehicles. To support the additional electrical demand needed for the bus recharging stations, the AVTA is proposing to construct a photovoltaic (PV) solar energy project on a 43-acre site comprised of seven parcels adjacent to the existing AVTA bus depot. The recharging stations would be located at the bus depot and are not part of this project. The proposed solar energy project would tie into the existing Southern California Edison (SCE) grid. The project is situated on the southeastern corner of the intersection of Avenue L-8 and 6th Street West in Lancaster, east of State Route 14 (SR-14) and west of Sierra Highway (Figure 1).

The proposed project consists of the construction, operation, and eventual decommissioning of a 5.72 megawatt (MW) direct current (DC)/4.38 MW alternating current (AC) PV solar energy project. The DC number refers to the peak capacity of all power generated by the solar panels, and the AC number refers to the official power production rating indicating the electricity transported on the utility grid and used in homes and businesses. A piece of equipment called an inverter converts the DC electrical power from the panels into AC power to be distributed on the grid for use in homes and businesses. For purposes of this document and to be consistent with how solar projects are typically characterized, the DC power generated by the panels is what is discussed here. The solar panels would be installed on a ground-mounted solar tracker system and would be Tier 1 monocrystalline solar modules manufactured by Trina Solar. Tier 1 refers to the length of time that the manufacturer has been in business and the reliability of the product. Monocrystalline solar panels are panels that are most efficient because the solar cells are cut from a single source of silicon. Associated infrastructure for the solar arrays (system of panels) would include tracker foundations and racking, power inverters, transformers, electrical enclosures, data metering and monitoring hardware, overhead cable runs, concrete equipment pads, interior access pathways, and perimeter fencing.

The project would be constructed as three solar arrays, as shown on Figure 2. The first array, referred to as the northwest meter or north solar array, would be constructed on a 10-acre parcel northwest of the bus depot. Panels and associated internal roads and infrastructure inside a fence area would cover approximately 5.5 acres of this parcel and would generate 992 kilowatts (kW) (0.992 MW) of power. A small area between the north solar array and the existing bus depot would be used for future bus parking (Figure 3).

The second array identified as the east meter would be constructed to the northeast of the bus depot on three parcels totaling approximately 20 acres and consist of ground mount solar tracker system of 3,391.47 kilowatt (kW) as well as a battery energy storage system of 2,055kW/8,220 kilowatt hour (kWh) installed on the existing AVTA property (Figure 4). Panels and associated infrastructure would cover approximately 17 acres of these parcels.

The third array referred to as the west meter would be constructed to the southeast of the bus depot on a 10-acre parcel (with small overlap onto parcels adjacent to the north) and consist of ground mount solar tracker system of 1,653.08 kW as well as a battery energy storage system of 1,370kW/5,480kWh installed on the existing AVTA property (Figure 5). Panels and associated infrastructure would cover approximately 8.5 acres of this parcel.

A summary of the parcels, parcel acreage, solar system acreage, and which solar array is associated with each parcel is provided in Table 1. Overall, approximately 31 acres of the 43-acre site would be covered with the solar arrays and associated roads, fencing, and infrastructure.

Table 1 Parcel Summary

Assessor Parcel Number (APN)	Approximate Total Parcel Acreage	Approximate Parcel Coverage by Solar System	Solar Array
3128-010-026	10.1	5.5	Northwest Meter
3128-013-001	5.1	5	East Meter
3128-013-002	2.5	2.5	East Meter
3128-013-004	9.7	7	East Meter
3128-013-012	2.5	2.5	East Meter
3128-013-013	10.1	8.5	West Meter
3128-013-014	3.1	No solar installed on this parcel	No solar installed on this parcel
Total	**43.2**	**31.0**	

The solar arrays are proposed on undeveloped lands and would be visible from the bus depot, the Antelope Valley Courthouse parking lot, and from 6th Street West. Construction and fire access to the north solar array would be from 6th Street West, and 4th Street West would be used to access the other two arrays. An access road would be installed around the perimeter of each array, and internal access roads would be provided for maintenance of panels and equipment (Figure 6). Panels and associated equipment would be constructed on compacted native soil. Two drainages (washes) that traverse the site would be avoided as discussed below in Section IV.

The project is proposed to be constructed in approximately 7 months, estimated to begin in spring of 2022. Table 2 provides a summary of construction activities and their duration, as well as equipment and personnel needed. Construction activities would be scheduled between 7:00 AM and 5:00 PM, Monday through Friday.

Table 2 Summary of Construction Activities

Construction Activities	Duration (Days)	Equipment Type and Number	Personnel
Site Grubbing and Preparation	10	Skid Steer (1), Motor Grader (1), Water Truck	6
Construction			
Site Fences	20	Forklift (1), Flatbed Truck (1), Auger (1)	6
Structures	65	Backhoe (1), Forklift (2), Pile Driver (2)	12
Electrical	90	Trencher (1), Backhoe (2), Crane (1), Forklift (3)	25

Construction would consist of the following steps:

- Preparation of work areas by grading using excavators and water trucks.
- Installation of fencing.
- Trenching and installation of conduits followed by backfilling and compacting dirt to close trenches.
- Installation of piers, and racking and tracker motors.
- Installation of the modules, conduits, and wiring.
- Excavation and forming of equipment pads and installation of conduits.
- Installation of inverters, switches, and transformers.
- Installation of overhead cables to bus depot facility.
- Installation of concrete battery pads and conduit for solar and battery interconnection into existing equipment.
- Installation of monitoring system, including monitoring communications equipment.

The project is expected to produce 13,186 megawatt hours (MWh) for the first year in service. Due to solar panel degradation, electricity production is expected to decrease by approximately 0.5 percent per year. Over the 25-year life span of the project, it is estimated that a total of 313,376 MWh of energy would be produced.

Once operational, the facility would be monitored remotely. Normal preventative maintenance and routine inspections would occur as necessary for panel washing and vegetation control/ routine maintenance. During the annual routine maintenance inspection, the entire site would be inspected for signs of deterioration or repair needs. Emergency maintenance and repairs would occur immediately after the failure occurs.

The estimated lifespan of the solar arrays is 25 years. If it is determined that the facility is no longer needed, the site would be decommissioned, and all equipment would be removed and disposed of in compliance with City of Lancaster requirements and in accordance with applicable local and state regulations. Grading of the site would be minimized to the greatest extent practical, and the site would be restored to preconstruction conditions where feasible in compliance with City of Lancaster requirements. A Construction Waste Management Plan would be required at the time of decommissioning that would include recycling and/or reuse measures to reduce the amount of waste materials sent to the landfill. The solar panel provider has a recycling program that recovers 80 percent of panel materials.

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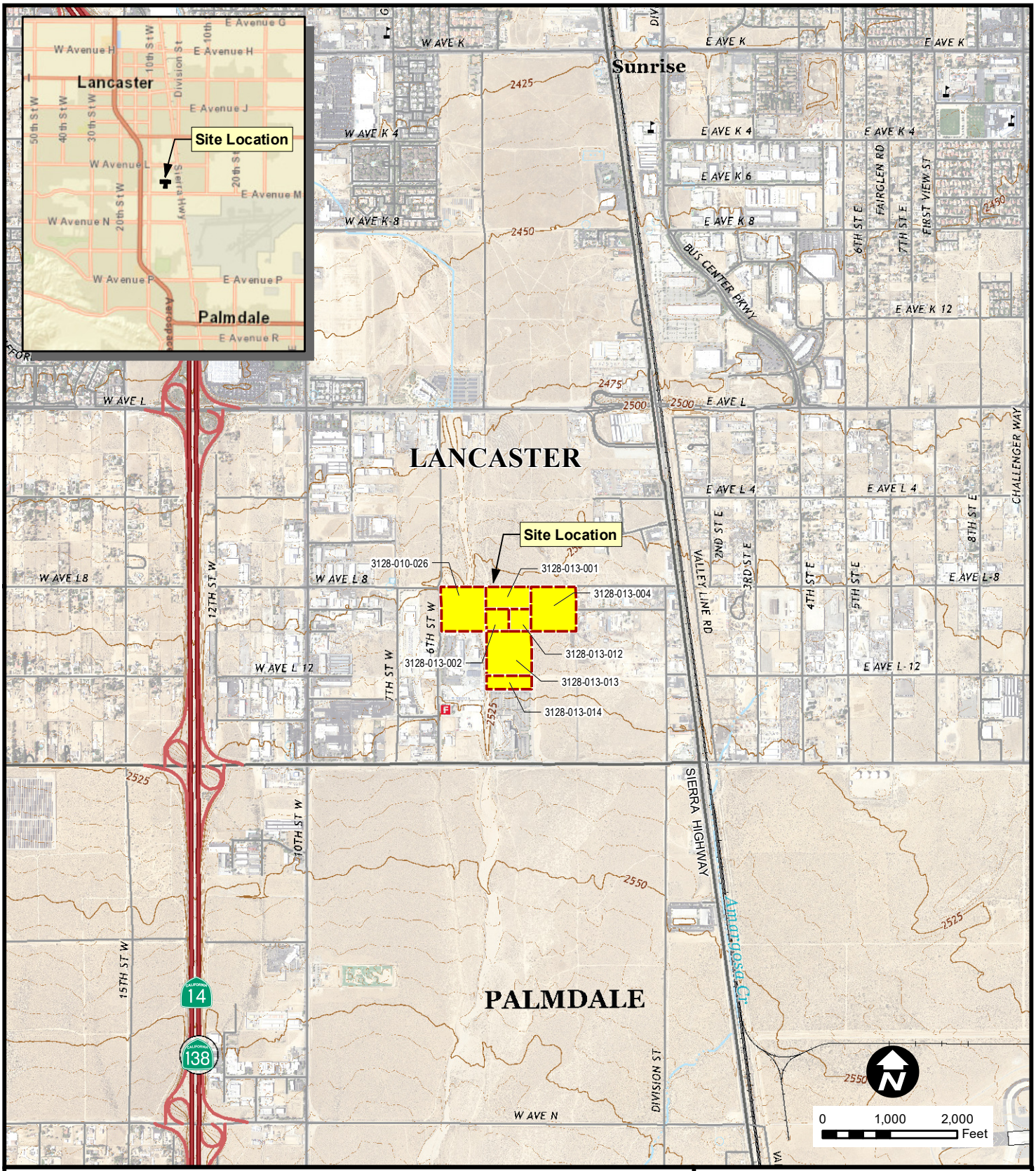

Parcel Boundary

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 1

Site Location Map

TETRA TECH

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Fence

Project Setback

PV Trench

Future Bus Parking

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 2

Photovoltaic System Layout

TETRA TECH

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- Fence
- Project Setback
- PV Trench
- Future Bus Parking
- Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 3

Photovoltaic System Layout (Northwest Meter)

TETRA TECH

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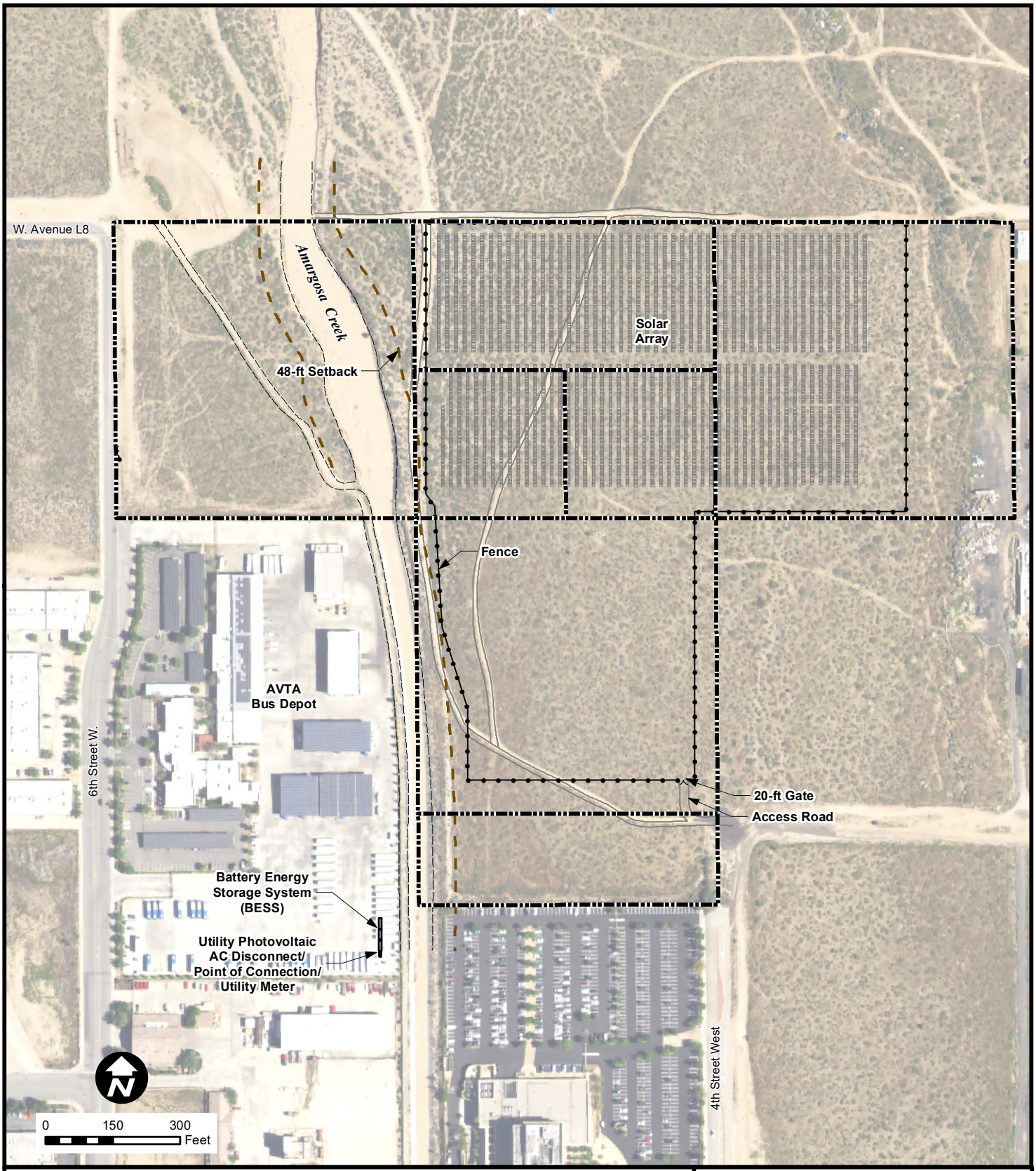

Fence

Project Setback

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 4

Photovoltaic System Layout (East Meter)

TETRA TECH

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Fence

Project Setback

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 5

Photovoltaic System Layout (West Meter)

TETRA TECH

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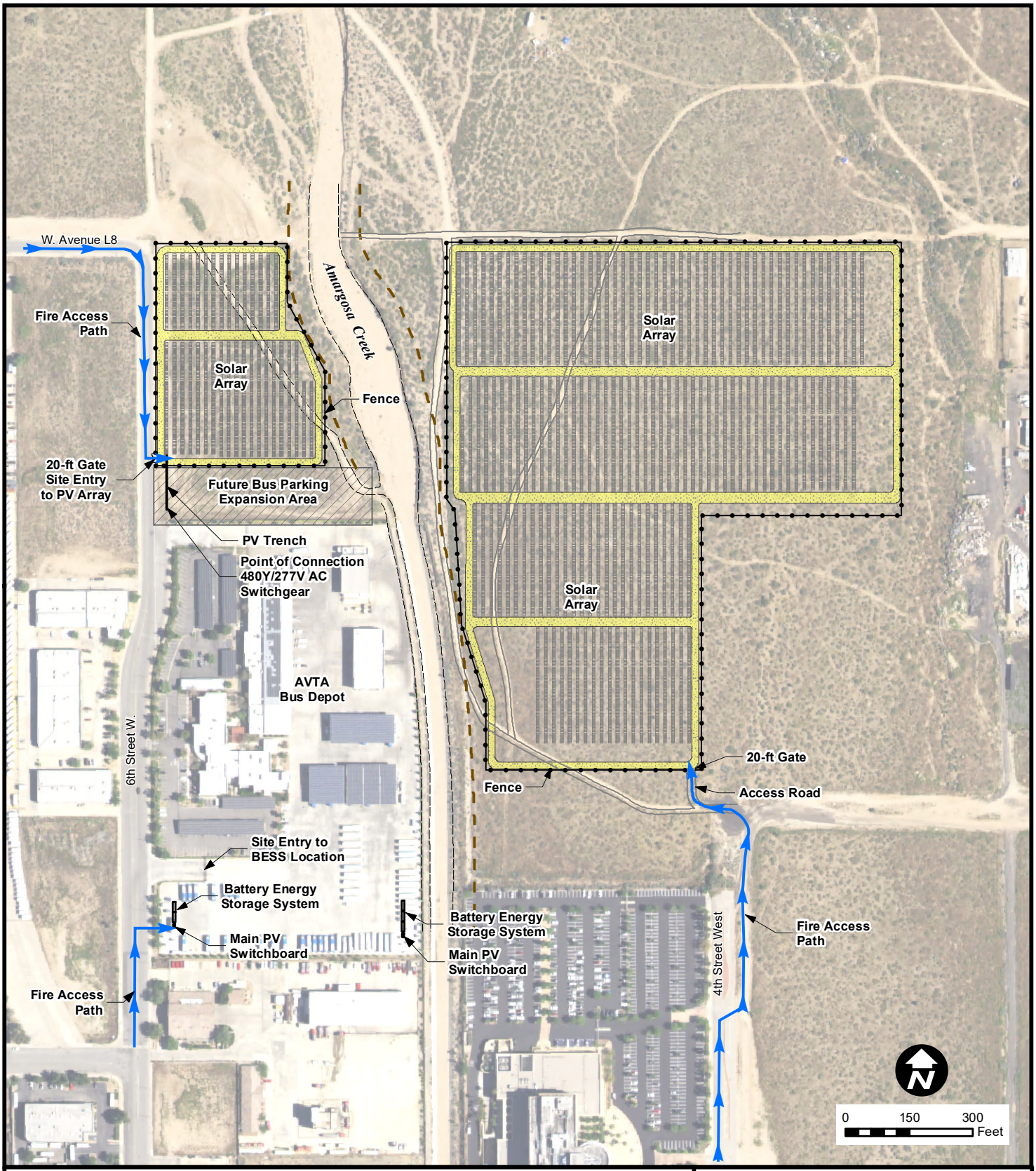

Fence
Project Setback
PV Trench
Fire Access Path
Interior Fire Access Road (20ft wide)
Future Bus Parking
Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 6

Construction and Fire Access

TETRA TECH

9. **Surrounding land uses and setting:** The project site is surrounded to the west and southwest by light industrial land uses, including the existing AVTA bus depot. Undeveloped lands are located to the north and southeast sides of the project site. A parking lot and the Los Angeles Superior Court/Michael D. Antonovich Antelope Valley Courthouse is located south of the project site. A couple of single family residences (legal non-conforming) are located to the east of the project site along Avenue L-8 and Avenue L-9. Table 3 provides existing City of Lancaster zoning and land uses for the areas surrounding the proposed project site.

Table 3 Existing Zoning and Land Uses for Surrounding Areas

Direction from Project Site	Zoning[1]	Land Use
North	Light Industrial	Vacant
East	Light Industrial	Vacant, industrial uses, and legal non-conforming residential uses
South	Public	Courthouse
West	Light Industrial	Vacant, AVTA

[1] City of Lancaster Zoning Map

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

Approvals from other public agencies for the proposed project include, but are not limited to, the following:

- California Department of Fish and Wildlife
- Lahontan Regional Water Quality Control Board
- Antelope Valley Air Quality Management District
- Los Angeles County Waterworks District 40
- Los Angeles County Fire Department
- Southern California Edison (SCE)

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.?

In accordance with Assembly Bill (AB) 52, consultation letters for the proposed project were sent to ten individuals associated with seven tribes either identified by the Native American Heritage Commission and/or who requested to be included in the process. These letters were mailed on June 3 via certified return receipt mail. Table 4 identifies the tribes, the person to whom the letter was directed and the date the letter was received.

Table 4 Tribal Notification

Tribe	Person/Title	Date Received
Serrano Nation of Mission Indians	Wayne Walker/Co-Chairperson	June 9, 2021
Fernandeno Tataviam Band of Mission Indians	Rudy Ortega/Tribal President	June 7, 2021
Morongo Band of Mission Indians	Robert Martin/ Chairperson	June 7, 2021
Quechan Tribe of the Fort Yuma Reservation	Jill McCormick/Historic Preservation Officer	June 10, 2021
San Manuel Band of Mission Indians	Jessica Mauck/Director of Cultural Resources	June 7, 2021
San Fernando Band of Mission Indians	Donna Yocum/Chairperson	June 11, 2021
Gabrieleno Band of Mission Indians – Kizh Nation	Andrew Salas/Chairman	June 7, 2021
Morongo Band of Mission Indians	Ann Brierty/Tribal Historic Preservation Officer	June 7, 2021
Fernandeno Tataviam Band of Mission Indians	Jairo Avila/Tribal Historic and Cultural Preservation Officer	June 7, 2021
Serrano Nation of Mission Indians	Mark Cochrane/Co-Chairperson	July 17, 2021

Responses were received from two of the tribes: Fernandeno Tataviam Band of Mission Indians and San Manuel Band of Mission Indians. No concerns associated with specific tribal resources were identified. However, tribal resources are known to be in the general area/Antelope Valley and the project site has never been developed. As such, mitigation measures were requested by the tribes to ensure the proper handling and notification in the event that cultural resources are encountered during construction activities and the presence of a tribal monitor during ground disturbing activities. These measures have been included in the cultural resources section.

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/Soils	__	Greenhouse Gas Emissions	__	Hazards & Hazardous Materials
__	Hydrology/Water Quality	__	Land Use/Planning	__	Mineral Resources
__	Noise	__	Population/Housing	__	Public Services
__	Recreation	__	Transportation	__	Tribal Cultural Resources
__	Utilities/Service Systems	__	Wildfire	__	Mandatory Findings of Significance

DETERMINATION

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.

__X__ 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 (EIR) 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 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Jocelyn Swain, Senior Planner

1/21/22
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 EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Use. 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 w3here 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.

1.0 ENVIRONMENTAL ANALYSIS

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In non-urbanized areas, substantially degrade the existing visual character or quality or 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?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views of the area?			X	

a. The City of Lancaster Master Environmental Assessment (LMEA) for the General Plan identifies five scenic areas in the City and surrounding area (RBF Consulting 2009):

- The foothills area southwest of the project site.
- Little Buttes northwest of the project site.
- Quartz Hill southwest of the project site.
- Piute Ponds north of the project site.
- Little Rock Wash east of the project site.

These scenic areas are more than three miles from the site. The project site is not visible from any of these scenic areas. Views of these scenic areas are not visible from the project site or the immediately surrounding roadways. Views of the Tehachapi mountains to the north along with the mountain ranges to the south and west are visible from the project site and adjacent roadways. With implementation of the proposed project, these views would not change and would continue to be available from the roadways and project site. Therefore, impacts would be less than significant.

b. The project site does not contain rock outcroppings or historic buildings, and is not located along or adjacent to a State scenic highway. The site does contain Joshua trees which would be removed during project implementation. However, as the project site is not located along a Scenic highway, no impacts would occur.

c. Development of the project would change the visual characteristics of the site from undeveloped desert to a solar project. With development of the site, the view available from the surrounding land uses would be changed from undeveloped desert to a solar facility. The solar facility is compatible with the surrounding land uses. In addition, the solar project would be constructed in conformance with the City of Lancaster's General Plan and zoning requirements for the area. Therefore, impacts would be less than significant.

d. As the site is currently undeveloped, no light is currently being generated. Light in the area is generated by adjacent light industrial uses surrounding the site and the handful of legal non-conforming residences located to the east/north-east. Once developed, the project would not require lighting except for light standards that may be required for security at project access points. Any lighting that may be needed would be directed downward into the project site and not cause significant nighttime impacts to the viewing public. During the day, solar projects have the potential for generating glare, a more continuous source of excessive brightness, and glint, a momentary flash of light, that may cause impacts to members of the viewing public. The proposed project would be constructed in an area primarily dominated by light industrial uses. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation	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 Department of 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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined in Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

a. Land is designated by the California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (FMMP) as one of the following as it relates to agriculture: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land. A review of the Farmland Map for Los Angeles County has designated the project site "Other Land" (California Department of Conservation 2018). This designation has been defined by the California Department of Conservation as "land not included in any other mapping category". Therefore, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, and no impacts would occur.

b. The project site is not zoned for agricultural use and is not under a Williamson Act contract. Therefore, no impacts would occur.

c-d. According to the City of Lancaster's General Plan, there are no forests or timberlands located within the City of Lancaster. Therefore, the proposed project would not result in the rezoning of forest or timberland and would not cause the loss of forest land or the conversion of forest land to non-forest land. Therefore, no impacts would occur.

e. See responses to Items IIa-d. No impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?				X
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?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?		X		
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

a. The Clean Air Act Amendments of 1990 (CAA) requires states to develop State Implementation Plans (SIPs) to state how they will attain or maintain National Ambient Air Quality Standards (NAAQS). SIPs are a compilation of new and previously approved plans, programs, district rules, state regulations and federal controls. States and local air quality management agencies prepare SIPs for approval by the U.S. Environmental Protection Agency (USEPA). SIPs are in part, based on regional population, housing, and employment projections reflected in local general plans.

To minimize impacts to air quality, proposed projects must be consistent with SIPs and local general plans. A proposed project that has the potential to impact a general plan also has the potential to impact the SIP. In general, a proposed project would be inconsistent with a general plan if it is constructed in a land use that is not designated for its construction (e.g., a manufacturing plant built on a parcel designated for a school would not be consistent with the general plan) or if its construction resulted in an increase in population beyond what is accounted for in the general plan.

The applicable air quality plan for the City of Lancaster is the Antelope Valley Air Quality Management District (AVAQMD) SIP, which is primarily comprised of the AVAQMD's Rule Book. The proposed project would be conditioned to comply with all AVQMD rules.

Additionally, the proposed project would be constructed in the City of Lancaster and be subject to the requirements of the City of Lancaster's Municipal Code. The land use of the six parcels proposed for development as a solar project is designated as Light Industrial. The proposed project would involve installing and operating a solar energy system which would be compatible with the Light Industrial designation and therefore, would not be anticipated to result in either a land use re-designation or an increase in population. Thus, the proposed project would not conflict with or obstruct implementation of the SIP. Therefore, no impacts would occur.

b. Pursuant to the CAA, the USEPA established NAAQS for pollutants considered harmful to public health and the environment which are classified as primary and secondary standards. Primary standards prescribe the maximum permissible concentration in the ambient air and are required to protect public health. Secondary standards specify levels of air quality required to protect public welfare, including materials, soils, vegetation, and wildlife, from any known or anticipated adverse effects. NAAQS are established for six pollutants (known as criteria pollutants): ozone (O_3), particle pollution (i.e., respirable particulate matter less than 10 microns in diameter [PM_{10}] and respirable particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). The California Air Resources Board (CARB) has also established air quality standards, known as the California Ambient Air Quality Standards (CAAQS). The CAAQS are generally more stringent than the NAAQS and include standards for all the criteria pollutants listed under NAAQS plus sulfates (SO_4), hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particulate matter.

The USEPA classifies the air quality within an area with regard to its attainment of the NAAQS for each criteria pollutant. An area with air quality better than the NAAQS for a specific pollutant is designated as being in attainment for that pollutant. Any area not meeting the NAAQS is classified as a nonattainment area. Where there is a lack of data for the USEPA to make an attainment determination, the area is designated as unclassified and is treated as an attainment area until proven otherwise. Similarly, at the state level CARB classifies attainment in California based on the CAAQS. The proposed project is within the Los Angeles County portion that is subject to the AVAQMD regulations. This portion of the Los Angeles County is in attainment/unclassified for all NAAQS except O_3, and all CAAQS, except O_3, and PM_{10} (California Air Resources Board 2021).

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (14 CCR Section 15355). Cumulative impacts are similar to direct and indirect impacts of the project. Air districts establish and rely in part on emission thresholds to ensure that proposed projects will not contribute to or cause an exceedance of air quality standards during construction and/or operation. The AVAQMD significance thresholds for criteria pollutants are provided in Table 5.

Table 5 AVAQMD Criteria Pollutant Significance Thresholds

Criteria Pollutant	Daily Threshold (Pounds)	Annual Threshold (Tons)
Carbon Monoxide (CO)	548	100
Oxides of Nitrogen (NO_x)	137	25
Volatile Organic Compounds (VOC)	137	25
Oxides of Sulfur (SO_x)	137	25
Particulate Matter (PM_{10})	82	15
Particulate Matter ($PM_{2.5}$)	65	12
Hydrogen Sulfide (H_2S)	54	10
Lead (Pb)	3	0.6

The proposed project would generate temporary emissions of criteria pollutants during its construction stage. Activities and emissions occurring during construction would stop once the proposed project is completed. Operational emissions would be minimal and result from normal preventative maintenance and routine inspections, which would consist of vehicle trips occurring on a monthly or semi-monthly basis as needed.

Air emissions resulting from construction, operation, and decommission of the proposed project were calculated based on a scenario where each equipment piece in each phase runs simultaneously. This approach assumes maximum daily operating time for all equipment assigned in each construction phase (e.g., site preparation and construction) and, therefore, maximum possible emissions that can occur on a daily basis. Air emissions were calculated using the California Emissions Estimator Model (CalEEMod). CalEEMod is widely accepted to provide a uniform platform to estimate potential emissions resulting from construction and operation activities of land use projects. The model uses pre-programmed algorithms to calculate emissions based on data entered for each specific project. The algorithms are designed to take information such as project size; construction length; vehicle and equipment types; number of vehicle trips, trip lengths; and equipment operating hours to calculate emissions of criteria pollutants and greenhouse gases (GHG). Emissions calculations provided in this document factor dust control measures such as those prescribed in AVAQMD Rule 403 and off-road vehicles using on average Tier 4 Interim engines (i.e., a combination of Tier 3 and Tier 4 engines). Operational emissions would be minimal, based on single monthly trips to the site for the purpose of cleaning and/or conducting necessary maintenance as needed

CalEEMod input values and calculated air emission results for the proposed project are provided as Appendix A. Calculated emissions are summarized and compared to AVAQMD thresholds in Tables 6 and 7 for construction and operation of the project; respectively.

Table 6 Estimated Construction and Decommissioning Emissions

	Daily Emissions (pounds [lbs]/day)						Annual Emissions (tons/year)					
	NO_x	**VOC**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_x**	**NO_x**	**VOC**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_x**
2021 Construction	4.8	0.3	9.0	0.2	0.1	0.0	0.046	0.003	0.088	0.002	0.000	0.000
2022 Construction	15.4	1.1	29.7	0.7	0.2	0.0	0.606	0.044	1.172	0.029	0.01	0.002
2047 Decommissioning	13.9	0.6	22.9	0.5	0.2	0.0	0.209	0.009	0.344	0.007	0.002	0.000
Significance Threshold	**137**	**137**	**548**	**82**	**65**	**137**	**25**	**25**	**100**	**15**	**12**	**25**
Exceeds Threshold?	No	No	No	No	No	No	No	No	No	No	No	No

Table 7 Estimated Operational Emissions

	Daily Emissions (lbs/day)						Annual Emissions (tons/year)					
	NO_x	**VOC**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_x**	**NO_x**	**VOC**	**CO**	**PM_{10}**	**$PM_{2.5}$**	**SO_x**
Project Total	0.61	0.10	0.60	0.06	0.04	0.00	0.004	0.001	0.004	0.000	0.000	0.000
Significance Threshold	**137**	**137**	**548**	**82**	**65**	**137**	**25**	**25**	**100**	**15**	**12**	**25**
Exceeds Threshold?	No	No	No	No	No	No	No	No	No	No	No	No

Construction and operational air emissions resulting from the proposed project would not exceed the AVAQMD established daily thresholds.

Construction and operational emissions from the proposed project would contribute to overall emissions from construction and operation of other projects in the area. However, the project contributions would neither impact emissions identified in the General Plan nor exceed AVAQMD established thresholds. Therefore, impacts would be less than significant.

c. The proposed project is located in an area designated as light industrial and generally away from sensitive receptors (i.e., residences, schools, daycare centers, playgrounds, and medical facilities). There are a handful of legal non-conforming residential uses located to the east/northeast of the project site along Avenue L-8 and Avenue L-9. In addition, the proposed project is not listed among the project types with specific distance conditions with respect to sensitive receptors. Therefore, impacts would be less than significant with respect to emissions associated with construction and operation of the project.

However, since the construction of the proposed project would result in the disturbance of soil, it is possible that individuals working during construction at the site could be exposed to Valley Fever. Valley Fever or coccidioidomycosis (cocci), is primarily a disease of the lungs caused by the spores of the Coccidioides immitis fungus. The spores are found in soils, especially in the

desert southwest, become airborne when the soil is disturbed, and are subsequently inhaled into the lungs. After the fungal spores have settled in the lungs, they change into a multicelluar structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules. Symptoms include fever, cough, and tiredness.

Valley Fever is not contagious, and therefore, cannot be passed on from person to person. Most of those who are infected recover without treatment within six months and may develop a life-long immunity to the fungal spores. Antifungal drug therapy is used in severe cases, especially in those patients with rapid and extensive primary illness, those who are at risk for dissemination of disease (dissemination in this case meaning that the fungal infection spreads from the lungs to other parts of the body in the same person), and those who have disseminated disease.

Nearby businesses as well as workers at the project site could be exposed to Valley Fever from fugitive dust generated during construction. There is the potential that cocci spores would be stirred up during excavation, grading, and earth-moving activities, exposing construction workers and nearby businesses to these spores and thereby to the potential of contracting Valley Fever. However, implementation of the mitigation measures below which require the applicant to implement dust control measures in compliance with AVAQMD Rule 403 and require the project operator to provide personal protective respiratory equipment to construction workers and provide information regarding Valley Fever to all construction personnel and visitors to the site, would minimize the risk of exposure to Valley Fever to a less than significant level.

Mitigation Measures

1. The Applicant shall submit a Dust Control Plan to the AVAQMD for review and approval in accordance with Rule 403, Fugitive Dust, prior to issuance of a grading or construction permit. This plan shall demonstrate adequate water or dust suppression measures to mitigate all disturbed areas.
2. Prior to ground disturbance activities, the project operator shall provide evidence to the City of Lancaster Development Services Director that the project operator and/or construction manager has developed a "Valley Fever Training Handout", training, and schedule of sessions for education to be provided to all construction personnel. All evidence of the training session materials, handout(s) and schedule shall be submitted to the Development Services Director within 24 hours of the first training session. Multiple training sessions may be conducted if different work crews will come to the site for different stages of construction; however, all construction personnel shall be provided training prior to beginning work. The evidence submitted to the Development Services Director regarding the "Valley Fever Training Handout" and Session(s) shall include the following:
    - A sign-in sheet (to include the printed employee names, signature, and date) for all employees who attended the training session.
    - Distribution of a written flier or brochure that includes educational information regarding the health effects of exposure to criteria pollutant emissions and Valley Fever.
    - Training on methods that may help prevent Valley Fever infection.
    - A demonstration to employees on how to use personal protective equipment, such as

respiratory equipment (masks), to reduce exposure to pollutants and facilitate recognition of symptoms and earlier treatment of Valley Fever. Where respirators are required, the equipment shall be readily available and shall be provided to employees for use during work. Proof that the demonstration is included in the training shall be submitted to the county. This proof can be via printed training materials/agenda, digital video disc (DVD), digital media files, or photographs.

The project operator also shall consult with the Los Angeles County Department of Public Health to develop a Valley Fever Dust Management Plan that addresses the potential presence of the Coccidioides spore and mitigates for the potential for Coccidioidomycosis (Valley Fever). Prior to issuance of permits, the project operator shall submit the Plan to the Los Angeles County Department of Public Health for review and comment. The Plan shall include a program to evaluate the potential for exposure to Valley Fever from construction activities and to identify appropriate safety procedures that shall be implemented, as needed, to minimize personnel and public exposure to potential Coccidioides spores. Measures in the Plan shall include the following:

- Provide High Efficiency Particulate Absorbent (HEPA)-filters for heavy equipment equipped with factory enclosed cabs capable of accepting the filters. Cause contractors utilizing applicable heavy equipment to furnish proof of worker training on proper use of applicable heavy equipment cabs, such as turning on air conditioning prior to using the equipment.
- Provide communication methods, such as two-way radios, for use in enclosed cabs.
- Require National Institute for Occupational Safety and Health (NIOSH)-approved half-face respirators equipped with minimum N-95 protection factor for use during worker collocation with surface disturbance activities, as required per the hazard assessment process.
- Cause employees to be medically evaluated, fit-tested, and properly trained on the use of the respirators, and implement a full respiratory protection program in accordance with the applicable Cal OSHA Respiratory Protection Standard (8 CCR 5144).
- Provide separate, clean eating areas with hand-washing facilities.
- Install equipment inspection stations at each construction equipment access/egress point. Examine construction vehicles and equipment for excess soil material and clean, as necessary, before equipment is moved off-site.
- Train workers to recognize the symptoms of Valley Fever, and to promptly report suspected symptoms of work-related Valley Fever to a supervisor.
- Work with a medical professional to develop a protocol to medically evaluate employees who develop symptoms of Valley Fever.
- Work with a medical professional, in consultation with the Los Angeles County Department of Public Health, to develop an educational handout for on-site workers and surrounding residents within three miles of the project site, and include the following information on Valley Fever: what are the potential sources/ causes, what are the common symptoms, what are the options or remedies available should someone be experiencing these symptoms, and where testing for exposure is

available. Prior to construction permit issuance, this handout shall have been created by the project operator and reviewed by the project operator and reviewed by the Development Services Director. No less than 30 days prior to any work commencing, this handout shall be mailed to all existing residences within a specified radius of the project boundaries as determined by the Development Services Director. The radius shall not exceed three miles and is dependent upon the location of the project site.

- When possible, position workers upwind or crosswind when digging a trench or performing other soil-disturbing tasks.
- Prohibit smoking at the worksite outside of designated smoking areas; designated smoking areas will be equipped with handwashing facilities.
- Post warnings on-site and consider limiting access to visitors, especially those without adequate training and respiratory protection.
- Audit and enforce compliance with relevant Cal OSHA health and safety standards on the job site.

d. Construction and operation of the proposed project is not anticipated to create neither air emissions other than those already discussed above nor objectionable odors. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?		X		
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?				X
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?				X
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?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

a. A biological reconnaissance survey was conducted on October 8, 2020 to determine if habitat present at the site has the potential to support sensitive biological resources and is provided as Appendix B (Tetra Tech, Inc. 2021). The habitat assessment included an evaluation by a qualified biologist of habitat at the site for suitability to support desert tortoise (*Gopherus agassizii*), a State of California and federal listed as threatened reptile; Mohave ground squirrel (MGS) (*Xerospermophilus mohavensis*), a State of California listed as endangered mammal; and

burrowing owl (*Athene cunicularia*), a State of California Species of Special Concern. In addition, while desert tortoise (*Gopherus agassizii*) have not been previously recorded in the vicinity, suitable habitat for tortoise is present at the site and a protocol survey (United States Fish and Wildlife Service 2010, revised 2018) for this species was completed on October 8, 2020. In addition, a focused survey for reptiles was conducted at the site on December 3, 2021. Tables 8 and 9 list the plants and wildlife, respectively, that were observed during the October 2020 reconnaissance survey of the project site, with one additional species observed during the December 2021 focused survey.

Table 8 Plants Observed During the Reconnaissance Survey of the Project Site

Desert tea (*Ephedra californica*)	Joshua tree (*Yucca brevifolia*)	Foxtail chess* (*Bromus madritensis*)
Common Mediterranean grass* (*Schismus barbatus*)	Big sagebrush (*Artemisia tridentate)*	Rabbit brush (*Ericameria nauseosus*)
Tarweed (*Hemizonia* sp.)	Short spine horse brush (*Tetradymia spinosa)*	Wire lettuce (*Stephanomeria pauciflora)*
Fiddleneck (*Amsinkia menziesii*)	Sahara mustard* (*Brassica tournefortii*)	Golden cholla (*Cylindropuntia echinocarpa*)
Dodder (*Cuscuta* sp.)	Four-wing saltbush (*Atriplex canescens*)	Russian thistle* (*Salsola tragus*)
Winterfat (*Krascheninnikovia lanata*)	Dove weed (*Croton setiger*)	Carob tree* (*Ceratonia siliqua*)
Slender wooly buckwheat (*Eriogonum gracile*)	Tree of heaven* (*Ailanthus altissima*)	Peach thorn (*Lycium cooperi*)
Salt cedar* (*Tamarix ramosissima*)	Creosote (*Larrea tridentata*)	

*Denotes non-native plant

Table 9 Wildlife Observed During the Reconnaissance Survey of the Project Site

Feral pigeon (*Columba livia*)*	Mourning dove (*Zenaida macroura*)	American raven (*Corvus corax*)
Prairie falcon (*Falco mexicanus*)	House finch (*Haemorhous mexicanus*)	California quail (*Callipepla californica*)
White-crowned sparrow (*Zonotrichia leucophrys*)	Northern flicker (*Colaptes auratus*)	Common starling (*Sturnus vulgaris*)*
Ash-throated fly catcher (*Myiarchus cinerascens*)	Black-tailed jackrabbit (*Lepus californicus*)	Cottontail rabbit (*Sylvilagus audubonii*)
Antelope ground squirrel (*Ammospermophilus leucurus*)	California ground squirrel (*Otospermophilus beecheyi*)	Common night lizard (*Xantusia vigilis*)**

*Denotes non-native wildlife
**Observed on December 3, 2021

The site was noted to be highly disturbed due to off-road vehicle travel, evidence of past transient encampments and piles of trash and debris. No desert tortoise or sign of desert tortoise were observed. No burrows that may be used by desert tortoise, scat or remains were observed. Due to the adjacent land uses and condition of adjacent areas, desert tortoise are very unlikely to wander onto the project site from these areas.

No burrowing owl or sign of burrowing owl at the site were encountered during surveys conducted at the site on October 8, 2020 and December 3, 2021, although the site has moderately suitable habitat for burrowing owl. Due to the timing of the surveys outside of nesting season, no active passerine (songbirds) or raptor nesting activity were observed. Past nests were observed in Joshua trees indicating that the site is suitable for nesting birds.

During a review of previously recorded species in the California Natural Diversity Database, northern California legless lizard (*Anniella pulchra*) and coast horned lizard (*Phrynosoma blainvillii*) were noted to have been observed within 1 to 5 miles from the site. Based on proximity of these past observations, it was determined that there could be a high potential for their presence as the site. A focused survey of the site for reptiles was conducted on December 3, 2021. No northern California legless lizard or coast horned lizard were observed during the focused survey. No mitigation is recommended.

Optimal habitats for Mohave ground squirrel (MGS) are open and relatively undisturbed desert scrub, alkali desert scrub, Joshua tree woodlands, and annual grasslands. While some common forage plants for MGS are present at the site, there are several factors present that would prevent this species from inhabiting the site, most notable the isolation of this area from other areas of habitat and the extremely high and constant level of past and current human and domestic animal presence, which has promoted species such as California ground squirrel to thrive throughout the site. In addition, no MGS have been observed in the area in over 100 years with the exception of a non-trapped detection over 35 years ago. These conditions result in an extremely low likelihood for MGS to inhabit the site and this species is assumed absent from the site.

Joshua trees have been designated as a Candidate species under the California Endangered Species Act (CESA) and as such are afforded the same protections as a listed species. The project has the potential to significantly impact the 56 Joshua trees observed on the site which were noted as predominantly in excellent condition (Appendix B). During the focused reptile survey conducted on December 3, 2021, one of the previously recorded Joshua trees was observed to have been knocked down, likely due to being struck by a vehicle. No other sensitive plants were identified during the survey.

The following mitigation measures are required to reduce impacts to nesting birds, burrowing owls, MGS and Joshua trees to less than significant levels.

Mitigation Measures

3. The applicant shall retain a qualified biologist who shall conduct burrowing owl protocol surveys on the project site in accordance with the procedures established by the California Department of Fish and Wildlife prior to the start of construction/ground disturbing activities March 7, 2012, Staff Report on Burrowing Owl Mitigation prior to the City issuing

construction permits. In California, the burrowing owl breeding season extends from 1 February to 31 August with some variance by geographic location and climate conditions. Survey protocol for breeding season owl surveys states four survey visits 1) at least one visit between February 15 to April 15, and 2) a minimum of three survey visits, at least three weeks apart between April 15 and July 15, with at least one visit after 15 June.

If burrowing owls are identified during the surveys, the applicant shall prepare an Impact Assessment and develop a Burrowing Owl Mitigation Plan in accordance with the 2012 Staff Report on Burrowing Owl Mitigation. The applicant shall contact the California Department of Fish and Wildlife (CDFW) to develop appropriate mitigation/ management procedures. The applicant shall submit a final Burrowing Owl Mitigation Plan to the City prior to the City issuing construction permits. The applicant shall implement all measures identified in the Burrowing Owl Mitigation Plan .

At a minimum, the following shall occur:

- If burrowing owls are identified during the non-nesting season, a qualified biologist shall install one-way gates to relocate the owl to a suitable nearby property. Upon confirmation that the burrow is empty, the burrow shall be collapsed.
- In the even that a breeding pair or female owl with offspring are present at the burrow, a buffer zone of at least 50 feet shall be established around the burrow until the offspring have fledged and left the burrow. No work shall occur within the buffer zone. The specific buffer zone shall be established in coordination with CDFW.

4. A nesting bird survey shall be conducted by a qualified biologist within 30 days prior to the start of construction/ground disturbing activities. If nesting birds are encountered, all work in the area shall cease until either the young birds have fledged, or the appropriate permits are obtained from the California Department of Fish and Wildlife. If active bird nests are identified during the survey, the applicant shall contact the California Department of Fish and Wildlife to determine the appropriate mitigation/management requirements. Impacts to nest will be avoided by delay of work or establishing a buffer of 500 feet around active raptor nests and 50 feet around other migratory bird species. An Avoidance Plan for full avoidance of impacts to nesting birds and/or burrowing owl is provided in the Biological Reconnaissance Survey report, Appendix B.
5. The applicant shall obtain an Incidental Take Permit from the California Department of Fish and Wildlife for MGS prior to the issuance of any construction-related permits.
6. The applicant shall obtain an Incidental Take Permit from the California Department of Fish and Wildlife for all Joshua trees on the site which would be impacted or removed during the construction and operation of the proposed project prior to the issuance of any construction related permits.

b. Two drainages are present at the site. Amargosa Creek that trends south to north is on the western side of the site. An unnamed drainage is on the eastern side of the site. During the reconnaissance survey on October 8, 2020, a survey for regulated waters was also completed (Appendix B). A follow-up confirmation of drainage features associated with the site was completed on February 19, 2021. Amargosa Creek and the unnamed drainage are part of the Antelope-Fremont Valleys Basin which is a closed topographic basin with no outlets to the ocean (U.S. Army Corps of Engineers 2017). The U.S. Army Corps of Engineers has determined that drainages within the Antelope-Fremont Valleys Basin that are tributaries to Rosamond,

Buckhorn and Rogers Lakes are isolated waters and not subject to Section 404 of the Clean Water Act (US Army Corps of Engineers 2017). As a result, Amargosa Creek and the unnamed drainage are isolated waters and not subject to Section 404 of the Clean Water Act. No riparian habitat was observed in Amargosa Creek although it was confirmed to be riverine habitat. As Amargosa Creek has field characteristics consistent with a riverine water system with defined bed to bank features, it is a regulated water of the state and subject to regulation by the CDFW and Regional Water Quality Control Board (RWQCB). While adjacent to the project, no project-related impacts to this regulated water would occur.

The unnamed drainage on the eastern side of the site has been disturbed by adjacent land uses. Within the project parcel boundary, this drainage is relatively undisturbed until it approaches the northeastern corner where it appears to be filled in due to soil excavations. Features of bed and bank are present for approximately 300 feet (for a total of 0.11 acres) within the site. Very close to the northeastern border of the site, off-site excavation of the drainage has caused a break in hydrology to the unnamed drainage. As the unnamed drainage has field characteristics consistent with a riverine water system with defined bed to bank features, it is a regulated water of the state and subject to regulation by the CDFW and RWQCB. No proposed project activities have been identified in this area.

The layout for the proposed solar project avoids disturbing or placing any project features in Amargosa Creek or the unnamed drainage. Access to the site during construction and operation by emergency responders would not require crossing either drainage (Figure 6) and, therefore, no impacts would occur.

c. As discussed previously, there are no State or federally protected wetlands on the project site as defined by Section 404 of the Clean Water Act. No impacts would occur.

d. The project site has not been identified as located in a Regional Habitat Linkage for regional movement of wildlife (Los Angeles County Department of Regional Planning 2014). The closest linkage/wildlife movement corridor to the project site has been identified from Rogers Dry Lake located within Edwards Air Force Base to the San Gabriel Mountains to the south. This linkage/corridor is more than 20 miles to the east of the site. No impacts would occur.

e. The proposed project would not conflict with any local policies or ordinances, such as a tree preservation policy, protecting biological resources. The proposed project would be subject to the requirements of Ordinance No. 848, Biological Impact Fee, which requires the payment of $770/acre to offset the cumulative loss of biological resources in the Antelope Valley resulting from development. Therefore, no impacts would occur.

f. There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or State habitat conservation plans which are applicable to the project site. The West Mojave Coordinated Habitat Conservation Plan only applies to federal land, specifically land owned by the Bureau of Land Management. In conjunction with the Coordinated Management Plan, a Habitat Conservation Plan (HCP) was proposed which would have applied to all private properties within the Plan Area. However, this HCP was never approved by the California Department of Fish and Wildlife nor was it adopted by the local agencies (counties and cities) within the Plan Area. As such, there is no HCP that is applicable to the project site and no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
b) Cause a substantial adverse change in the significance of an archaeological resources pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?				X

a-c. A cultural resources inventory and evaluation that included a file review and field reconnaissance was completed for the proposed project site and is included as Appendix C (Paleo Solutions, Inc. 2021a). The cultural resources inventory and evaluation for the project included a records search, archival research, field survey, evaluation of resources for eligibility to the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), and a buried site sensitivity analysis. The records search results indicate that there are no previously-recorded resources within the project Area of Potential Effect (APE). During the field survey conducted on October 9, 2020, five archaeological sites (R201009-88-01, -02, -05, -06, and -09) were identified within the project APE. All five resources consist of historic-age refuse scatters. An isolated prehistoric flake was also observed within Site R201009-88-01. No other prehistoric materials and no historic-age elements of the built environment were observed within the Project APE.

As a result of the resource evaluations, none of the five resources within the APE were recommended as eligible for the NRHP or CRHR. Therefore, there would be no effect to known historic properties (i.e., resources listed or eligible for inclusion in the NRHP) under Section 106 of the NHPA, and there would be no impact to known historical resources (i.e., resources listed or eligible for inclusion in the CRHR) under CEQA due to development of the site as a solar project. The buried site sensitivity analysis indicates that there is a low potential for buried prehistoric or historic-age archaeological resources at the site. Therefore, a less than significant impact would occur.

During the pedestrian survey of the site, no human remains including those interred outside of a dedicated cemetery were discovered. Therefore, no impacts would occur.

While no specific tribal resources were identified during the AB 52 process, mitigation measures were requested by the San Manuel Band of Mission Indians (Mitigation Measures 7 through 11) and the Fernandeno Tataviam Band of Mission Indians (Mitigation Measures 12 and 13) to ensure proper

handling and treatment of any previously unknown resources encountered on the project site and for tribal monitoring during ground disturbing activities. These measures have been included and are identified below. With incorporation of these measures, impacts would be less than significant.

Mitigation Measures

7. In the event that cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of the Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, the San Manuel Band of Mission Indians Cultural Resources Department (SMBMI) shall be contacted regarding any pre-contact and/or historic-era finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment.
8. If significant pre-contact and/or historic-era cultural resources, as defined by CEQA (as amended), are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to SMBMI for review and comment. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly.
9. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and County Coroner shall be contacted pursuant to State Health and Safety Code Section 7050.5 and that code enforced for the duration of the project.
10. The San Manuel Band of Mission Indians Cultural Resources Department (SMBMI) shall be contacted of any pre-contact and/or historic-era cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended), a cultural resources Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with SMBMI, and all subsequent finds shall be subject to this Plan. This plan shall allow for a monitor to be present that represents SMBMI for the remainder of the project, should SMBMI elect to place a monitor on-site.
11. Any and all archaeological/cultural documents created as part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Lead Agency for dissemination to SMBMI. The Lead Agency and/or applicant shall, in good faith, consult with SMBMI throughout the life of the project.
12. The applicant shall retain professional Native American monitor procured by the Fernandeno Tataviam Band of Mission Indians (FTBMI) to observe all clearing, grubbing, and grading operations within the proposed impact areas. If cultural resources are encountered, the Native American monitor will have the authority to request that ground-disturbing activities cease within 60 feet of discovery to assess and document potential finds in real time. One monitor will be required on-site for all ground-disturbing activities in areas designated through additional consultation. However, if ground-disturbing activities occur in more than one of the designated monitoring areas at the same time, then the parties can mutually agree to an

additional monitor, to ensure that simultaneously occurring ground-disturbing activities receive thorough levels of monitoring coverage.

13. The Lead Agency or applicant shall, in good faith, consult with the FTBMI on the disposition and treatment of any Tribal Cultural Resource encountered during all ground-disturbing activities.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficient?				X

a. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites in the region or State. Construction would be temporary and in compliance with AVAQMD regulations, and equipment would be maintained to optimal performance to reduce use of fuels. Once operational, the project would be generating clean electricity, thereby reducing the use of fossil fuels for electricity in the area. Therefore, a less than significant impact would occur.

b. The project is consistent with the City of Lancaster's Climate Action Plan (2017). The proposed alternative energy project will assist the City of Lancaster to meet its green energy goals. Therefore, no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?		X		
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?		X		
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?		X		
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?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

a. The project site is in a seismically active area, with the closest fault being the San Andreas fault which is over three miles south of the project area. Rupture of the San Andreas Fault within the City of Palmdale planning area would result in impacts to the region, including the project site. The project site is not located on an area that has been identified on an Alquist-Priolo Earthquake Fault Zoning Map in the LMEA (RBF Consulting 2009). The project would be constructed in accordance with seismic requirements of the Uniform Building Code (UBC). A less than significant impact would occur.

The project site as well as the region would be subject to intense seismic shaking associated with a large earthquake along the San Andreas Fault (RBF Consulting 2009). However, the project would be constructed in accordance with the seismic requirements of the Uniform Building Code adopted by the City and the facility would be unmanned. As such, impacts would be less than significant.

During a seismic event, liquefaction can occur when groundwater is within 50 feet of ground level and soils are poorly consolidated or relatively uncompacted. A review of the Study Area Seismic Hazards Map in the LMEA and the website for seismic hazards both show portions of the project site as being susceptible to liquefaction. Implementation of the following mitigation measure would reduce this impact to less than significant.

Mitigation Measure

14. The applicant shall prepare a geotechnical study for the project to address potential liquefaction potential at the site and shall implement the measures provided in that report prior to project implementation.

The project site is relatively level with minor relief so hazards from landslides during a seismic event are not likely to occur. For the solar project, the site would be rolled for installation of the solar panels. There would be no slopes that may fail during a seismic event once the project is built. No impacts would occur.

b. Site preparation would require grubbing and clearing of much of the vegetation present at the site. This would expose soils to erosion from wind and rain events. As more than one acre would be graded, the project would be required to comply with the State of California National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity. A site-specific Storm Water Pollution Prevention Plan (SWPPP) would also need to be prepared and implemented. The SWPPP will identify Best Management Practices (BMPs) that would control on-site and off-site erosion from storm events and wind. The SWPPP will also identify BMPs for accidental spills of hazardous materials. Oversight by the City of Lancaster will ensure compliance with any permit-related measures to control erosion generated by the project. In addition, dust would be controlled as discussed in Section III, Air Quality. Therefore, impacts would be less than significant.

c. Lateral spreading occurs when large blocks of intact, non-liquefied soil move down slope on a liquefied soil layer. Lateral spreading is often a regional event. For lateral spreading to occur, the liquefiable soil zone must be unconstrained laterally and free to move along sloping ground. The potential for subsidence and collapse are unlikely. However, as discussed in the response to item VII.a, the project site may be susceptible to liquefaction. Preparation of a geotechnical study and implementation of the measures therein would reduce this impact to less than significant.

d. Soils at the site have been classified as Hesperia fine sandy loam with a 0 to 2 percent slope (United State Department of Agriculture 2020). These soils are well drained and have a runoff class categorization of very low. As site soils are sandy in texture, and are not considered expansive, construction of the unmanned solar project would not create a substantial direct or indirect risk to life or property from expansive soils. No impacts would occur.

e. During construction, portable toilet/wash station facilities would be used by on-site workers. During routine or emergency repairs, portable toilet/wash station facilities would be mobilized to the site with the workers. No septic system would be included as part of project construction. No impacts would occur.

f. A paleontological technical study was prepared for the proposed project and is included as Appendix D (Paleo Solutions, Inc. 2021b). The paleontological potential of the project area was evaluated based on an analysis of existing paleontological data. According to the record and the literature searches, there are no previously recorded fossil localities within the project area. However, the Natural History Museum of Los Angeles County (LACM) reported that there are vertebrate fossil localities recorded in the project vicinity from sedimentary deposits similar to those that likely occur at depth in the project area (Paleo Solutions, Inc. 2021b). The Potential Fossil Yield Classification system was applied to the results of the analysis of existing data. Holocene-age younger alluvial deposits are estimated to be less than 11,000 years old and have a low paleontological potential because these deposits are too young to contain *in-situ* fossils. However, these younger deposits often overlie older geologic units with higher paleontological potential at depth. Pleistocene-age older alluvium, which may be present in the subsurface, has a moderate paleontological potential . The following mitigation measures are required to ensure that impacts to paleontological resources are less than significant.

Mitigation Measures

15. Excavations into the Holocene-age younger alluvial deposits will be initially spot-checked by a Qualified Paleontologist during excavations that exceed depths of 5 feet to check for underlying, paleontologically sensitive Pleistocene-age older alluvium. If it is determined by the Qualified Paleontologist that only Holocene-age younger alluvial deposits are impacted, the spot-checks should be reduced or suspended. If Pleistocene-age older alluvium or paleontological resources are observed during spot-checking, then full-time monitoring will be implemented in those areas and a Paleontological Resources Monitoring and Treatment Plan (PRMTP) will be prepared.

16. Prior to the start of construction, a paleontological resources Worker's Environmental Awareness Program (WEAP) should be presented to all earthmoving personnel to inform them of the possibility for buried paleontological resources and the procedures to follow in the event of fossil discoveries.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

a. The AVAQMD has established thresholds for GHG emissions which, if exceeded, would render a project as having a significant adverse impact (Table 10). The proposed project would generate GHGs during construction and operation but not in significant quantities. GHG emissions associated with the construction and operation of the proposed project were calculated using CalEEMod and are summarized in Table 10. Detailed CalEEMod input values and calculated GHG results are included as Appendix A. Operational emissions would be minimal and considered negligible.

Table 3 Project Construction and Operation Emissions of Greenhouse Gases

Project Phase	CO_2e Annual MT/Day (lbs)
Project Construction 2021	14/1,631
Project Construction 2022	174/4,976
Project Operation	0.61/113
Project Decommission 2047	66/4,910
Threshold of Significance	90,718/584,000
Significant?	NO

Notes: CO_2e carbon dioxide equivalent
lbs pounds
MT metric tons

Since GHG emissions associated with construction, operation, and decommissioning would be significantly lower than the established thresholds, the proposed project would have a less than significant impact. Additionally, the proposed project would displace GHG emissions that would otherwise be emitted in the process of generating electricity using traditional manufacturing measures that require burning of fossil fuels at the power plant level. This is a beneficial impact. Displaced emissions of GHGs by the proposed project were calculated based on projected annual power production and CalEEMod intensity factors for the production of electricity for Southern California Edison. Table 11 provides a summary of the calculated displaced GHG emissions. Detailed calculations are included in Appendix A.

Table 4 Displaced Greenhouse Gas Emissions

Operation Year	CO_2e (MT)
1	4,501
2	4,479
3	4,456
4	4,434
5	4,412
6	4,390
7	4,368
8	4,346
9	4,324
10	4,302
11	4,281
12	4,260
13	4,238
14	4,217
15	4,196
16	4,175
17	4,154
18	4,133
19	4,113
20	4,092
21	4,072
22	4,051
23	4,031
24	4,011
25	3,991

Notes: CO_2e carbon dioxide equivalent
lbs pounds
MT metric ton

b. The proposed project would not result in an increase of either population or emission sources beyond what has been planned for in the City of Lancaster's General Plan. The proposed project is also consistent with the City of Lancaster's Climate Action Plan, which promotes the establishment of large-scale solar facilities to supply regional energy needs. The Climate Action Plan is consistent with the pursuit of the State of California GHG reduction goals prescribed under Executive Order S-3-05 and Assembly Bill 32 (City of Lancaster 2017). The proposed project would be consistent with the City of Lancaster's Climate Action Plan, and State GHG reduction goals. Therefore, a less than significant impact would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?		X		
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which 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?			X	
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?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?			X	

a. During the biological reconnaissance survey of the site, two possible asbestos-cement (transite) irrigation pipes were observed at the site. Prior to construction, the pipes would require removal and appropriate disposal. Both pipes appeared to be intact. While undisturbed, transite pipes are not hazardous but can be a hazard for workers if it is crumbled, pulverized or reduced to powder. The following mitigation measure is required to ensure that impacts from possible asbestos containing materials are less than significant.

Mitigation Measure

17. Prior to ground disturbance, a qualified hazardous materials company that is certified to remove hazardous materials such as asbestos shall test both pipes for asbestos containing materials. If the pipes contain asbestos, they shall be removed by a certified company and disposed of as required by the State of California.

b. During construction, equipment would require small amounts of potentially hazardous materials such as fuels and lubricants. Some of these materials would be transported to the site by permitted vendors who would be required to obtain permits and are subject to inspection to ensure compliance with all relevant state and federal regulations governing the transportation of such materials. Standard BMPs for storage and minor spills or leaks would be used to ensure any accidental hazardous materials releases would be cleaned up and disposed of as appropriate. When not in use, equipment would be parked in identified parking areas to prevent accidental leaks from entering the site. Therefore, impacts would be less than significant.

During operation, minimal amounts of hazardous materials, such as lubricants, would be utilized for the occasional maintenance of the solar arrays and inverters. These materials would be utilized in accordance with all applicable rules and regulations. Therefore, impacts would be less than significant.

c. No schools are located within one quarter of a mile from the project site. The closest school to the project site is the iLEAD Lancaster Charter School at 254 E. Avenue K-4, which is 1.25 miles to the northeast of the site. Therefore, no impacts would occur.

d. A search of the Envirostor database maintained by the California Department of Toxic Substances Control and the Geotracker database maintained by the Regional Water Quality Control Board (RWQCB) for sites with hazardous waste investigations was completed. Within a one-half mile radius of the project site, a number of former Leaking Underground Storage Tanks (LUSTs) were identified in the Geotracker database (Table 12). These sites have been provided a regulatory status of closed by the RWQCB.

Table 5 Environmental Database Review Results

Site	Regulatory List	Distance/Gradient	Status
Fire Station 129, 421 Avenue M W	Geotracker-LUST	0.2 miles south	Closed
AV Ready Mix 42201 Division Street N	Geotracker-LUST	0.9 miles east	Closed
Arco #05579 41923 N Sierra Hwy	Geotracker-LUST	0.5 miles southeast	Closed
Unknown, 42142 Valley Line Road N	Geotracker-LUST	0.8 miles southeast	Closed
Antelope Valley Schools Transit 670 Avenue L8W	Geotracker-LUST	<0.1 miles west	Closed

None of the sites identified in the databases would affect the proposed project and neither database has records for the project site. Therefore, impacts would be less than significant.

e. The proposed project is located within two miles of a U.S. Air Force Plant 42. Specifically, Plant 42 is located approximately 1.5 southeast of the project site. However, the project is an unmanned solar facility and, therefore, no safety hazards to people from airports would occur. Therefore, no impacts would occur.

f. During construction, the proposed project would generate traffic associated with workers mobilizing daily to the project site. Additionally, equipment would be transported to the project site. Traffic generated during construction is not expected to block the roadways. Once constructed, with the exception of workers traveling to the project site to periodically conduct routine and/or emergency repairs, no traffic to the site would occur. The proposed project would be an unmanned solar facility and would not interfere with any adopted emergency response plan or emergency evacuation plan. Therefore, no impacts would occur.

g. The project area is not associated with a wildland area. Once constructed, the solar facility would be maintained weed free to reduce risks from a wildfire. However, areas around the project site are undeveloped and could be subject to a wildfire. In the event of a wildfire, there would be a low risk for injury, or death to workers because it would be an unmanned facility and the facility would be serviced by Los Angeles County Fire Station No. 129, located at 42110 6th Street West. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
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			X	
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site			X	
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			X	
iv) Impede or redirect flood flows				X
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?				X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				X

a. During construction, BMPs identified in a project specific SWPPP and by the City of Lancaster would be used to control any stormwater flow generated on site. After construction, the site would remain permeable to infiltration of rainwater. The constructed solar project would not degrade surface or groundwater quality No project features would be constructed in either

Amargosa Creek or the unnamed drainage located on the eastern side of the site (Figure 7). During construction and once operational, access to the site by emergency vehicles would be via 4th Street West and the two drainages would not be affected by the project. Therefore, a less than significant impact would occur.

b. Water would be used during site grubbing and grading for dust suppression. This use would be temporary and would not deplete groundwater supplies or interfere substantially with groundwater recharge that would cause a net deficit in aquifer volume or lowering of the local groundwater table. During site preparation, soil surfaces would be rolled to ensure a level surface for placement of solar arrays. This would allow soils at the project site to remain permeable to rain and allow rainwater to infiltrate into the local aquifers, and would reduce the amount of dust generated by construction thereby reducing the amount of water required for dust suppression. Internal access roads within the project would require a 90 percent compaction for access by emergency and routine maintenance vehicles. In addition, the project proponent would comply with City of Lancaster ordinances and regulations related to construction water use. Once the project is built, only a minimal amount of water may be used to clean the solar panels on a periodic basis. Therefore, a less than significant impact would occur.

c. Development of the proposed project would increase the amount of surface runoff as a result of impervious surfaces associated the solar facility. The impervious surfaces are specifically associated with the inverter and battery storage pads. The proposed project would be designed, on the basis of a hydrology study, to accept current flows entering the property and to handle the additional incremental runoff from the developed site. During operation of the project, only minimal amount of water would be used to clean the panels and would not be enough to create surface water runoff. Therefore, impacts from drainage and runoff would be less than significant.

d. The project site is not located within a coastal zone. Therefore, tsunamis are not a potential hazard. The project site is relatively flat and does not contain any enclosed water bodies and is not located in proximity to any large water bodies. As a result, the project site would not be subject to inundation by seiche or mudflows. Therefore, no impacts would occur.

Portions of the project site are designated as Flood Zone X and Flood Zone A per the Flood Insurance Rate Map (FIRM) (06037C0420F). Flood Zone X is located outside of both the 100-year flood zone and the 500-year flood zone. However, Flood Zone A is located within the 100-year flood zone. If portions of the solar facility occur on the portions of the property within the Flood Zone A, they would be elevated in accordance with FEMA regulations. However, the project has been sited to avoid Flood Zone A, as shown in Figure 8. Additionally, no occupied structures are proposed as part of the project. With compliance with existing regulations, impacts would be less than significant.

e. Water would be used as a dust suppressant during site grubbing and grading. This would be a temporary impact. Once the project is built, Once the project is built, water may be used to clean the solar panels on a periodic basis. The minor periodic use of water to clean the solar panels would not obstruct implementation of a water quality control plan or a sustainable groundwater management plan. Therefore, no impacts would occur.

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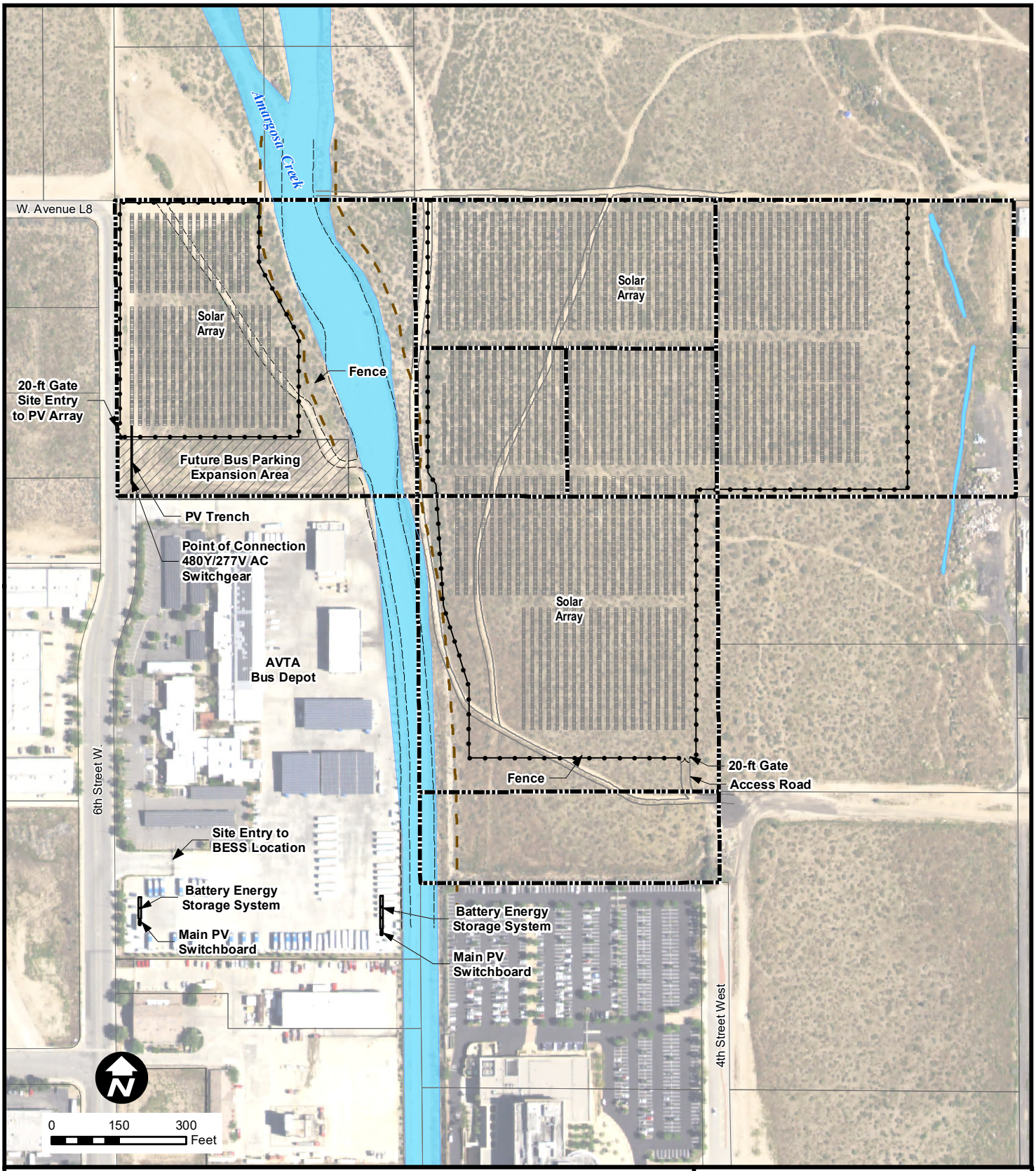

PV Trench

Project Setback

Riverine

Future Bus Parking

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 7

Regulated Waters

TETRA TECH

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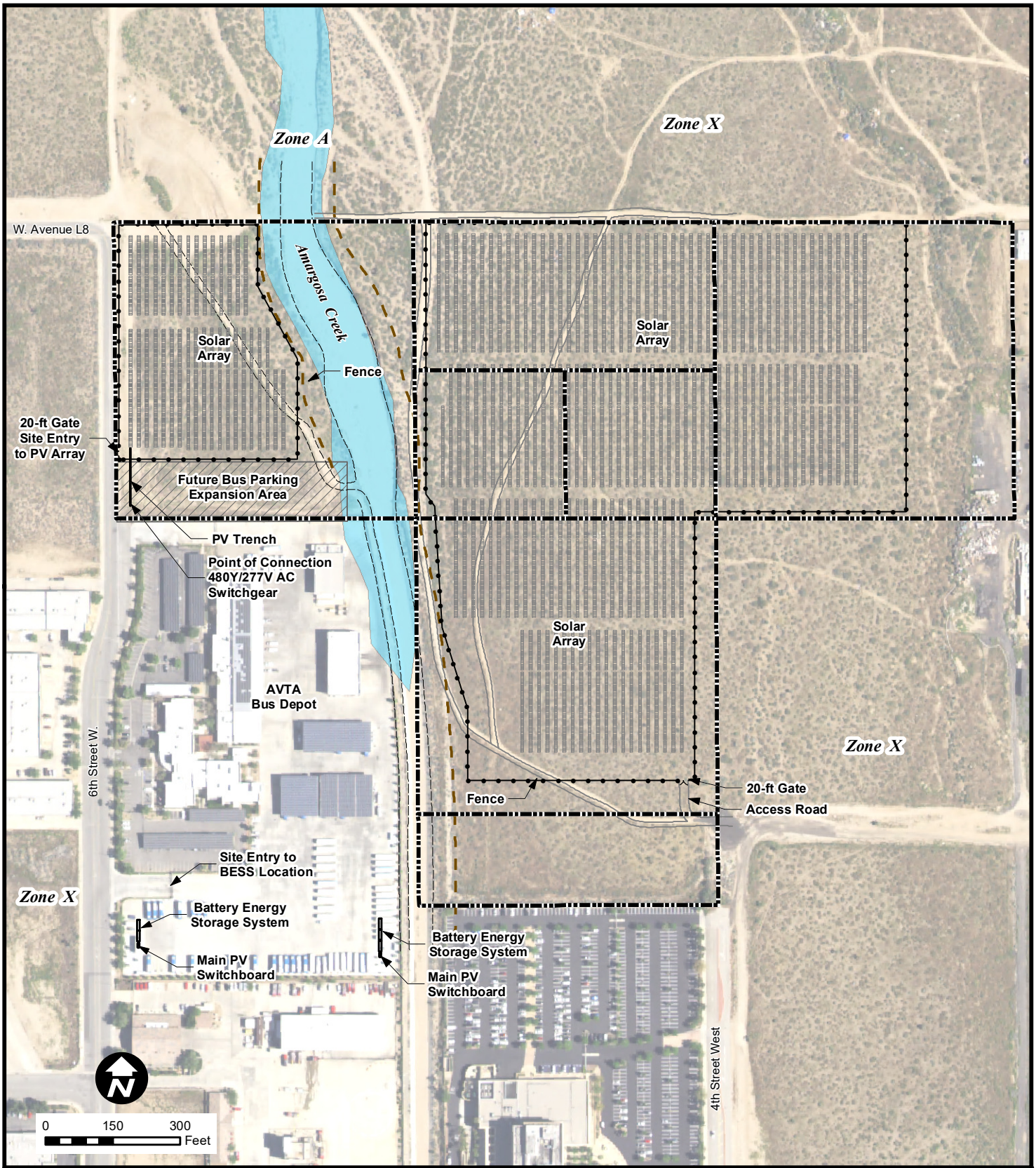

Fence
Project Setback
PV Trench
Future Bus Parking
Parcel Boundary

Zone A - Special Flood Hazard Area (without base flood elevations)
Zone X - Area of Minimal Flood Hazard

Adapted from:
REC Solar, December 14, 2021.

National Flood Insurance Rate Map (FIRMette)
Panel 06037C0420F effective 9/26/2008.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 8

National Flood Hazard FIRMette

TETRA TECH

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XI LAND USE AND PLANNING Would the project:				
a) Physically divide an established community?				X
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?				X

a. The proposed project consists of the construction and operation of a solar facility and associated infrastructure on parcels zoned light industrial. The project would not block public streets or access routes or result in physically dividing an established community. Therefore, no impacts would occur.

b. The proposed project is consistent with the City's General Plan and must be in conformance with the Lancaster Municipal Code. The proposed project would be in compliance with the City-adopted Uniform Building Code (UBC) and erosion control requirements (Section VII). Additionally, as noted Section IV, the project site is not subject to and would not conflict with a habitat conservation plan or natural community's conservation plan. Therefore, no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?				X
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?				X

a,b The project site is located outside any known mineral resources as mapped in the City of Lancaster LMEA (RBF Consultants 2009). The project site has not been identified as a Mineral Reserve 3 (contains potential but presently unproven resources) area (City of Lancaster 2009). As development of the project would not cause impacts to known mineral resources, no loss of availability of a locally important mineral would occur. Therefore, no impacts to mineral resources would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIII NOISE Would the project:				
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?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
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?				X

a,b. Noise would be generated during construction of the project, which may result in groundborne vibrations and groundborne noise being perceived by workers and residents in the area, although no large, deep excavations or drilling would be required. The project site is surrounded by industrial uses to the west and south with undeveloped lands to the north. Some legal non-conforming residences are located along Avenue L-8 and Avenue L-9. Construction activities would be scheduled between 7:00 a.m. and 5:00 p.m., Monday through Friday, for a period of approximately seven months. In addition, construction noise would be temporary. Once the project is operational, noise generated by the solar array equipment would be negligible. Due to the light industrial nature of the surrounding land uses and distance to existing residences, as well as the temporary nature of construction, noise impacts would be less than significant impact.

c. The closest airport is the U.S. Air Force Plant 42, located approximately 1.5 miles southeast of the project site. The proposed project is an unmanned solar project and, therefore, overflights or other noise from the regional airport would not result in any impacts to the project.

	Potentially Significant Impact	Less Than Significant With Mitigation	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)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a,b. The proposed project is an unmanned solar facility. There may be a temporary influx of workers during the construction of the project that would use hotels for temporary housing. However, it is much more likely that construction workers for the proposed project would come from the surrounding area. No new homes or businesses to support the proposed project would be required. The site is undeveloped and there are no people or housing would be displaced by the project. Therefore, no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
Police Protection?			X	
Schools?				X
Parks?				X
Other Public Facilities?				X

a. The City of Lancaster is supported by the Los Angeles County Fire Department for fire, rescue, and emergency medical (paramedic) services, as well as fire prevention function. Police service for the City of Lancaster is provided by the Los Angeles County Sheriff's Department. There may be a temporary, small increase in demand for fire and police service during construction. The closest fire station to the project site is Fire Station 129, located at 42116 6th Street West, approximately 0.1 miles southwest of the site. Operation of the proposed project is not likely to cause a fire and increase demand for fire or police services because the facility would be unmanned and has a very low potential for creating a fire risk. Therefore, a less than significant impact to fire and police services would occur. Because the project is an unmanned solar project, there would be no impacts to local schools, parks or other public facilities. Therefore, no impacts would occur to these services.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVI RECREATION Would the project:				
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?				X
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?				X

a,b. The proposed project is an unmanned solar facility in an industrial area that would not require an increase in the use or cause the deterioration of existing neighborhood or regional parks or other recreational facilities. Therefore, no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X

a. During construction of the project, there would be a temporary increase in traffic from workers traveling to the site plus equipment and materials being delivered to the site. This minor, temporary increase in traffic would not conflict with the City of Lancaster ordinances that address transportation with City limits. Therefore, impacts would be less than significant.

b. In July 2020, the City of Lancaster adopted standards and thresholds for analyzing projects with respect to vehicle miles traveled (VMT) in accordance with Senate Bill 743. A series of screening criteria were adopted and if a project meets one of these criteria, a VMT analysis is not required. These criteria are: 1) project size – generates fewer than 110 trips per day; 2) locally serving retail – commercial developments of 50,000 square feet or smaller; 3) project located in a low VMT area – 15% below baseline; 4) transit proximity; 5) affordable housing; and 6) transportation facilities. The proposed project meets Criteria 1. During construction of the proposed project, it is anticipated that less than 110 trips per day will be generated from workers traveling to and from the site plus delivery of equipment and materials. Once the alternative energy project is in operation, there would be monthly service visits to the project. The VMT threshold set by the City of Lancaster would not be exceeded by development of the proposed project. Therefore, impacts would be less than significant.

c. The proposed project is an unmanned solar project. Other than access roads for routine maintenance and emergency repairs, roads for the traveling public are not part of this project. Therefore, no impacts would occur.

d. Roads associated with access to the project site and internal road access have been designed to accommodate first responders and fire trucks. Internal access roads within the project would be

engineered to a 90 percent compaction for access by emergency and routine maintenance vehicles. Access to the project site would occur from 4th Street West, 6th Street West and Avenue L-8. As such, sufficient emergency access to the project site exists and no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XVIII TRIBAL CULTURAL RESOURCES Would the project:				
a) 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:				
i) 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				X
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set for in subdivision (c) of Public Resources 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.				X

a. No tribal cultural resources have been identified by any of the Native American Tribes with cultural affiliations to the area. However, two tribes requested mitigation measures be included to ensure proper procedures are followed in the event that previously unknown cultural resources are encountered on the project site and tribal monitoring during construction activities. These measures have been included in the cultural resources section. Therefore, no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
XIX UTILITIES AND SERVICE SYSTEMS Would the project:				
a) Require or result in the relocation or construction or 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?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				X
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?				X
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impact the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a,b The proposed project is an alternative energy project and would not require the relocation or expansion of utilities such as water, wastewater treatment, electrical or natural gas. Water would be used as dust suppression during construction of the project and in minor amounts during solar panel cleaning but expansion of water services to the project will not be required. Other than water used for dust suppression, the project would not require permanent water provisions. Therefore, impacts would be less than significant.

c. During construction and routine or emergency services at the project, portable toilets would be brought to the site for the workers and serviced by a portable toilet vendor. The project does not include a sanitary system so there would be no project-related impacts to the Lancaster Water Reclamation Plant. No impacts would occur.

d,e. During site grubbing and clearance, green waste would be generated and disposed of in the local Class III landfill. Trash and debris generated during construction of the project that would also be disposed of at a Class III landfill. Fees for disposing of green waste and non-hazardous waste would be paid by the project proponent. Once the project has been constructed, negligible amounts of trash may be generated when maintenance occurs. Any broken solar panels or those that need to be replaced would be either recycled or disposed of as manifested hazardous waste in a Class II or Class I landfill. This would be an infrequent occurrence. The proposed project would not generate waste that would exceed the capacity of the local trash conveyors or the local landfill. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation	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 impact an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildlife risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X
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?				X
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?				X

a. See Item IX.f.

b-d. The project site is not located in or near areas or lands classified as very high fire hazard severity zones. The project site is located within the service boundaries of an existing fire station (Fire Station 129) which can adequately serve the project site. Additionally, the proposed project would be constructed in accordance with all existing and applicable building and fire codes. Therefore, no impacts would occur.

	Potentially Significant Impact	Less Than Significant With Mitigation	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?		X		
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulative 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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

a-c. The proposed project consists of the construction and operation of a solar facility to support the operations of the Antelope Valley Transit Authority. Cumulative impacts are the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable projects.

The proposed project would not create any impacts with respect to: Agriculture and Forest Resources, Land Use/Planning, Mineral Resources, Population/Housing, Recreation, Utilities and Service Systems and Wildfire. The project would create impacts to other resource areas and mitigation measures have identified for Air Quality, Biological Resources, Cultural Resources, Geology/Paleontological Resources and Hazards/Hazardous Materials. Many of the impacts generated by projects are site specific and generally do not influence the impacts on another site. All projects undergo environmental review and have required mitigation measures to reduce impacts when warranted. These mitigation measures reduce environmental impacts to less than significant levels whenever possible. Therefore, a less than significant impact would occur.

2.0 ACRONYMS, REFERENCES AND AVAILABLE LOCATIONS

Acronyms

AC	Alternating Current
APE	Area of Potential Effect
APN	Assessor Parcel Number
AVAQMD	Antelope Valley Air Quality Management District
AVTA	Antelope Valley Transit Authority
BMPs	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_{2e}	Equivalent Mass of Carbon Dioxide
CRHR	California Register of Historic Resources
DC	Direct Current
DVD	Digital Video Disc
EIR	Environmental Impact Report
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTBMI	Fernandeno Tataviam Band of Mission Indians
GHG	Greenhouse Gas
H_2S	Hydrogen Sulfide
HEPA	High Efficiency Particulate Absorbent
ITP	Incidental Take Permit
kW	Kilowatt
kWh	Kilowatt hour
LACM	Los Angeles County Museum
lbs/day	Pounds per Day
LI	Light Industrial
LMEA	Lancaster Master Environmental Assessment
LUST	Leaking Underground Storage Tank
kW	Kilowatt
kWh	Kilowatt hour
MW	Megawatt
MWh	Megawatt hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NPDES	National Pollutant Discharge Elimination System
NIOSH	National Institute for Occupational Safety and Health

NRHP	National Register of Historic Places
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
O_3	Ozone
OHWM	Ordinary High Water Mark
OP	Office Professional
PFYC	Potential Fossil Yield Classification
Pb	Lead
$PM_{2.5}$	Particulate Matter, less than 2.5 microns in diameter
PM_{10}	Particulate Matter, less than 10 microns in diameter
PRMTP	Paleontological Resources Monitoring and Treatment Plan
PV	Photovoltaic
RWQCB	Regional Water Quality Control Board
SCE	Southern California Edison
SIP	State Implementation Plan
SMBMI	San Manuel Band of Mission Indians
SO_2	Sulfur Dioxide
SO_4	Sulfates
SOx	Oxides of Sulfur
SPR	Site Plan Review
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
UBC	Uniform Building Code
USEPA	U.S. Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WEAP	Worker Environmental Awareness Program

References

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Tetra Tech, Inc.
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2017 Approved Jurisdictional Determination, Lancaster West Solar Project, SPL02016-00689, June 13, 2017.

United States Department of Agriculture
2020 Soil Survey for Antelope Valley Area, California. Natural Resources Conservation Service. https://websoilsurvey.sc.egov.usda.gov/. Accessed December 8, 2020.

Document Availability Location

Development Services Department
Community Development Division
Lancaster City Hall
44933 Fern Avenue
Lancaster, California 93534

APPENDICES

Appendix A Air Quality/Greenhouse Gas Modeling and Calculations

Appendix B Updated Biological Reconnaissance Survey and Delineation of Regulated Wetlands/Waters

Appendix C Cultural Resources Inventory and Evaluation Report, Antelope Valley Transit Authority

Appendix D Paleontological Inventory Report, Antelope Valley Transit Authority

APPENDIX A AIR QUALITY/GREENHOUSE GAS MODELING AND CALCULATIONS

AVTA PV Project

Antelope Valley APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	27.00	Acre	27.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - No building construction

Construction Phase - Schedule as provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Trips and VMT - Equipment and operating hrs provided by Engineering

Operational Off-Road Equipment - Not calculated here

Stationary Sources - User Defined -

Construction Off-road Equipment Mitigation - Average Tier 4 Interim engines

Off-road Equipment - Estimated based on level of effort required for installation of fences and structures

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	440.00	65.00
tblConstructionPhase	NumDays	440.00	90.00
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tblLandUse	LandUseSquareFeet	1,176,120.00	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.34	0.34
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other General Industrial Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
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tblOffRoadEquipment	UsageHours	8.00	0.00
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tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
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tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
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tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
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tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
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tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	25.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	24.00
tblTripsAndVMT	WorkerTripNumber	0.00	50.00

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					
2021	0.8883	9.6988	5.4607	0.0167	0.1054	0.3260	0.4314	0.0281	0.3000	0.3281	0.0000	1,619.2367	1,619.2367	0.4840	0.0000	1,631.3372
2022	2.4640	21.8565	22.8154	0.0508	0.6350	1.1291	1.7641	0.1690	1.0388	1.2078	0.0000	4,941.9329	4,941.9329	1.3786	0.0000	4,976.3972

2047	1.5017	4.8263	17.9386	0.0481	0.3965	0.0917	0.4883	0.1069	0.0916	0.1985	0.0000	4,906.4950	4,906.4950	0.1472	0.0000	4,910.1761
Maximum	**2.4640**	**21.8565**	**22.8154**	**0.0508**	**0.6350**	**1.1291**	**1.7641**	**0.1690**	**1.0388**	**1.2078**	**0.0000**	**4,941.9329**	**4,941.9329**	**1.3786**	**0.0000**	**4,976.3972**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.3238	4.7833	9.0891	0.0167	0.1054	0.0701	0.1754	0.0281	0.0700	0.0981	0.0000	1,619.2367	1,619.2367	0.4840	0.0000	1,631.3372
2022	1.1502	15.3609	30.1882	0.0508	0.6350	0.0764	0.7114	0.1690	0.0760	0.2450	0.0000	4,941.9329	4,941.9329	1.3786	0.0000	4,976.3972
2047	0.5888	13.9335	22.9485	0.0481	0.3965	0.0575	0.4541	0.1069	0.0574	0.1643	0.0000	4,906.4950	4,906.4950	0.1472	0.0000	4,910.1761
Maximum	**1.1502**	**15.3609**	**30.1882**	**0.0508**	**0.6350**	**0.0764**	**0.7114**	**0.1690**	**0.0760**	**0.2450**	**0.0000**	**4,941.9329**	**4,941.9329**	**1.3786**	**0.0000**	**4,976.3972**

	ROG	NOx	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	**57.51**	**6.33**	**-34.65**	**0.00**	**0.00**	**86.81**	**50.04**	**0.00**	**85.78**	**70.75**	**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	12/1/2021	12/14/2021	5	10	
2	Site Fences	Building Construction	12/15/2021	1/11/2022	5	20	
3	Structures	Building Construction	1/12/2022	4/12/2022	5	65	
4	Electrical	Building Construction	2/13/2022	6/17/2022	5	90	
5	End of Life Decomission	Demolition	6/18/2047	7/29/2047	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Structures	Cranes	1	0.00	231	0.29
Electrical	Cranes	1	7.00	231	0.29
Structures	Forklifts	2	8.00	89	0.20
Site Preparation	Rubber Tired Dozers	3	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	0.00	97	0.37
Electrical	Forklifts	3	8.00	89	0.20
Structures	Generator Sets	1	0.00	84	0.74
Electrical	Generator Sets	1	0.00	84	0.74
Structures	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Electrical	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Site Fences	Cranes	1	0.00	231	0.29
Site Fences	Forklifts	1	8.00	89	0.20
Site Fences	Generator Sets	1	0.00	84	0.74
Site Fences	Tractors/Loaders/Backhoes	3	0.00	97	0.37
Site Fences	Welders	1	0.00	46	0.45
Structures	Welders	1	0.00	46	0.45
Electrical	Welders	1	0.00	46	0.45
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Off-Highway Trucks	1	4.00	402	0.38
Site Fences	Off-Highway Trucks	1	4.00	402	0.38
Site Fences	Other General Industrial Equipment	1	6.00	88	0.34
Structures	Bore/Drill Rigs	2	8.00	221	0.50
Electrical	Trenchers	1	8.00	78	0.50
End of Life Decomission	Concrete/Industrial Saws	1	0.00	81	0.73
End of Life Decomission	Excavators	3	8.00	158	0.38
End of Life Decomission	Rubber Tired Dozers	2	0.00	247	0.40
End of Life Decomission	Forklifts	3	8.00	89	0.20
End of Life Decomission	Off-Highway Trucks	1	8.00	402	0.38

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
Structures	8	24.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	12.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Electrical	9	50.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Fences	9	12.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
End of Life Decomission	10	25.00	0.00	328.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8314	9.5598	4.9593	0.0153		0.3251	0.3251		0.2991	0.2991		1,481.1440	1,481.1440	0.4790		1,493.1198
Total	**0.8314**	**9.5598**	**4.9593**	**0.0153**	**0.0000**	**0.3251**	**0.3251**	**0.0000**	**0.2991**	**0.2991**		**1,481.1440**	**1,481.1440**	**0.4790**		**1,493.1198**

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
Vendor	2.9300e-003	0.1056	0.0215	3.0000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		31.9238	31.9238	1.2800e-003		31.9558
Worker	0.0540	0.0333	0.4799	1.0700e-003	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		106.1690	106.1690	3.7100e-003		106.2617
Total	**0.0569**	**0.1390**	**0.5014**	**1.3700e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**138.0928**	**138.0928**	**4.9900e-003**		**138.2174**

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	0.2669	4.6444	8.5877	0.0153		0.0691	0.0691		0.0691	0.0691	0.0000	1,481.1440	1,481.1440	0.4790		1,493.1198
Total	**0.2669**	**4.6444**	**8.5877**	**0.0153**	**0.0000**	**0.0691**	**0.0691**	**0.0000**	**0.0691**	**0.0691**	**0.0000**	**1,481.1440**	**1,481.1440**	**0.4790**		**1,493.1198**

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
Vendor	2.9300e-003	0.1056	0.0215	3.0000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		31.9238	31.9238	1.2800e-003		31.9558
Worker	0.0540	0.0333	0.4799	1.0700e-003	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		106.1690	106.1690	3.7100e-003		106.2617

Total	**0.0569**	**0.1390**	**0.5014**	**1.3700e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**138.0928**	**138.0928**	**4.9900e-003**		**138.2174**

3.3 Site Fences - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5944	5.3027	4.4668	0.0101		0.2825	0.2825		0.2599	0.2599		977.4323	977.4323	0.3161		985.3354
Total	**0.5944**	**5.3027**	**4.4668**	**0.0101**		**0.2825**	**0.2825**		**0.2599**	**0.2599**		**977.4323**	**977.4323**	**0.3161**		**985.3354**

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
Vendor	2.9300e-003	0.1056	0.0215	3.0000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		31.9238	31.9238	1.2800e-003		31.9558
Worker	0.0540	0.0333	0.4799	1.0700e-003	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		106.1690	106.1690	3.7100e-003		106.2617
Total	**0.0569**	**0.1390**	**0.5014**	**1.3700e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**138.0928**	**138.0928**	**4.9900e-003**		**138.2174**

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	0.1866	3.2695	6.1533	0.0101		0.0165	0.0165		0.0165	0.0165	0.0000	977.4323	977.4323	0.3161		985.3354
Total	**0.1866**	**3.2695**	**6.1533**	**0.0101**		**0.0165**	**0.0165**		**0.0165**	**0.0165**	**0.0000**	**977.4323**	**977.4323**	**0.3161**		**985.3354**

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
Vendor	2.9300e-003	0.1056	0.0215	3.0000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		31.9238	31.9238	1.2800e-003		31.9558
Worker	0.0540	0.0333	0.4799	1.0700e-003	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		106.1690	106.1690	3.7100e-003		106.2617
Total	**0.0569**	**0.1390**	**0.5014**	**1.3700e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**138.0928**	**138.0928**	**4.9900e-003**		**138.2174**

3.3 Site Fences - 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	0.5139	4.3445	4.3006	0.0101		0.2224	0.2224		0.2046	0.2046		977.6646	977.6646	0.3162		985.5695
Total	**0.5139**	**4.3445**	**4.3006**	**0.0101**		**0.2224**	**0.2224**		**0.2046**	**0.2046**		**977.6646**	**977.6646**	**0.3162**		**985.5695**

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
Vendor	2.7500e-003	0.1002	0.0201	3.0000e-004	6.7700e-003	1.4000e-004	6.9100e-003	1.9500e-003	1.3000e-004	2.0800e-003		31.6976	31.6976	1.2300e-003		31.7283
Worker	0.0506	0.0302	0.4434	1.0300e-003	0.0986	7.9000e-004	0.0994	0.0262	7.3000e-004	0.0269		102.4951	102.4951	3.3700e-003		102.5792
Total	**0.0534**	**0.1304**	**0.4635**	**1.3300e-003**	**0.1054**	**9.3000e-004**	**0.1063**	**0.0281**	**8.6000e-004**	**0.0290**		**134.1926**	**134.1926**	**4.6000e-003**		**134.3075**

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	0.1866	3.2695	6.1533	0.0101		0.0165	0.0165		0.0165	0.0165	0.0000	977.6646	977.6646	0.3162		985.5695
Total	**0.1866**	**3.2695**	**6.1533**	**0.0101**		**0.0165**	**0.0165**		**0.0165**	**0.0165**	**0.0000**	**977.6646**	**977.6646**	**0.3162**		**985.5695**

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
Vendor	2.7500e-003	0.1002	0.0201	3.0000e-004	6.7700e-003	1.4000e-004	6.9100e-003	1.9500e-003	1.3000e-004	2.0800e-003		31.6976	31.6976	1.2300e-003		31.7283
Worker	0.0506	0.0302	0.4434	1.0300e-003	0.0986	7.9000e-004	0.0994	0.0262	7.3000e-004	0.0269		102.4951	102.4951	3.3700e-003		102.5792
Total	**0.0534**	**0.1304**	**0.4635**	**1.3300e-003**	**0.1054**	**9.3000e-004**	**0.1063**	**0.0281**	**8.6000e-004**	**0.0290**		**134.1926**	**134.1926**	**4.6000e-003**		**134.3075**

3.4 Structures - 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	0.8218	8.1315	8.3684	0.0248		0.3648	0.3648		0.3357	0.3357		2,395.9030	2,395.9030	0.7749		2,415.2751
Total	**0.8218**	**8.1315**	**8.3684**	**0.0248**		**0.3648**	**0.3648**		**0.3357**	**0.3357**		**2,395.9030**	**2,395.9030**	**0.7749**		**2,415.2751**

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
Vendor	5.4900e-003	0.2003	0.0402	6.1000e-004	0.0135	2.8000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		63.3951	63.3951	2.4600e-003		63.4566

Worker	0.1012	0.0605	0.8868	2.0600e-003	0.1972	1.5800e-003	0.1987	0.0523	1.4500e-003	0.0538		204.9902	204.9902	6.7300e-003		205.1585
Total	**0.1067**	**0.2608**	**0.9270**	**2.6700e-003**	**0.2107**	**1.8600e-003**	**0.2126**	**0.0562**	**1.7200e-003**	**0.0579**		**268.3853**	**268.3853**	**9.1900e-003**		**268.6151**

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	0.4434	7.5822	14.5573	0.0248		0.0408	0.0408		0.0408	0.0408	0.0000	2,395.9030	2,395.9030	0.7749		2,415.2751
Total	**0.4434**	**7.5822**	**14.5573**	**0.0248**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,395.9030**	**2,395.9030**	**0.7749**		**2,415.2751**

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
Vendor	5.4900e-003	0.2003	0.0402	6.1000e-004	0.0135	2.8000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		63.3951	63.3951	2.4600e-003		63.4566
Worker	0.1012	0.0605	0.8868	2.0600e-003	0.1972	1.5800e-003	0.1987	0.0523	1.4500e-003	0.0538		204.9902	204.9902	6.7300e-003		205.1585
Total	**0.1067**	**0.2608**	**0.9270**	**2.6700e-003**	**0.2107**	**1.8600e-003**	**0.2126**	**0.0562**	**1.7200e-003**	**0.0579**		**268.3853**	**268.3853**	**9.1900e-003**		**268.6151**

3.5 Electrical - 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	1.3193	13.1380	11.6324	0.0185		0.7588	0.7588		0.6981	0.6981		1,787.1866	1,787.1866	0.5780		1,801.6370
Total	**1.3193**	**13.1380**	**11.6324**	**0.0185**		**0.7588**	**0.7588**		**0.6981**	**0.6981**		**1,787.1866**	**1,787.1866**	**0.5780**		**1,801.6370**

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
Vendor	5.4900e-003	0.2003	0.0402	6.1000e-004	0.0135	2.8000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		63.3951	63.3951	2.4600e-003		63.4566
Worker	0.2108	0.1260	1.8475	4.2900e-003	0.4107	3.2900e-003	0.4140	0.1090	3.0300e-003	0.1120		427.0629	427.0629	0.0140		427.4135
Total	**0.2163**	**0.3263**	**1.8877**	**4.9000e-003**	**0.4243**	**3.5700e-003**	**0.4278**	**0.1129**	**3.3000e-003**	**0.1161**		**490.4580**	**490.4580**	**0.0165**		**490.8701**

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	0.3838	7.1916	12.8163	0.0185		0.0302	0.0302		0.0302	0.0302	0.0000	1,787.1866	1,787.1866	0.5780		1,801.6370

Total	**0.3838**	**7.1916**	**12.8163**	**0.0185**		**0.0302**	**0.0302**		**0.0302**	**0.0302**	**0.0000**	**1,787.1866**	**1,787.1866**	**0.5780**		**1,801.6370**

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
Vendor	5.4900e-003	0.2003	0.0402	6.1000e-004	0.0135	2.8000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		63.3951	63.3951	2.4600e-003		63.4566
Worker	0.2108	0.1260	1.8475	4.2900e-003	0.4107	3.2900e-003	0.4140	0.1090	3.0300e-003	0.1120		427.0629	427.0629	0.0140		427.4135
Total	**0.2163**	**0.3263**	**1.8877**	**4.9000e-003**	**0.4243**	**3.5700e-003**	**0.4278**	**0.1129**	**3.3000e-003**	**0.1161**		**490.4580**	**490.4580**	**0.0165**		**490.8701**

3.6 End of Life Decomission - 2047

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	1.4227	3.2140	17.2339	0.0382		0.0887	0.0887		0.0887	0.0887		3,871.7148	3,871.7148	0.1251		3,874.8424
Total	**1.4227**	**3.2140**	**17.2339**	**0.0382**	**0.0000**	**0.0887**	**0.0887**	**0.0000**	**0.0887**	**0.0887**		**3,871.7148**	**3,871.7148**	**0.1251**		**3,874.8424**

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	0.0540	1.5993	0.4373	8.5200e-003	0.1912	2.5100e-003	0.1937	0.0524	2.4000e-003	0.0548		895.7353	895.7353	0.0208		896.2561
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0250	0.0131	0.2675	1.3900e-003	0.2054	5.2000e-004	0.2059	0.0545	4.8000e-004	0.0550		139.0449	139.0449	1.3100e-003		139.0776
Total	**0.0790**	**1.6124**	**0.7047**	**9.9100e-003**	**0.3965**	**3.0300e-003**	**0.3996**	**0.1069**	**2.8800e-003**	**0.1098**		**1,034.7802**	**1,034.7802**	**0.0221**		**1,035.3337**

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	0.5097	12.3211	22.2438	0.0382		0.0545	0.0545		0.0545	0.0545	0.0000	3,871.7148	3,871.7148	0.1251		3,874.8424
Total	**0.5097**	**12.3211**	**22.2438**	**0.0382**	**0.0000**	**0.0545**	**0.0545**	**0.0000**	**0.0545**	**0.0545**	**0.0000**	**3,871.7148**	**3,871.7148**	**0.1251**		**3,874.8424**

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	0.0540	1.5993	0.4373	8.5200e-003	0.1912	2.5100e-003	0.1937	0.0524	2.4000e-003	0.0548		895.7353	895.7353	0.0208		896.2561

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0250	0.0131	0.2675	1.3900e-003	0.2054	5.2000e-004	0.2059	0.0545	4.8000e-004	0.0550		139.0449	139.0449	1.3100e-003		139.0776
Total	**0.0790**	**1.6124**	**0.7047**	**9.9100e-003**	**0.3965**	**3.0300e-003**	**0.3996**	**0.1069**	**2.8800e-003**	**0.1098**		**1,034.7802**	**1,034.7802**	**0.0221**		**1,035.3337**

AVTA PV Project

Antelope Valley APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	27.00	Acre	27.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - No building construction

Construction Phase - Schedule as provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Trips and VMT - Equipment and operating hrs provided by Engineering

Operational Off-Road Equipment - Not calculated here

Stationary Sources - User Defined -

Construction Off-road Equipment Mitigation - Average Tier 4 Interim engines

Off-road Equipment - Estimated based on level of effort required for installation of fences and structures

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstructionPhase	NumDays	440.00	20.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	440.00	65.00
tblConstructionPhase	NumDays	440.00	90.00
tblGrading	AcresOfGrading	5.00	0.00
tblLandUse	LandUseSquareFeet	1,176,120.00	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.34	0.34
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other General Industrial Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	328.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	25.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	24.00
tblTripsAndVMT	WorkerTripNumber	0.00	50.00

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					
2021	0.8847	9.6997	5.3697	0.0165	0.1054	0.3260	0.4314	0.0281	0.3000	0.3281	0.0000	1,605.4214	1,605.4214	0.4837	0.0000	1,617.5127
2022	2.4428	21.8629	22.2867	0.0500	0.6350	1.1291	1.7641	0.1690	1.0388	1.2078	0.0000	4,862.1916	4,862.1916	1.3763	0.0000	4,896.5990
2047	1.5035	4.8176	17.9178	0.0477	0.3965	0.0918	0.4883	0.1069	0.0916	0.1985	0.0000	4,863.7661	4,863.7661	0.1491	0.0000	4,867.4943

Maximum	**2.4428**	**21.8629**	**22.2867**	**0.0500**	**0.6350**	**1.1291**	**1.7641**	**0.1690**	**1.0388**	**1.2078**	**0.0000**	**4,863.7661**	**4,863.7661**	**1.3763**	**0.0000**	**4,896.5990**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	0.3201	4.7842	8.9981	0.0165	0.1054	0.0701	0.1754	0.0281	0.0700	0.0981	0.0000	1,605.4214	1,605.4214	0.4837	0.0000	1,617.5127
2022	1.1290	15.3672	29.6595	0.0500	0.6350	0.0764	0.7114	0.1690	0.0760	0.2450	0.0000	4,862.1916	4,862.1916	1.3763	0.0000	4,896.5990
2047	0.5906	13.9248	22.9277	0.0477	0.3965	0.0576	0.4541	0.1069	0.0574	0.1643	0.0000	4,863.7661	4,863.7661	0.1491	0.0000	4,867.4943
Maximum	**1.1290**	**15.3672**	**29.6595**	**0.0500**	**0.6350**	**0.0764**	**0.7114**	**0.1690**	**0.0760**	**0.2450**	**0.0000**	**4,863.7661**	**4,863.7661**	**1.3763**	**0.0000**	**4,896.5990**

	ROG	NOx	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	**57.78**	**6.33**	**-35.13**	**0.00**	**0.00**	**86.81**	**50.04**	**0.00**	**85.78**	**70.74**	**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	12/1/2021	12/14/2021	5	10	
2	Site Fences	Building Construction	12/15/2021	1/11/2022	5	20	
3	Structures	Building Construction	1/12/2022	4/12/2022	5	65	
4	Electrical	Building Construction	2/13/2022	6/17/2022	5	90	
5	End of Life Decomission	Demolition	6/18/2047	7/29/2047	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor

Structures	Cranes	1	0.00	231	0.29
Electrical	Cranes	1	7.00	231	0.29
Structures	Forklifts	2	8.00	89	0.20
Site Preparation	Rubber Tired Dozers	3	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	0.00	97	0.37
Electrical	Forklifts	3	8.00	89	0.20
Structures	Generator Sets	1	0.00	84	0.74
Electrical	Generator Sets	1	0.00	84	0.74
Structures	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Electrical	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Site Fences	Cranes	1	0.00	231	0.29
Site Fences	Forklifts	1	8.00	89	0.20
Site Fences	Generator Sets	1	0.00	84	0.74
Site Fences	Tractors/Loaders/Backhoes	3	0.00	97	0.37
Site Fences	Welders	1	0.00	46	0.45
Structures	Welders	1	0.00	46	0.45
Electrical	Welders	1	0.00	46	0.45
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Off-Highway Trucks	1	4.00	402	0.38
Site Fences	Off-Highway Trucks	1	4.00	402	0.38
Site Fences	Other General Industrial Equipment	1	6.00	88	0.34
Structures	Bore/Drill Rigs	2	8.00	221	0.50
Electrical	Trenchers	1	8.00	78	0.50
End of Life Decomission	Concrete/Industrial Saws	1	0.00	81	0.73
End of Life Decomission	Excavators	3	8.00	158	0.38
End of Life Decomission	Rubber Tired Dozers	2	0.00	247	0.40
End of Life Decomission	Forklifts	3	8.00	89	0.20
End of Life Decomission	Off-Highway Trucks	1	8.00	402	0.38

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
Structures	8	24.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	12.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Electrical	9	50.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Fences	9	12.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
End of Life Decomission	10	25.00	0.00	328.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8314	9.5598	4.9593	0.0153		0.3251	0.3251		0.2991	0.2991		1,481.1440	1,481.1440	0.4790		1,493.1198
Total	**0.8314**	**9.5598**	**4.9593**	**0.0153**	**0.0000**	**0.3251**	**0.3251**	**0.0000**	**0.2991**	**0.2991**		**1,481.1440**	**1,481.1440**	**0.4790**		**1,493.1198**

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
Vendor	3.1000e-003	0.1046	0.0248	2.9000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		30.6360	30.6360	1.4200e-003		30.6714
Worker	0.0501	0.0353	0.3855	9.4000e-004	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		93.6414	93.6414	3.2000e-003		93.7215
Total	**0.0532**	**0.1399**	**0.4104**	**1.2300e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**124.2774**	**124.2774**	**4.6200e-003**		**124.3929**

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	0.2669	4.6444	8.5877	0.0153		0.0691	0.0691		0.0691	0.0691	0.0000	1,481.1440	1,481.1440	0.4790		1,493.1198
Total	**0.2669**	**4.6444**	**8.5877**	**0.0153**	**0.0000**	**0.0691**	**0.0691**	**0.0000**	**0.0691**	**0.0691**	**0.0000**	**1,481.1440**	**1,481.1440**	**0.4790**		**1,493.1198**

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
Vendor	3.1000e-003	0.1046	0.0248	2.9000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		30.6360	30.6360	1.4200e-003		30.6714
Worker	0.0501	0.0353	0.3855	9.4000e-004	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		93.6414	93.6414	3.2000e-003		93.7215
Total	**0.0532**	**0.1399**	**0.4104**	**1.2300e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**124.2774**	**124.2774**	**4.6200e-003**		**124.3929**

3.3 Site Fences - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5944	5.3027	4.4668	0.0101		0.2825	0.2825		0.2599	0.2599		977.4323	977.4323	0.3161		985.3354
Total	**0.5944**	**5.3027**	**4.4668**	**0.0101**		**0.2825**	**0.2825**		**0.2599**	**0.2599**		**977.4323**	**977.4323**	**0.3161**		**985.3354**

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
Vendor	3.1000e-003	0.1046	0.0248	2.9000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		30.6360	30.6360	1.4200e-003		30.6714
Worker	0.0501	0.0353	0.3855	9.4000e-004	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		93.6414	93.6414	3.2000e-003		93.7215
Total	**0.0532**	**0.1399**	**0.4104**	**1.2300e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**124.2774**	**124.2774**	**4.6200e-003**		**124.3929**

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	0.1866	3.2695	6.1533	0.0101		0.0165	0.0165		0.0165	0.0165	0.0000	977.4323	977.4323	0.3161		985.3354
Total	**0.1866**	**3.2695**	**6.1533**	**0.0101**		**0.0165**	**0.0165**		**0.0165**	**0.0165**	**0.0000**	**977.4323**	**977.4323**	**0.3161**		**985.3354**

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
Vendor	3.1000e-003	0.1046	0.0248	2.9000e-004	6.7700e-003	1.7000e-004	6.9400e-003	1.9500e-003	1.6000e-004	2.1100e-003		30.6360	30.6360	1.4200e-003		30.6714
Worker	0.0501	0.0353	0.3855	9.4000e-004	0.0986	8.1000e-004	0.0994	0.0262	7.5000e-004	0.0269		93.6414	93.6414	3.2000e-003		93.7215
Total	**0.0532**	**0.1399**	**0.4104**	**1.2300e-003**	**0.1054**	**9.8000e-004**	**0.1063**	**0.0281**	**9.1000e-004**	**0.0290**		**124.2774**	**124.2774**	**4.6200e-003**		**124.3929**

3.3 Site Fences - 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	0.5139	4.3445	4.3006	0.0101		0.2224	0.2224		0.2046	0.2046		977.6646	977.6646	0.3162		985.5695
Total	**0.5139**	**4.3445**	**4.3006**	**0.0101**		**0.2224**	**0.2224**		**0.2046**	**0.2046**		**977.6646**	**977.6646**	**0.3162**		**985.5695**

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
Vendor	2.9100e-003	0.0991	0.0233	2.9000e-004	6.7700e-003	1.4000e-004	6.9100e-003	1.9500e-003	1.4000e-004	2.0900e-003		30.4031	30.4031	1.3600e-003		30.4372
Worker	0.0471	0.0320	0.3556	9.1000e-004	0.0986	7.9000e-004	0.0994	0.0262	7.3000e-004	0.0269		90.4037	90.4037	2.9100e-003		90.4765
Total	**0.0500**	**0.1310**	**0.3789**	**1.2000e-003**	**0.1054**	**9.3000e-004**	**0.1063**	**0.0281**	**8.7000e-004**	**0.0290**		**120.8068**	**120.8068**	**4.2700e-003**		**120.9137**

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	0.1866	3.2695	6.1533	0.0101		0.0165	0.0165		0.0165	0.0165	0.0000	977.6646	977.6646	0.3162		985.5695
Total	**0.1866**	**3.2695**	**6.1533**	**0.0101**		**0.0165**	**0.0165**		**0.0165**	**0.0165**	**0.0000**	**977.6646**	**977.6646**	**0.3162**		**985.5695**

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
Vendor	2.9100e-003	0.0991	0.0233	2.9000e-004	6.7700e-003	1.4000e-004	6.9100e-003	1.9500e-003	1.4000e-004	2.0900e-003		30.4031	30.4031	1.3600e-003		30.4372
Worker	0.0471	0.0320	0.3556	9.1000e-004	0.0986	7.9000e-004	0.0994	0.0262	7.3000e-004	0.0269		90.4037	90.4037	2.9100e-003		90.4765
Total	**0.0500**	**0.1310**	**0.3789**	**1.2000e-003**	**0.1054**	**9.3000e-004**	**0.1063**	**0.0281**	**8.7000e-004**	**0.0290**		**120.8068**	**120.8068**	**4.2700e-003**		**120.9137**

3.4 Structures - 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	0.8218	8.1315	8.3684	0.0248		0.3648	0.3648		0.3357	0.3357		2,395.9030	2,395.9030	0.7749		2,415.2751
Total	**0.8218**	**8.1315**	**8.3684**	**0.0248**		**0.3648**	**0.3648**		**0.3357**	**0.3357**		**2,395.9030**	**2,395.9030**	**0.7749**		**2,415.2751**

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
Vendor	5.8200e-003	0.1981	0.0466	5.8000e-004	0.0135	2.9000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		60.8061	60.8061	2.7300e-003		60.8743
Worker	0.0941	0.0639	0.7112	1.8200e-003	0.1972	1.5800e-003	0.1987	0.0523	1.4500e-003	0.0538		180.8075	180.8075	5.8200e-003		180.9530

Total	**0.0999**	**0.2621**	**0.7577**	**2.4000e-003**	**0.2107**	**1.8700e-003**	**0.2126**	**0.0562**	**1.7200e-003**	**0.0579**		**241.6136**	**241.6136**	**8.5500e-003**		**241.8273**

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	0.4434	7.5822	14.5573	0.0248		0.0408	0.0408		0.0408	0.0408	0.0000	2,395.9030	2,395.9030	0.7749		2,415.2751
Total	**0.4434**	**7.5822**	**14.5573**	**0.0248**		**0.0408**	**0.0408**		**0.0408**	**0.0408**	**0.0000**	**2,395.9030**	**2,395.9030**	**0.7749**		**2,415.2751**

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
Vendor	5.8200e-003	0.1981	0.0466	5.8000e-004	0.0135	2.9000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		60.8061	60.8061	2.7300e-003		60.8743
Worker	0.0941	0.0639	0.7112	1.8200e-003	0.1972	1.5800e-003	0.1987	0.0523	1.4500e-003	0.0538		180.8075	180.8075	5.8200e-003		180.9530
Total	**0.0999**	**0.2621**	**0.7577**	**2.4000e-003**	**0.2107**	**1.8700e-003**	**0.2126**	**0.0562**	**1.7200e-003**	**0.0579**		**241.6136**	**241.6136**	**8.5500e-003**		**241.8273**

3.5 Electrical - 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	1.3193	13.1380	11.6324	0.0185		0.7588	0.7588		0.6981	0.6981		1,787.1866	1,787.1866	0.5780		1,801.6370
Total	**1.3193**	**13.1380**	**11.6324**	**0.0185**		**0.7588**	**0.7588**		**0.6981**	**0.6981**		**1,787.1866**	**1,787.1866**	**0.5780**		**1,801.6370**

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
Vendor	5.8200e-003	0.1981	0.0466	5.8000e-004	0.0135	2.9000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		60.8061	60.8061	2.7300e-003		60.8743
Worker	0.1960	0.1332	1.4816	3.7800e-003	0.4107	3.2900e-003	0.4140	0.1090	3.0300e-003	0.1120		376.6823	376.6823	0.0121		376.9854
Total	**0.2019**	**0.3313**	**1.5282**	**4.3600e-003**	**0.4243**	**3.5800e-003**	**0.4279**	**0.1129**	**3.3000e-003**	**0.1161**		**437.4884**	**437.4884**	**0.0149**		**437.8597**

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	0.3838	7.1916	12.8163	0.0185		0.0302	0.0302		0.0302	0.0302	0.0000	1,787.1866	1,787.1866	0.5780		1,801.6370
Total	**0.3838**	**7.1916**	**12.8163**	**0.0185**		**0.0302**	**0.0302**		**0.0302**	**0.0302**	**0.0000**	**1,787.1866**	**1,787.1866**	**0.5780**		**1,801.6370**

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
Vendor	5.8200e-003	0.1981	0.0466	5.8000e-004	0.0135	2.9000e-004	0.0138	3.9000e-003	2.7000e-004	4.1700e-003		60.8061	60.8061	2.7300e-003		60.8743
Worker	0.1960	0.1332	1.4816	3.7800e-003	0.4107	3.2900e-003	0.4140	0.1090	3.0300e-003	0.1120		376.6823	376.6823	0.0121		376.9854
Total	**0.2019**	**0.3313**	**1.5282**	**4.3600e-003**	**0.4243**	**3.5800e-003**	**0.4279**	**0.1129**	**3.3000e-003**	**0.1161**		**437.4884**	**437.4884**	**0.0149**		**437.8597**

3.6 End of Life Decomission - 2047

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	1.4227	3.2140	17.2339	0.0382		0.0887	0.0887		0.0887	0.0887		3,871.7148	3,871.7148	0.1251		3,874.8424
Total	**1.4227**	**3.2140**	**17.2339**	**0.0382**	**0.0000**	**0.0887**	**0.0887**	**0.0000**	**0.0887**	**0.0887**		**3,871.7148**	**3,871.7148**	**0.1251**		**3,874.8424**

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	0.0563	1.5900	0.4781	8.2700e-003	0.1912	2.5300e-003	0.1937	0.0524	2.4200e-003	0.0548		869.5945	869.5945	0.0229		870.1676
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0245	0.0136	0.2058	1.2300e-003	0.2054	5.2000e-004	0.2059	0.0545	4.8000e-004	0.0550		122.4567	122.4567	1.1000e-003		122.4843
Total	**0.0808**	**1.6037**	**0.6839**	**9.5000e-003**	**0.3965**	**3.0500e-003**	**0.3996**	**0.1069**	**2.9000e-003**	**0.1098**		**992.0513**	**992.0513**	**0.0240**		**992.6519**

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	0.5097	12.3211	22.2438	0.0382		0.0545	0.0545		0.0545	0.0545	0.0000	3,871.7148	3,871.7148	0.1251		3,874.8424
Total	**0.5097**	**12.3211**	**22.2438**	**0.0382**	**0.0000**	**0.0545**	**0.0545**	**0.0000**	**0.0545**	**0.0545**	**0.0000**	**3,871.7148**	**3,871.7148**	**0.1251**		**3,874.8424**

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	0.0563	1.5900	0.4781	8.2700e-003	0.1912	2.5300e-003	0.1937	0.0524	2.4200e-003	0.0548		869.5945	869.5945	0.0229		870.1676
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Worker	0.0245	0.0136	0.2058	1.2300e-003	0.2054	5.2000e-004	0.2059	0.0545	4.8000e-004	0.0550		122.4567	122.4567	1.1000e-003		122.4843
Total	**0.0808**	**1.6037**	**0.6839**	**9.5000e-003**	**0.3965**	**3.0500e-003**	**0.3996**	**0.1069**	**2.9000e-003**	**0.1098**		**992.0513**	**992.0513**	**0.0240**		**992.6519**

AVTA PV Project
Antelope Valley APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	27.00	Acre	27.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - No building construction

Construction Phase - Schedule as provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Off-road Equipment - Equipment and operating hrs provided by Engineering

Trips and VMT - Equipment and operating hrs provided by Engineering

Operational Off-Road Equipment - Not calculated here

Stationary Sources - User Defined -

Construction Off-road Equipment Mitigation - Average Tier 4 Interim engines

Off-road Equipment - Estimated based on level of effort required for installation of fences and structures

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstructionPhase	NumDays	440.00	20.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	440.00	65.00
tblConstructionPhase	NumDays	440.00	90.00
tblGrading	AcresOfGrading	5.00	0.00
tblLandUse	LandUseSquareFeet	1,176,120.00	0.00
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.34	0.34
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other General Industrial Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	0.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblTripsAndVMT	HaulingTripNumber	0.00	328.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	25.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	12.00
tblTripsAndVMT	WorkerTripNumber	0.00	24.00
tblTripsAndVMT	WorkerTripNumber	0.00	50.00

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					
2021	8.5800e-003	0.0839	0.0588	1.6000e-004	1.1900e-003	3.4700e-003	4.6600e-003	3.2000e-004	3.1900e-003	3.5100e-003	0.0000	13.8164	13.8164	4.0900e-003	0.0000	13.9186
2022	0.0993	0.8954	0.9112	1.9600e-003	0.0258	0.0470	0.0728	6.8800e-003	0.0433	0.0501	0.0000	172.8246	172.8246	0.0483	0.0000	174.0329
2047	0.0225	0.0728	0.2687	7.2000e-004	5.8400e-003	1.3800e-003	7.2100e-003	1.5800e-003	1.3700e-003	2.9500e-003	0.0000	66.4433	66.4433	2.0100e-003	0.0000	66.4937

Maximum	**0.0993**	**0.8954**	**0.9112**	**1.9600e-003**	**0.0258**	**0.0470**	**0.0728**	**6.8800e-003**	**0.0433**	**0.0501**	**0.0000**	**172.8246**	**172.8246**	**0.0483**	**0.0000**	**174.0329**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	3.1100e-003	0.0461	0.0879	1.6000e-004	1.1900e-003	4.6000e-004	1.6500e-003	3.2000e-004	4.6000e-004	7.8000e-004	0.0000	13.8164	13.8164	4.0900e-003	0.0000	13.9186
2022	0.0438	0.6062	1.1721	1.9600e-003	0.0258	2.9700e-003	0.0288	6.8800e-003	2.9500e-003	9.8300e-003	0.0000	172.8245	172.8245	0.0483	0.0000	174.0328
2047	8.8000e-003	0.2094	0.3438	7.2000e-004	5.8400e-003	8.6000e-004	6.7000e-003	1.5800e-003	8.6000e-004	2.4400e-003	0.0000	66.4432	66.4432	2.0100e-003	0.0000	66.4936
Maximum	**0.0438**	**0.6062**	**1.1721**	**1.9600e-003**	**0.0258**	**2.9700e-003**	**0.0288**	**6.8800e-003**	**2.9500e-003**	**9.8300e-003**	**0.0000**	**172.8245**	**172.8245**	**0.0483**	**0.0000**	**174.0328**

	ROG	NOx	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	**57.29**	**18.10**	**-29.48**	**0.00**	**0.00**	**91.73**	**56.17**	**0.00**	**91.07**	**76.94**	**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)
3	**11-13-2021**	**2-12-2022**	0.2162	0.1578
4	**2-13-2022**	**5-12-2022**	0.6729	0.4346
5	**5-13-2022**	**8-12-2022**	0.1929	0.1044
105	**5-13-2047**	**8-12-2047**	0.0949	0.2178
		Highest	0.6729	0.4346

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	12/1/2021	12/14/2021	5	10	

2	Site Fences	Building Construction	12/15/2021	1/11/2022	5	20	
3	Structures	Building Construction	1/12/2022	4/12/2022	5	65	
4	Electrical	Building Construction	2/13/2022	6/17/2022	5	90	
5	End of Life Decomission	Demolition	6/18/2047	7/29/2047	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Structures	Cranes	1	0.00	231	0.29
Electrical	Cranes	1	7.00	231	0.29
Structures	Forklifts	2	8.00	89	0.20
Site Preparation	Rubber Tired Dozers	3	0.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	0.00	97	0.37
Electrical	Forklifts	3	8.00	89	0.20
Structures	Generator Sets	1	0.00	84	0.74
Electrical	Generator Sets	1	0.00	84	0.74
Structures	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Electrical	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Site Fences	Cranes	1	0.00	231	0.29
Site Fences	Forklifts	1	8.00	89	0.20
Site Fences	Generator Sets	1	0.00	84	0.74
Site Fences	Tractors/Loaders/Backhoes	3	0.00	97	0.37
Site Fences	Welders	1	0.00	46	0.45
Structures	Welders	1	0.00	46	0.45
Electrical	Welders	1	0.00	46	0.45
Site Preparation	Skid Steer Loaders	1	8.00	65	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Off-Highway Trucks	1	4.00	402	0.38
Site Fences	Off-Highway Trucks	1	4.00	402	0.38
Site Fences	Other General Industrial Equipment	1	6.00	88	0.34
Structures	Bore/Drill Rigs	2	8.00	221	0.50
Electrical	Trenchers	1	8.00	78	0.50

End of Life Decomission	Concrete/Industrial Saws	1	0.00	81	0.73
End of Life Decomission	Excavators	3	8.00	158	0.38
End of Life Decomission	Rubber Tired Dozers	2	0.00	247	0.40
End of Life Decomission	Forklifts	3	8.00	89	0.20
End of Life Decomission	Off-Highway Trucks	1	8.00	402	0.38

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
Structures	8	24.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	10	12.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Electrical	9	50.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Fences	9	12.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
End of Life Decomission	10	25.00	0.00	328.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1600e-003	0.0478	0.0248	8.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	6.7184	6.7184	2.1700e-003	0.0000	6.7727
Total	**4.1600e-003**	**0.0478**	**0.0248**	**8.0000e-005**	**0.0000**	**1.6300e-003**	**1.6300e-003**	**0.0000**	**1.5000e-003**	**1.5000e-003**	**0.0000**	**6.7184**	**6.7184**	**2.1700e-003**	**0.0000**	**6.7727**

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	2.0000e-005	5.3000e-004	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1424	0.1424	1.0000e-005	0.0000	0.1425
Worker	2.3000e-004	1.9000e-004	2.0600e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4378	0.4378	2.0000e-005	0.0000	0.4382
Total	**2.5000e-004**	**7.2000e-004**	**2.1800e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.5802**	**0.5802**	**3.0000e-005**	**0.0000**	**0.5807**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	0.0232	0.0429	8.0000e-005		3.5000e-004	3.5000e-004		3.5000e-004	3.5000e-004	0.0000	6.7184	6.7184	2.1700e-003	0.0000	6.7727
Total	**1.3300e-003**	**0.0232**	**0.0429**	**8.0000e-005**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**3.5000e-004**	**3.5000e-004**	**0.0000**	**6.7184**	**6.7184**	**2.1700e-003**	**0.0000**	**6.7727**

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	2.0000e-005	5.3000e-004	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1424	0.1424	1.0000e-005	0.0000	0.1425
Worker	2.3000e-004	1.9000e-004	2.0600e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4378	0.4378	2.0000e-005	0.0000	0.4382
Total	**2.5000e-004**	**7.2000e-004**	**2.1800e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.5802**	**0.5802**	**3.0000e-005**	**0.0000**	**0.5807**

3.3 Site Fences - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8600e-003	0.0345	0.0290	7.0000e-005		1.8400e-003	1.8400e-003		1.6900e-003	1.6900e-003	0.0000	5.7636	5.7636	1.8600e-003	0.0000	5.8102
Total	**3.8600e-003**	**0.0345**	**0.0290**	**7.0000e-005**		**1.8400e-003**	**1.8400e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**5.7636**	**5.7636**	**1.8600e-003**	**0.0000**	**5.8102**

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	2.0000e-005	6.9000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1851	0.1851	1.0000e-005	0.0000	0.1853
Worker	3.0000e-004	2.4000e-004	2.6800e-003	1.0000e-005	6.3000e-004	1.0000e-005	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5692	0.5692	2.0000e-005	0.0000	0.5697

Total	**3.2000e-004**	**9.3000e-004**	**2.8300e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.7543**	**0.7543**	**3.0000e-005**	**0.0000**	**0.7549**

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	1.2100e-003	0.0213	0.0400	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7636	5.7636	1.8600e-003	0.0000	5.8102
Total	**1.2100e-003**	**0.0213**	**0.0400**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**5.7636**	**5.7636**	**1.8600e-003**	**0.0000**	**5.8102**

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	2.0000e-005	6.9000e-004	1.5000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1851	0.1851	1.0000e-005	0.0000	0.1853
Worker	3.0000e-004	2.4000e-004	2.6800e-003	1.0000e-005	6.3000e-004	1.0000e-005	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5692	0.5692	2.0000e-005	0.0000	0.5697
Total	**3.2000e-004**	**9.3000e-004**	**2.8300e-003**	**1.0000e-005**	**6.7000e-004**	**1.0000e-005**	**6.7000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**0.7543**	**0.7543**	**3.0000e-005**	**0.0000**	**0.7549**

3.3 Site Fences - 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	1.8000e-003	0.0152	0.0151	4.0000e-005		7.8000e-004	7.8000e-004		7.2000e-004	7.2000e-004	0.0000	3.1042	3.1042	1.0000e-003	0.0000	3.1293
Total	**1.8000e-003**	**0.0152**	**0.0151**	**4.0000e-005**		**7.8000e-004**	**7.8000e-004**		**7.2000e-004**	**7.2000e-004**	**0.0000**	**3.1042**	**3.1042**	**1.0000e-003**	**0.0000**	**3.1293**

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	3.5000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0989	0.0989	0.0000	0.0000	0.0990
Worker	1.5000e-004	1.2000e-004	1.3300e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2959	0.2959	1.0000e-005	0.0000	0.2961
Total	**1.6000e-004**	**4.7000e-004**	**1.4100e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3948**	**0.3948**	**1.0000e-005**	**0.0000**	**0.3952**

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	6.5000e-004	0.0114	0.0215	4.0000e-005		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	3.1042	3.1042	1.0000e-003	0.0000	3.1293
Total	**6.5000e-004**	**0.0114**	**0.0215**	**4.0000e-005**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**3.1042**	**3.1042**	**1.0000e-003**	**0.0000**	**3.1293**

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	3.5000e-004	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0989	0.0989	0.0000	0.0000	0.0990
Worker	1.5000e-004	1.2000e-004	1.3300e-003	0.0000	3.4000e-004	0.0000	3.4000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2959	0.2959	1.0000e-005	0.0000	0.2961
Total	**1.6000e-004**	**4.7000e-004**	**1.4100e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3948**	**0.3948**	**1.0000e-005**	**0.0000**	**0.3952**

3.4 Structures - 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	0.0267	0.2643	0.2720	8.0000e-004		0.0119	0.0119		0.0109	0.0109	0.0000	70.6396	70.6396	0.0229	0.0000	71.2108
Total	**0.0267**	**0.2643**	**0.2720**	**8.0000e-004**		**0.0119**	**0.0119**		**0.0109**	**0.0109**	**0.0000**	**70.6396**	**70.6396**	**0.0229**	**0.0000**	**71.2108**

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	6.5600e-003	1.4200e-003	2.0000e-005	4.3000e-004	1.0000e-005	4.4000e-004	1.2000e-004	1.0000e-005	1.3000e-004	0.0000	1.8371	1.8371	8.0000e-005	0.0000	1.8390
Worker	2.8000e-003	2.2000e-003	0.0247	6.0000e-005	6.2800e-003	5.0000e-005	6.3300e-003	1.6700e-003	5.0000e-005	1.7200e-003	0.0000	5.4951	5.4951	1.8000e-004	0.0000	5.4996
Total	**2.9800e-003**	**8.7600e-003**	**0.0261**	**8.0000e-005**	**6.7100e-003**	**6.0000e-005**	**6.7700e-003**	**1.7900e-003**	**6.0000e-005**	**1.8500e-003**	**0.0000**	**7.3322**	**7.3322**	**2.6000e-004**	**0.0000**	**7.3385**

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	0.0144	0.2464	0.4731	8.0000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	70.6395	70.6395	0.0229	0.0000	71.2107
Total	**0.0144**	**0.2464**	**0.4731**	**8.0000e-004**		**1.3300e-003**	**1.3300e-003**		**1.3300e-003**	**1.3300e-003**	**0.0000**	**70.6395**	**70.6395**	**0.0229**	**0.0000**	**71.2107**

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	6.5600e-003	1.4200e-003	2.0000e-005	4.3000e-004	1.0000e-005	4.4000e-004	1.2000e-004	1.0000e-005	1.3000e-004	0.0000	1.8371	1.8371	8.0000e-005	0.0000	1.8390

Worker	2.8000e-003	2.2000e-003	0.0247	6.0000e-005	6.2800e-003	5.0000e-005	6.3300e-003	1.6700e-003	5.0000e-005	1.7200e-003	0.0000	5.4951	5.4951	1.8000e-004	0.0000	5.4996
Total	**2.9800e-003**	**8.7600e-003**	**0.0261**	**8.0000e-005**	**6.7100e-003**	**6.0000e-005**	**6.7700e-003**	**1.7900e-003**	**6.0000e-005**	**1.8500e-003**	**0.0000**	**7.3322**	**7.3322**	**2.6000e-004**	**0.0000**	**7.3385**

3.5 Electrical - 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	0.0594	0.5912	0.5235	8.3000e-004		0.0342	0.0342		0.0314	0.0314	0.0000	72.9589	72.9589	0.0236	0.0000	73.5488
Total	**0.0594**	**0.5912**	**0.5235**	**8.3000e-004**		**0.0342**	**0.0342**		**0.0314**	**0.0314**	**0.0000**	**72.9589**	**72.9589**	**0.0236**	**0.0000**	**73.5488**

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	2.5000e-004	9.0900e-003	1.9600e-003	3.0000e-005	6.0000e-004	1.0000e-005	6.1000e-004	1.7000e-004	1.0000e-005	1.9000e-004	0.0000	2.5436	2.5436	1.1000e-004	0.0000	2.5462
Worker	8.0700e-003	6.3500e-003	0.0712	1.8000e-004	0.0181	1.5000e-004	0.0183	4.8100e-003	1.4000e-004	4.9500e-003	0.0000	15.8513	15.8513	5.1000e-004	0.0000	15.8641
Total	**8.3200e-003**	**0.0154**	**0.0732**	**2.1000e-004**	**0.0187**	**1.6000e-004**	**0.0189**	**4.9800e-003**	**1.5000e-004**	**5.1400e-003**	**0.0000**	**18.3949**	**18.3949**	**6.2000e-004**	**0.0000**	**18.4104**

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	0.0173	0.3236	0.5767	8.3000e-004		1.3600e-003	1.3600e-003		1.3600e-003	1.3600e-003	0.0000	72.9588	72.9588	0.0236	0.0000	73.5487
Total	**0.0173**	**0.3236**	**0.5767**	**8.3000e-004**		**1.3600e-003**	**1.3600e-003**		**1.3600e-003**	**1.3600e-003**	**0.0000**	**72.9588**	**72.9588**	**0.0236**	**0.0000**	**73.5487**

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	2.5000e-004	9.0900e-003	1.9600e-003	3.0000e-005	6.0000e-004	1.0000e-005	6.1000e-004	1.7000e-004	1.0000e-005	1.9000e-004	0.0000	2.5436	2.5436	1.1000e-004	0.0000	2.5462
Worker	8.0700e-003	6.3500e-003	0.0712	1.8000e-004	0.0181	1.5000e-004	0.0183	4.8100e-003	1.4000e-004	4.9500e-003	0.0000	15.8513	15.8513	5.1000e-004	0.0000	15.8641
Total	**8.3200e-003**	**0.0154**	**0.0732**	**2.1000e-004**	**0.0187**	**1.6000e-004**	**0.0189**	**4.9800e-003**	**1.5000e-004**	**5.1400e-003**	**0.0000**	**18.3949**	**18.3949**	**6.2000e-004**	**0.0000**	**18.4104**

3.6 End of Life Decomission - 2047

Unmitigated Construction On-Site

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

Off-Road	0.0213	0.0482	0.2585	5.7000e-004		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	52.6854	52.6854	1.7000e-003	0.0000	52.7280
Total	**0.0213**	**0.0482**	**0.2585**	**5.7000e-004**	**0.0000**	**1.3300e-003**	**1.3300e-003**	**0.0000**	**1.3300e-003**	**1.3300e-003**	**0.0000**	**52.6854**	**52.6854**	**1.7000e-003**	**0.0000**	**52.7280**

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	8.2000e-004	0.0243	6.8300e-003	1.3000e-004	2.8200e-003	4.0000e-005	2.8600e-003	7.7000e-004	4.0000e-005	8.1000e-004	0.0000	12.0396	12.0396	3.0000e-004	0.0000	12.0470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.2000e-004	3.3200e-003	2.0000e-005	3.0200e-003	1.0000e-005	3.0300e-003	8.0000e-004	1.0000e-005	8.1000e-004	0.0000	1.7183	1.7183	2.0000e-005	0.0000	1.7187
Total	**1.1500e-003**	**0.0245**	**0.0102**	**1.5000e-004**	**5.8400e-003**	**5.0000e-005**	**5.8900e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**13.7579**	**13.7579**	**3.2000e-004**	**0.0000**	**13.7657**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6500e-003	0.1848	0.3337	5.7000e-004		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	52.6854	52.6854	1.7000e-003	0.0000	52.7279
Total	**7.6500e-003**	**0.1848**	**0.3337**	**5.7000e-004**	**0.0000**	**8.2000e-004**	**8.2000e-004**	**0.0000**	**8.2000e-004**	**8.2000e-004**	**0.0000**	**52.6854**	**52.6854**	**1.7000e-003**	**0.0000**	**52.7279**

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	8.2000e-004	0.0243	6.8300e-003	1.3000e-004	2.8200e-003	4.0000e-005	2.8600e-003	7.7000e-004	4.0000e-005	8.1000e-004	0.0000	12.0396	12.0396	3.0000e-004	0.0000	12.0470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.2000e-004	3.3200e-003	2.0000e-005	3.0200e-003	1.0000e-005	3.0300e-003	8.0000e-004	1.0000e-005	8.1000e-004	0.0000	1.7183	1.7183	2.0000e-005	0.0000	1.7187
Total	**1.1500e-003**	**0.0245**	**0.0102**	**1.5000e-004**	**5.8400e-003**	**5.0000e-005**	**5.8900e-003**	**1.5700e-003**	**5.0000e-005**	**1.6200e-003**	**0.0000**	**13.7579**	**13.7579**	**3.2000e-004**	**0.0000**	**13.7657**

AVTA PV Project - Operation

Antelope Valley APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	27.00	Acre	27.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Off-road Equipment - Project operation

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	1.00
tblLandUse	LandUseSquareFeet	1,176,120.00	0.00
tblOffRoadEquipment	OffRoadEquipmentType		Pressure Washers

tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	23.00	4.00

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	0.1030	0.6140	0.6319	1.4400e-003	0.0329	0.0268	0.0597	8.7200e-003	0.0268	0.0355	0.0000	112.3450	112.3450	8.8200e-003	0.0000	112.5657
Maximum	**0.1030**	**0.6140**	**0.6319**	**1.4400e-003**	**0.0329**	**0.0268**	**0.0597**	**8.7200e-003**	**0.0268**	**0.0355**	**0.0000**	**112.3450**	**112.3450**	**8.8200e-003**	**0.0000**	**112.5657**

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	0.1030	0.6140	0.6319	1.4400e-003	0.0329	0.0268	0.0597	8.7200e-003	0.0268	0.0355	0.0000	112.3450	112.3450	8.8200e-003	0.0000	112.5657
Maximum	**0.1030**	**0.6140**	**0.6319**	**1.4400e-003**	**0.0329**	**0.0268**	**0.0597**	**8.7200e-003**	**0.0268**	**0.0355**	**0.0000**	**112.3450**	**112.3450**	**8.8200e-003**	**0.0000**	**112.5657**

	ROG	NOx	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	Project Operation	Site Preparation	10/3/2022	10/3/2022	5	1	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Project Operation	Rubber Tired Dozers	3	0.00	247	0.40
Project Operation	Tractors/Loaders/Backhoes	4	0.00	97	0.37
Project Operation	Pressure Washers	2	8.00	13	0.30

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
Project Operation	9	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Project Operation - 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0861	0.6039	0.4841	1.1000e-003		0.0266	0.0266		0.0266	0.0266		78.1800	78.1800	7.7000e-003		78.3726
Total	**0.0861**	**0.6039**	**0.4841**	**1.1000e-003**	**0.0000**	**0.0266**	**0.0266**	**0.0000**	**0.0266**	**0.0266**		**78.1800**	**78.1800**	**7.7000e-003**		**78.3726**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0169	0.0101	0.1478	3.4000e-004	0.0329	2.6000e-004	0.0331	8.7200e-003	2.4000e-004	8.9600e-003		34.1650	34.1650	1.1200e-003		34.1931
Total	**0.0169**	**0.0101**	**0.1478**	**3.4000e-004**	**0.0329**	**2.6000e-004**	**0.0331**	**8.7200e-003**	**2.4000e-004**	**8.9600e-003**		**34.1650**	**34.1650**	**1.1200e-003**		**34.1931**

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	0.0861	0.6039	0.4841	1.1000e-003		0.0266	0.0266		0.0266	0.0266	0.0000	78.1800	78.1800	7.7000e-003		78.3726
Total	**0.0861**	**0.6039**	**0.4841**	**1.1000e-003**	**0.0000**	**0.0266**	**0.0266**	**0.0000**	**0.0266**	**0.0266**	**0.0000**	**78.1800**	**78.1800**	**7.7000e-003**		**78.3726**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0169	0.0101	0.1478	3.4000e-004	0.0329	2.6000e-004	0.0331	8.7200e-003	2.4000e-004	8.9600e-003		34.1650	34.1650	1.1200e-003		34.1931
Total	**0.0169**	**0.0101**	**0.1478**	**3.4000e-004**	**0.0329**	**2.6000e-004**	**0.0331**	**8.7200e-003**	**2.4000e-004**	**8.9600e-003**		**34.1650**	**34.1650**	**1.1200e-003**		**34.1931**

AVTA PV Project - Operation

Antelope Valley APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	27.00	Acre	27.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Off-road Equipment - Project operation

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	20.00	1.00
tblLandUse	LandUseSquareFeet	1,176,120.00	0.00

tblOffRoadEquipment	OffRoadEquipmentType		Pressure Washers
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblTripsAndVMT	WorkerTripNumber	23.00	4.00

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	0.1018	0.6146	0.6026	1.4000e-003	0.0329	0.0268	0.0597	8.7200e-003	0.0268	0.0355	0.0000	108.3146	108.3146	8.6700e-003	0.0000	108.5314
Maximum	**0.1018**	**0.6146**	**0.6026**	**1.4000e-003**	**0.0329**	**0.0268**	**0.0597**	**8.7200e-003**	**0.0268**	**0.0355**	**0.0000**	**108.3146**	**108.3146**	**8.6700e-003**	**0.0000**	**108.5314**

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	0.1018	0.6146	0.6026	1.4000e-003	0.0329	0.0268	0.0597	8.7200e-003	0.0268	0.0355	0.0000	108.3146	108.3146	8.6700e-003	0.0000	108.5314
Maximum	**0.1018**	**0.6146**	**0.6026**	**1.4000e-003**	**0.0329**	**0.0268**	**0.0597**	**8.7200e-003**	**0.0268**	**0.0355**	**0.0000**	**108.3146**	**108.3146**	**8.6700e-003**	**0.0000**	**108.5314**

	ROG	NOx	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	Project Operation	Site Preparation	10/3/2022	10/3/2022	5	1	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Project Operation	Rubber Tired Dozers	3	0.00	247	0.40
Project Operation	Tractors/Loaders/Backhoes	4	0.00	97	0.37
Project Operation	Pressure Washers	2	8.00	13	0.30

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
Project Operation	9	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Project Operation - 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0861	0.6039	0.4841	1.1000e-003		0.0266	0.0266		0.0266	0.0266		78.1800	78.1800	7.7000e-003		78.3726
Total	**0.0861**	**0.6039**	**0.4841**	**1.1000e-003**	**0.0000**	**0.0266**	**0.0266**	**0.0000**	**0.0266**	**0.0266**		**78.1800**	**78.1800**	**7.7000e-003**		**78.3726**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0157	0.0107	0.1185	3.0000e-004	0.0329	2.6000e-004	0.0331	8.7200e-003	2.4000e-004	8.9600e-003		30.1346	30.1346	9.7000e-004		30.1588
Total	**0.0157**	**0.0107**	**0.1185**	**3.0000e-004**	**0.0329**	**2.6000e-004**	**0.0331**	**8.7200e-003**	**2.4000e-004**	**8.9600e-003**		**30.1346**	**30.1346**	**9.7000e-004**		**30.1588**

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	0.0861	0.6039	0.4841	1.1000e-003		0.0266	0.0266		0.0266	0.0266	0.0000	78.1800	78.1800	7.7000e-003		78.3726

Total	**0.0861**	**0.6039**	**0.4841**	**1.1000e-003**	**0.0000**	**0.0266**	**0.0266**	**0.0000**	**0.0266**	**0.0266**	**0.0000**	**78.1800**	**78.1800**	**7.7000e-003**		**78.3726**

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
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0157	0.0107	0.1185	3.0000e-004	0.0329	2.6000e-004	0.0331	8.7200e-003	2.4000e-004	8.9600e-003		30.1346	30.1346	9.7000e-004		30.1588
Total	**0.0157**	**0.0107**	**0.1185**	**3.0000e-004**	**0.0329**	**2.6000e-004**	**0.0331**	**8.7200e-003**	**2.4000e-004**	**8.9600e-003**		**30.1346**	**30.1346**	**9.7000e-004**		**30.1588**

Appendix A - AVTA PV System GHG Emissions Diversion

GHG	Intensity Factors (lb/MWh)
CO2	702.44
CH4	0.029
N2O	0.006

Year	Energy Production (MWh)	CO2 (Ton)	CH4 (Ton)	N2O (Ton)	GHG (MT)
1	13,186	4,631	0.19	0.04	4,501
2	13,120	4,608	0.19	0.04	4,479
3	13,054	4,585	0.19	0.04	4,456
4	12,989	4,562	0.19	0.04	4,434
5	12,924	4,539	0.19	0.04	4,412
6	12,860	4,517	0.19	0.04	4,390
7	12,795	4,494	0.19	0.04	4,368
8	12,731	4,472	0.18	0.04	4,346
9	12,668	4,449	0.18	0.04	4,324
10	12,604	4,427	0.18	0.04	4,302
11	12,541	4,405	0.18	0.04	4,281
12	12,479	4,383	0.18	0.04	4,260
13	12,416	4,361	0.18	0.04	4,238
14	12,354	4,339	0.18	0.04	4,217
15	12,292	4,317	0.18	0.04	4,196
16	12,231	4,296	0.18	0.04	4,175
17	12,170	4,274	0.18	0.04	4,154
18	12,109	4,253	0.18	0.04	4,133
19	12,048	4,232	0.17	0.04	4,113
20	11,988	4,210	0.17	0.04	4,092
21	11,928	4,189	0.17	0.04	4,072
22	11,869	4,168	0.17	0.04	4,051
23	11,809	4,148	0.17	0.04	4,031
24	11,750	4,127	0.17	0.04	4,011
25	11,691	4,106	0.17	0.04	3,991

APPENDIX B BIOLOGICAL RECONNAISSANCE/JURISDICTIONAL DELINEATION

Biological Reconnaissance Survey and Delineation of Regulated Wetlands/Waters Antelope Valley Transit Authority Solar Project Lancaster, Los Angeles County, California

Prepared for:

Antelope Valley Transit Authority

TETRA TECH

301 E. Vanderbilt Way, Suite 450
San Bernardino, California 92408

TC# 102-ENV-T40784-01
Updated December 2021

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APPENDIX

SECTION 1 INTRODUCTION

The Antelope Valley Transit Authority (AVTA) proposes to develop an approximately 43-acre parcel (site) as a site for a solar facility that would generate power for an e-vehicle recharging stations. The site is located on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster, adjacent to AVTA offices (Figure 1). The site is located on the Lancaster West USGS 7.5-minute quadrangles, Township 7N, Range 12W, Section 34 and is associated with the following Assessor Parcel Numbers (APNs).

- 3128-010-026
- 3128-013-001
- 3128-013-002
- 3128-013-012
- 3128-013-004
- 3128-013-013
- 3128-013-014

Although APN 3128-013-014 was included in the reconnaissance survey, no project features will be constructed on this parcel. A biological reconnaissance survey was conducted on October 8, 2020 to determine if habitat present at the site has the potential to support sensitive biological resources. In addition, a delineation for waters subject to regulatory authority present at the site was also completed. A subsequent focused survey for sensitive lizards was conducted on December 3, 2021.

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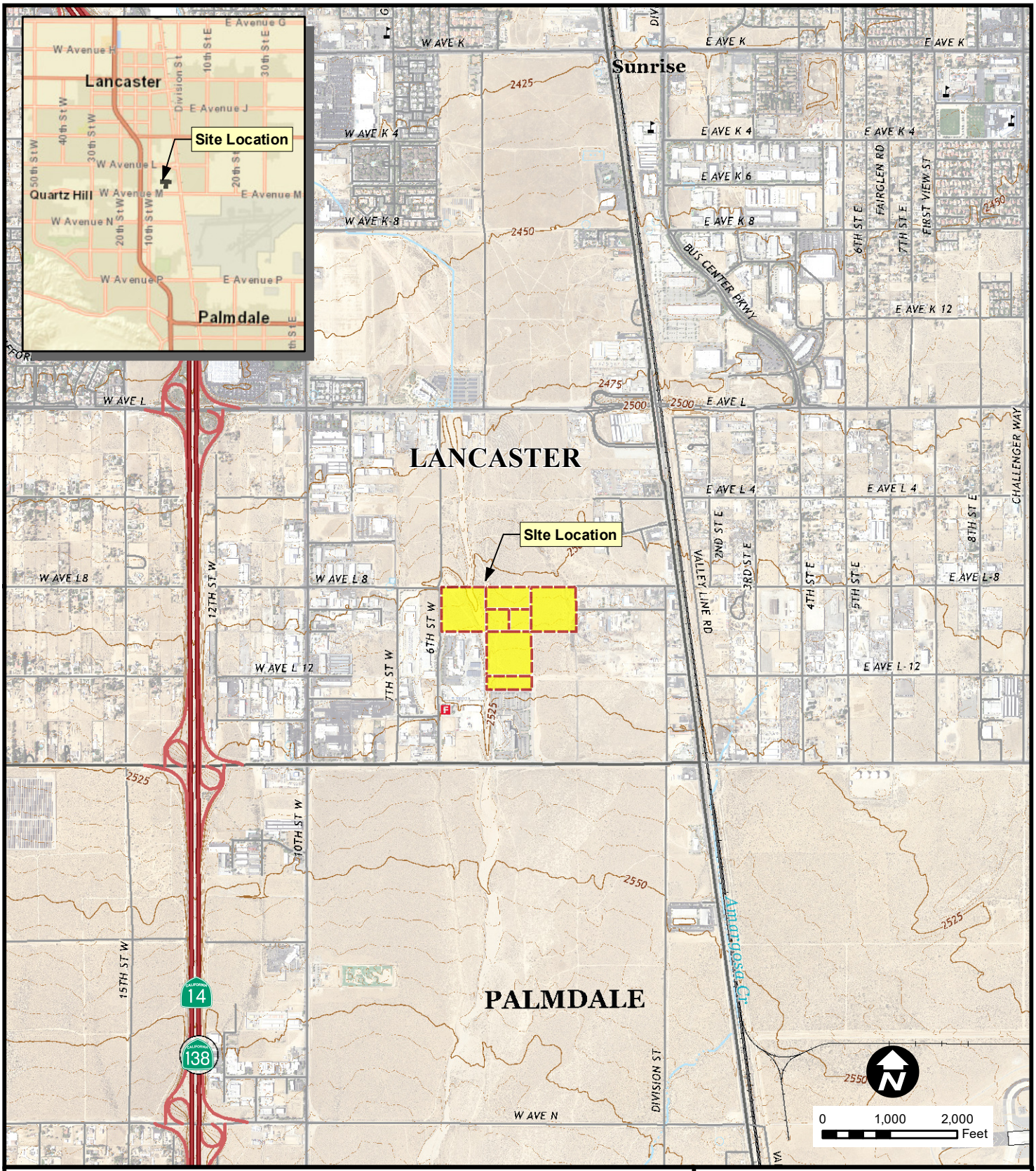


Parcel Boundary

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 1

Site Location Map

TETRA TECH

SECTION 2 REGULATORY SETTING

2.1 REGULATORY STATUS FOR SENSITIVE BIOLOGICAL RESOURCES

Federal Regulatory Status. The Federal Endangered Species Act (FESA) of 1973 describes two categories for declining species as endangered and threatened. The United States Fish and Wildlife Service (USFWS) is the government agency that enforces FESA. Endangered describes any species that is in danger of extinction throughout all or a significant portion of its range. Threatened is assigned to any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Candidate Species: Plants and animals that have been studied and the Service has concluded that they should be proposed for addition to the Federal endangered and threatened species list.

California Regulatory Status. The California Endangered Species Act (CESA) states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Under CESA, the term "endangered species" is defined as a species of plant, fish, or wildlife which is "in serious danger of becoming extinct throughout all, or a significant portion of its range" and is limited to species or subspecies native to California. Threatened species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts.

Fully Protected Species. The classification of Fully Protected was California's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Species of Special Concern. Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria as defined by the CDFW.

- Is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; and/or
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that if realized, could lead to declines that would qualify it for State threatened or endangered status.

California Native Plant Society (CNPS). The following provides a general definition of the CNPS listings:

- List 1A: Plants believed to be extinct;
- List 1B: Plants that are rare, threatened, or endangered in California and elsewhere;
- List 2: Plants that are rare, threatened, or endangered in California, but are more numerous elsewhere;
- List 3: Plants about which we need more information (a review list)"; and
- List 4: Plants of limited distribution (a watch list), as defined by CNPS.

2.2 REGULATORY SETTING FOR WATERS OF THE UNITED STATES

The U.S. Army Corps of Engineers (ACOE) regulates discharges of dredged or fill material into waters of the United States. These waters, or waters of the U.S., include wetlands and non-wetland bodies of water that meet specific criteria. In order to be considered a jurisdictional wetland under Section 404, an area must possess three wetland characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Each characteristic has a specific set of mandatory wetland criteria that must be satisfied in order for that particular wetland characteristic to be met (Environmental Laboratory 1987; United States Army Corps of Engineers 2008).

On January 23, 2020, the US Environmental Protection Agency and the ACOE finalized the Navigable Waters Protection Rule to define "waters of the United States". The Navigable Waters Protection Rule includes definitions for waters that are considered regulated Waters of the United States associated with perennial and intermittent rivers and streams. Since this final definition for Waters of the United States, the U.S, District Court for the District of Arizona ordered vacated and remained the Navigable Waters Protection Rule in the case of *Pascua Yaqui Tribe vs. U.S. Environmental Protection Agency* (EPA). As a result, agencies such as the ACOE and EPA have halted implementation of the Navigable Waters Protection Rule and are interpreting Waters of the US consisted with the pre-2015 regulatory regime.

In 2006, the Supreme Court addressed the jurisdictional scope of Section 404 of the Clean Water Act, specifically the term "the waters of the U.S.," in *Rapanos v. U.S.* and in *Carabell v. U.S.* Referred to as the Rapanos decision, the Supreme Court provided two new analytical standards for determining whether water bodies that are not Traditional Navigable Waters (TNWs), including wetland adjacent to those non- traditional navigable waters, are subject to the Clean Water Act. Water bodies are subject to Clean Water Act jurisdiction if 1) the water body is relatively permanent, or if the water body is a wetland that directly abuts (e.g., the wetland is not separated from the tributary by uplands, a berm, dike, or similar feature) a relatively permanent water body; or 2) if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs.

TNWs include but are not limited to the "navigable waters of the United States". These waters are subject to the ebb and flow of the tide and/or the water body is presently used, or has been used in the past, or may be susceptible for use (with or without reasonable improvements) to transport interstate or foreign commerce. Relatively Permanent Waters that are tributaries to TNWs are also subject to regulatory authority by the ACOE.

The 2006 ruling created uncertainty about the intended scope of waters that are protected by the Clean Water Act. As a result, in 2014, the ACOE and EPA proposed revisions to the existing 1980s regulations. After reviewing public comments and conducting public outreach meetings, the ACOE and EPA issued a final rule in June 2015. The final rule known as the Clean Water Rule, focused on clarifying the regulatory status of waters with ambiguous jurisdictional status following the 2006

Supreme Court rulings, including isolated waters and streams that flow only part of the year and nearby wetlands. Under the 2015 Clean Water Rule, a regulated water is Jurisdictional by Rule if it meets at least one of the following criteria:

- A TNW
- A tributary to a TNW
- Interstate waters
- Territorial seas
- Impoundment of jurisdictional waters

An adjacent water is Jurisdictional by Rule when located within 1,500 feet of the high tide line of a traditional navigable water or territorial seas.

2.3 REGULATORY SETTING FOR WATERS OF THE STATE

Under California State law, "waters of the state" means "any surface or groundwater including saline waters, within boundaries of the state". The State Water Resources Control Board has confirmed that under Section 401 of the Clean Water Act and the California Porter-Cologne Water Quality Control Act, discharges to wetlands and other "waters of the state" (including isolated wetlands) are subject to State regulations. The Regional Water Quality Control Board (RWQCB)-Lahontan Region regulates discharge to wetlands and "waters of the state" found within the site.

The Porter-Cologne Water Quality Control Act (Act), Water Code §13000 et seq. provides for overall regulation under state law of water quality involving waters of the State of California. This relates to both groundwater and surface water. The Act provides specific regulations related to the discharge of pollutants to surface waters of the state. Dredging, filling or excavation of isolated waters including isolated wetlands constitutes a discharge of waste to waters of the state. For projects that would dredge, fill or excavate isolated waters, the project proponent would need to seek a waste discharge requirement (WDR) permit from the RWQCB.

Pursuant to Division 2, Chapter 6, Sections 1600-1603 of the California Fish and Game Code, the California Department of Fish and Wildlife (CDFW) regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake, which support fish

or wildlife (i.e., bed to bank). The CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation."

SECTION 3 METHODS

3.1 LITERATURE REVIEW AND FIELD MOBILIZATION

Prior to mobilizing to the field, the available literature on natural resources with reference to plants and animal species in and near the project area were consulted including information from the CDFW California Natural Diversity Data Base (CNDDB) and the California Native Plant Society (CNPS) in August 2020 and updated in November 2021 (California Department of Fish and Wildlife 2021; California Native Plant Society 2021). The search radius for the databases was up to 5 miles from the site. Sensitive biological resources identified from the databases and literature reviewed for this survey that have the potential for presence in the survey area are found in Appendix A. The proximity of the site to past observations recorded in the CNDDB search radius suggested that there was high probability that habitat at the site could support burrowing owls (*Athene cunicularia*), northern California legless lizard (*Anniella pulchra*), and coast horned lizard (*Phrynosoma blainvillii*). All three of these species are a California Species of Special Concern.

Prior to mobilizing into the field, Tetra Tech conducted a review of recent satellite aerial photographs. Upon mobilization to the site, in addition to mapping vegetation communities within the site, an evaluation for suitable habitat for sensitive species identified during the literature and database search was also conducted. The site was accessed on unimproved established dirt roads.

Plants and any wildlife observed were noted and are found as Appendix B. Photographs of the site were taken during the reconnaissance and are found as Appendix C-1. In addition to plants and wildlife, soils and habitat type at each stop were noted. Habitat on the site is disturbed and of poor quality but is characterized as Joshua tree woodland. Figure 2 shows the location of each western Joshua tree (*Yucca brevifolia*) (WJT) that are characteristic of Joshua tree woodland.

3.2 SURVEY METHODS FOR DESERT TORTOISE

While desert tortoise (*Gopherus agassizii*) have not previously observed within the search radius of the CNDDB, habitat at the site is marginally suitable for occupation by this federal and State of California listed as endangered reptile. A protocol survey (United States Fish and Wildlife Service 2010, revised 2018) for desert tortoise conducted on October 8, 2020 was completed at the site.

Weather conditions are summarized in the table below. Weather conditions for temperature and wind speed were obtained using a Kestrel 3000 weather meter and were recorded at the start and conclusion of the habitat assessment. Cloud cover was recorded based on visual observations. No rain had occurred within 5 days of the biological reconnaissance. The site was surveyed by the field team with a series of transects separated by 30 meters between biologists. During the survey, biologists looked for any signs of desert tortoises including live animals, burrows, scat, and/or carcasses. Desert tortoise surveys were conducted by qualified biologists Ms. Kathryn Simon and Mr. Porfirio Pacheco and assisted by Ms. Stephanie Pacheco. The survey consisted of pedestrian transects spaced 30 feet (10 meters) apart throughout the site.

	Time	Temperature (°C/°F)	Cloud Cover (percent)	Wind Speed (miles per hour)
Start of the Reconnaissance Survey (10/08/20)	0715	17.5/63.5	10	0 to 1
Conclusion of the Reconnaissance Survey (10/08/20)	1130	28.7/83.6	10	2 to 4

3.3 SURVEY METHODS FOR MOHAVE GROUND SQUIRREL

An evaluation of habitat at the site for suitability to support Mohave ground squirrel (*Xerospermophilus mohavensis*) (MGS), a State of California listed as endangered mammal, was conducted by Ms. Kathryn Simon, who is permitted for these activities by CDFW. Optimal habitats for MGS are open and relatively undisturbed desert scrub, alkali desert scrub, Joshua tree woodlands, and annual grasslands. The site was surveyed for known MGS forage species such as winterfat (*Krascheninnikovia lanata*), thornbush (*Lycium* sp.), spiny hopsage (*Grayia spinosa*) and saltbush (*Atriplex* sp.).

3.4 SURVEY METHODS FOR WESTERN JOSHUA TREE

When encountered, locations of WJT were recorded using a GPS device (Figure 2). A sequentially numbered tree tag was placed on the north side of each WJT. Height, number of trunks, an estimate of diameter at breast-height (dbh), and a qualitative health condition was assigned to each WJT

(Appendix D). Where multiple stems were encountered per plant, the height and dbh measurements were taken from the main stem of the plant. The following qualitative criteria was applied to each WJT encountered on the site:

- Excellent: Leaves and stems appear healthy, and plant appears to have bloomed in the recent past.
- Good: Leaves and stems appear healthy, and plant appears to have bloomed in the recent past. Some leaves appearing to be dying.
- Fair: Evidence of leaf senescence but plant appeared to be alive.
- Poor: Evidence of leaf senescence and dead branches observed. Plant appeared to be dying.

3.5 SURVEY METHODS FOR BURROWING OWL AND NESTING BIRDS

During the field reconnaissance, biologists made visual observations for live burrowing owls (*Athene cunicularia*) and their sign (pellets, whitewash, burrows), and sign of nesting birds. Due to the timing of the survey, nesting activities were not anticipated. Stops were made during the survey to listen for bird calls including characteristic chattering sounds of alert burrowing owls. Observations in buffer areas off site were made for burrowing owl using binoculars.

3.6 SURVEY METHODS FOR REPTILES

To determine if the site has suitable habitat for California legless lizards and coast horned lizards, a survey of the site focusing on these two sensitive lizards was conducted on December 3, 2021 (Appendix E). The site was walked in parallel transects with a spacing of 20-meters between surveyors. To minimize glare from the sun, transects were walked in a north to south orientation. Surveyors stopped periodically to scan ahead using close-focused binoculars. Ambient weather conditions were recorded. Temperature was measured at 1 to 2 centimeters (cm) above the ground at the start, periodically during and at the conclusion of the survey. Trash encountered on the site was carefully turned over to observe any reptiles using it as refuge. Wildlife encountered during the survey were noted.

3.7 REGULATED WATERS

Review of the National Wetland Inventory map of the site identified riverine systems associated with Amargosa Creek to the west of the site and the unnamed drainage found within the eastern side of the site (United States Fish and Wildlife Service 2021). A survey for regulated waters was completed on October 8, 2020. Conditions associated with the unnamed drainage were confirmed on February 19, 2021. The unnamed drainage was surveyed using a hand-held GPS. Periodic stops were made to measure the width of the drainage. The portion of Amargosa Creek that is adjacent to the western side of the site is not within the project boundaries. Observations of riverine conditions associated with Amargosa Creek were made.

SECTION 4 RESULTS

The site is located in the City of Lancaster, which is within the Mojave Desert. The Mojave Desert receives less than 10 inches of precipitation per year that typically occurs in the winter with occasional summer thunderstorms (Schoenherr 2017). The site is undeveloped desert habitat that is has a generally level topography and is dominated by four-wing saltbush (*Atriplex canescens*), creosote (*Larrea tridentata*) and Anderson thornbush (*Lycium andersonii*) with scattered western Joshua trees (*Yucca brevifolia*) (WJT) found throughout the site. The site is highly disturbed due to off-road vehicle travel, evidence of past transient encampments and piles of trash and debris. Refuse such as discarded clothing, household appliances and furniture were observed scattered throughout the site. In addition, tracks from off-road vehicles were observed lacing throughout the site. Even with the heavy human disturbance of the site, habitat on site is characterized as Joshua tree woodland, given the number and extent of Joshua trees identified during the field survey (Figure 2).

Soils at the site have been classified by the Natural Resources Conservation Service (NRCS) as the Hesperia fine sandy loam series with a 0 to 2 percent slope (United States Department of Agriculture 2020). This soil has been classified as well-drained with a very low potential for stormwater runoff. Amargosa Creek located on the western side of the site and an unnamed tributary to Amargosa Creek found within the eastern side of the site are ephemeral riverine desert washes. Soils associated with Amargosa Creek and the unnamed drainage have been classified as Riverwash sand that is excessively drained and Hesperia fine sandy loam; respectively (United States Department of Agriculture 2020). The south and eastern sides of the site are developed. Lands beyond Amargosa Creek on the western side of the site are also developed. To the north of the site, lands are undeveloped but have been impacted by similar disturbances to those observed at the project site.

The site was the subject of an initial biological reconnaissance survey on October 8, 2021, and the results of that survey are presented here in Sections 4.1, 4.2, 4.3, 4.4, 4.5, and 4.7. Section 4.3 (Mohave Ground Squirrel) has been updated to clarify previous findings to indicate that MGS is likely absent from the site. A subsequent focused survey for lizards was conducted on December 3, 2021 and the results of that survey are presented in Section 4.6.

4.1 VEGETATION AND SENSITIVE WILDLIFE

The site is highly disturbed desert scrub habitat characterized by four-wing saltbush, creosote and Anderson thornbush (*Lycium andersonii*) with WJT scattered across the landscape (Figure 2Common birds associated with desert habitats were noted during the survey. Small mammal rodent burrows were noted throughout the site as well as black-tailed jackrabbits (*Lepus californicus*), cottontail rabbits (*Sylvilagus audubonii*), antelope ground squirrel (*Ammospermophilus leucurus*), and numerous California ground squirrel (*Otospermophilus beecheyi*) were observed primarily on the eastern side of the site. No burrowing owls, northern California legless lizard or coast horned lizard were observed at the site during the initial reconnaissance survey in October 2020.

4.2 DESERT TORTOISE

No desert tortoise or sign of desert tortoise were observed (Appendix D). No burrows that may be used by desert tortoise, scat or remains were observed. As a result, this species is assumed to be absent from the site.

4.3 MOHAVE GROUND SQUIRREL

While some common forage plants for MGS are present at the site, there are several factors present that would prevent this species from inhabiting the site, most notable is the isolation of this area from other areas of habitat and the extremely high and constant level of past and current human and domestic animal presence, which has promoted species such as California ground squirrel to thrive throughout the site. In addition, no MGS have been observed in the area in over 100 years with the exception of a non-trapped detection over 35 years ago (CNDDB 2021). These conditions result in an extremely low probability for MGS to inhabit the site and this species is assumed absent from the site.

4.4 WESTERN JOSHUA TREE

WJT were noted as predominately in excellent condition (Appendix D). As of September 22, 2020, WJT have been designated as a Candidate species under the California Endangered Species Act (CESA). As a result, these sensitive plants are protected under CESA. A total of 56 WJT were observed at the site. The location of all WJT were recorded using a GPS unit. Most of the WJT were observed to have multiple trunks. The height of the tallest trunks were recorded and ranged from 1

foot to 30 feet high. The diameter at breast height was recorded for the tallest trunk. Finally, a qualitative health condition rating was assigned to each WJT recorded and a numbered tree tag was applied to the woody bark on the north side of each WJT. No other sensitive plants were identified during the survey.

4.5 BURROWING OWL AND NESTING BIRDS

No burrowing owl or sign of burrowing owl at the site were encountered during the survey. Due to the timing of the survey, no passerine (songbirds) or raptor nesting activity were observed. Even with the highly disturbed nature of the site and the use of existing burrows at the site by California ground squirrels (which precludes their use by burrowing owls), there is a moderate probability for occurrence of burrowing owl at the site, particularly for foraging migrating owls.

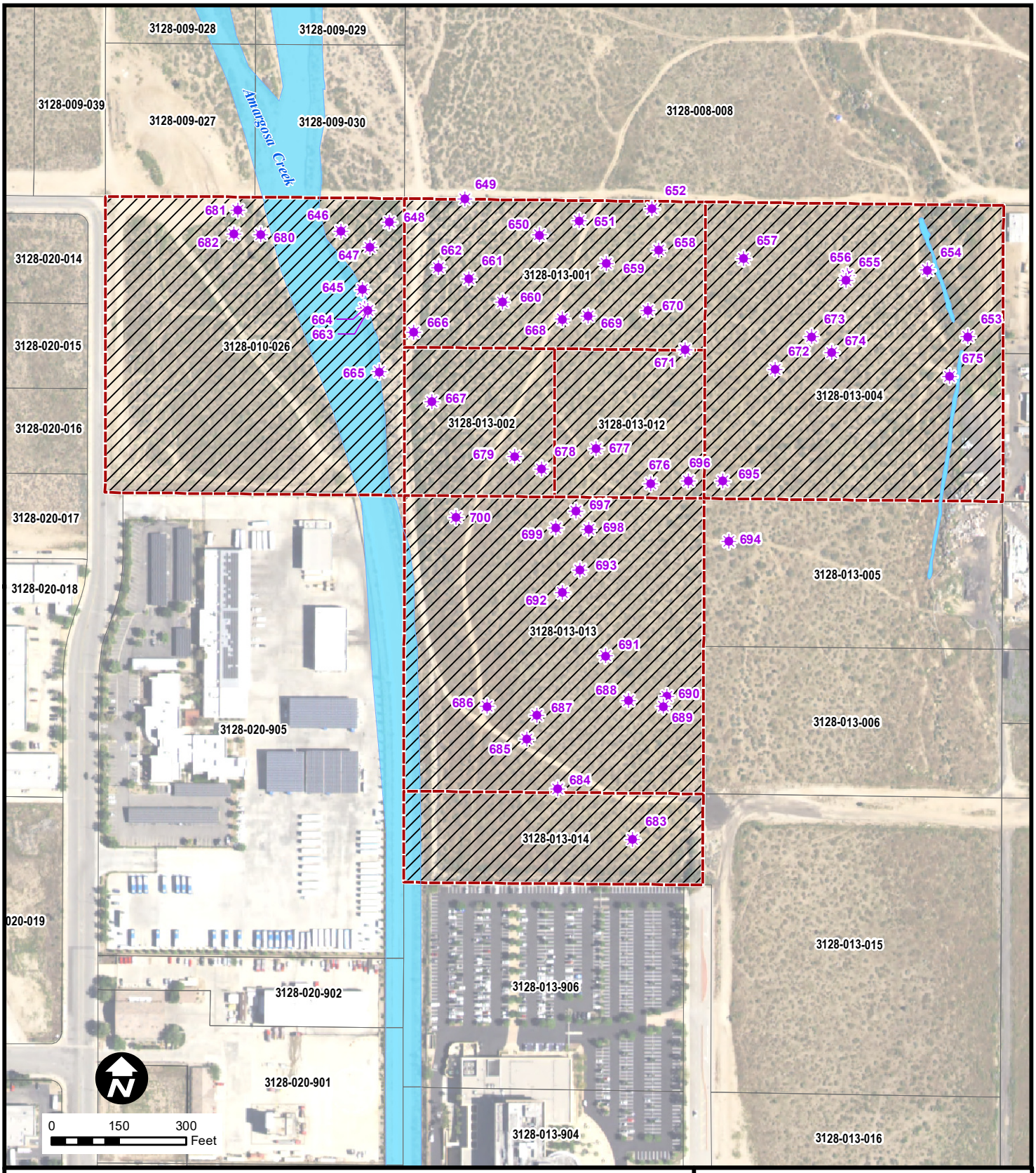
4.6 REPTILES

Since the October 2020 survey, the site was observed to be more disturbed by off road use and trash disposal. One western Joshua tree was observed to have been knocked over likely due to being hit by a vehicle. Two common night lizards (*Xantusia vigilis*) were observed beneath trash in two separate locations within the site. No other lizards or reptiles were observed. California harvester ant (*Pogonomyrmex californicum*) colonies are present at the site and ants were observed to be actively foraging at the time of the survey. These ants are prey for horned lizards such as the coast horned lizard. No coast horned lizards or sign of coast horned lizard in the form of scat were observed in proximity to any of the ant colonies observed on site. No legless lizards were observed beneath overturned trash.

4.7 REGULATED WATERS

Amargosa Creek located on the western side and an unnamed tributary on the eastern side of the site were found to have field characteristics consistent with a riverine water system with defined bed to bank features (Figure 3). Photographs of both Amargosa Creek and the unnamed drainage are found as Appendix C-2. Location and orientation of the photographs are detailed on Figure 3. The unnamed drainage appears to originate off-site to the south (Photograph 1, Appendix C-2). The adjacent property has stored numerous large wooden spools and the drainage has been disturbed by this land use. Within the site, the unnamed drainage is relatively undisturbed (Photograph 2,

Appendix C-2) until it approaches the northeastern corner. Due to what appears to be soils excavations and movement, the drainage appears to be filled in (Photograph 3, Appendix D-2). Features of bed and bank are present for approximately 300 feet within the site. Very close to the north eastern border of the site, off-site excavation of the drainage has caused a break in hydrology (Photograph 4, Appendix C-2). The unnamed drainage was observed to have field characteristics consistent with a riverine water system. A total of 0.11 acres/4,869 square feet of riverine habitat is present within APN 3128-13-004. Amargosa Creek was observed to have hardened sides for the portion of the creek adjacent to APNs 3128-013-014 and 3128-013-013 (Photographs 5 and 6, Appendix C-2). The remainder of Amargosa Creek adjacent to the project was observed to have natural earthen banks. No plants associated with desert washes were observed within the portion of Amargosa Creek and the unnamed drainage adjacent to the site. No hydric/saturated or inundated soils were observed within Amargosa Creek or the unnamed drainage. Soils within Amargosa Creek were confirmed to be unconsolidated sands as identified by the NRCS soil survey. Soils within the unnamed drainage have been classified as Hesperia fine sandy loam, 0 to 2 percent slope (United States Department of Agriculture 2020). No sign of conditions that could support a wetland were observed within the unnamed drainage or Amargosa Creek.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3128-009-029
3128-009-039
3128-009-027
3128-009-030
Amargosa Creek
3128-008-008
3128-020-014
3128-020-015
3128-020-016
3128-020-017
3128-020-018
3128-020-019
3128-020-905
3128-020-902
3128-020-901
3128-010-026
3128-013-001
3128-013-002
3128-013-004
3128-013-005
3128-013-006
3128-013-012
3128-013-013
3128-013-014
3128-013-015
3128-013-016
3128-013-904
3128-013-906
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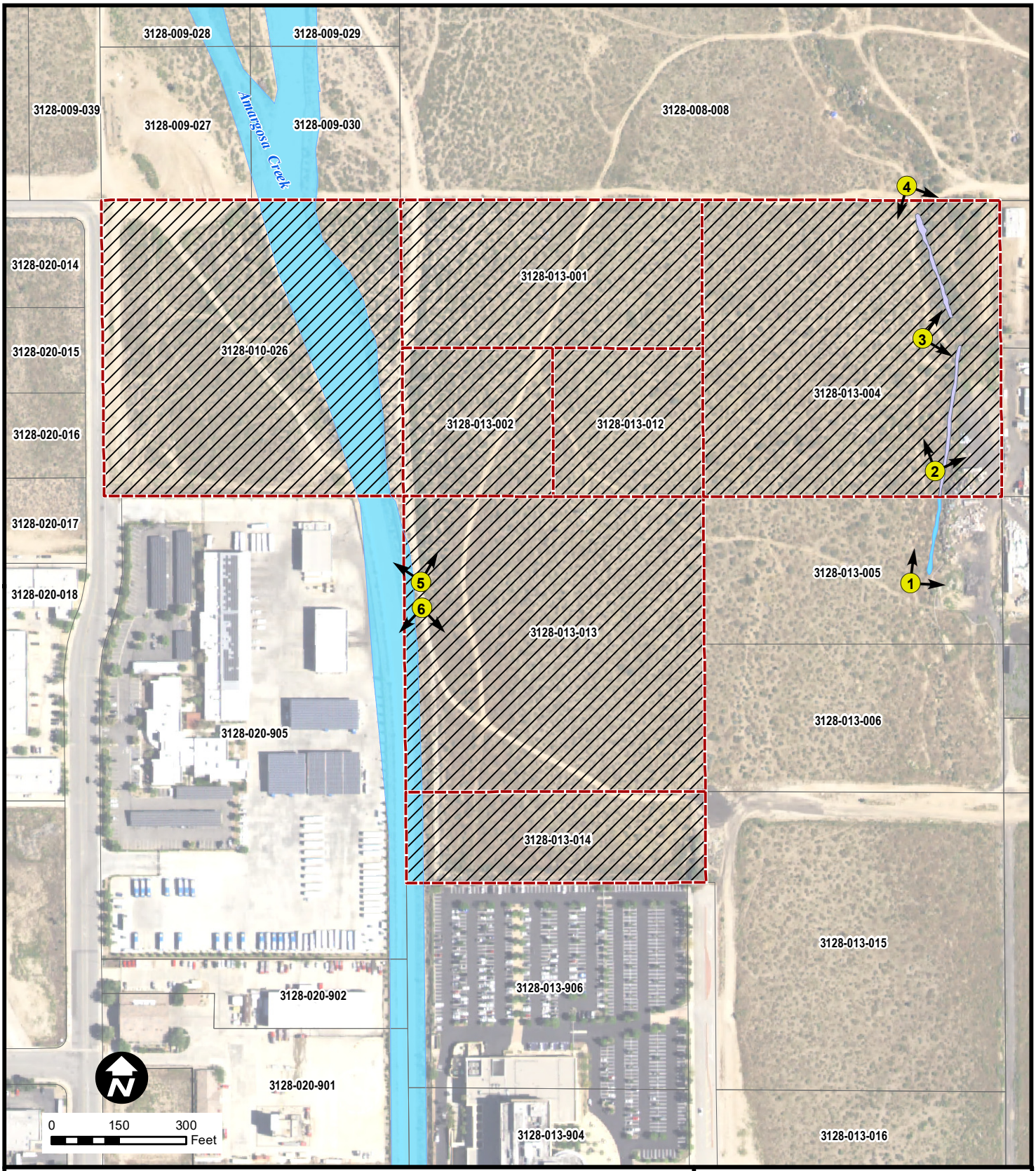
300
Feet
Joshua Tree Location
Yucca brevifolia Woodland Alliance-
Joshua tree woodland [Highly Disturbed]
(Atriplex canescens-Larrea tridentata-
Lycium andersonii understory)
Project Parcel
Riverine
ANTELOPE VALLEY TRANSIT AUTHORITY
Figure 2
Project Location
and Habitat
TETRA TECH

P:\GIS\AVTA\Fig_02 Habitat and Regulated Waters.mxd



Yucca brevifolia Woodland Alliance-Joshua tree woodland [Highly Disturbed] *(Atriplex canescens-Larrea tridentata-Lycium andersonii* understory)

Project Parcel

Riverine

1 Photograph Location and Orientation

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 3

Project Location and Regulated Waters

TETRA TECH

SECTION 5 DISCUSSION AND RECOMMENDATIONS

5.1 VEGETATION

As a Candidate species, the WJT present at the site are sensitive and protected by CESA. If "take" or adverse impacts to WJT cannot be avoided during project implementation, consultation with the CDFW will be required and a CESA Incidental Take Permit (ITP) (pursuant to Fish & Game Code, § 2080 *et seq.*) will be needed. During the consultation process, if take of WJT is necessary for development of the site, compensatory mitigation will be required in the ITP and may include in-kind and/or in-lieu mitigations as per Fish and Game Code 2081 to offset impacts. The ITP would also specify minimization and avoidance measures and fully mitigate any impacts to WJT. No take of WJT can occur until the ITP has been issued to and accepted by the applicant.

5.2 WILDLIFE

The site has been highly disturbed by unauthorized disposal of household items and off road vehicle use. In conjunction with the presence of a large population of California ground squirrels, MGS are likely absent from the site, and while no further survey work for this species is recommended, MGS are recommended to be included in the ITP sought for WJT.

No sensitive reptiles (northern legless lizard or coast horned lizard) were observed at the site during the focused survey conducted on December 3, 2021. No mitigations are recommended.

Based on the level of disturbance observed during two surveys, the site has moderately suitable habitat for burrowing owl. While none were noted during the initial survey conducted in October of 2020 or during the focused reptile survey conducted in December 2021, the presence of small mammal burrows suggests that there are prey present for burrowing owl. Habitat is present at the site that is suitable for nesting birds. Evidence of old nests were observed in WJT. It is recommended that within 30 days and again within 24 hours of ground-disturbing activities, a burrowing owl/nesting bird survey should be conducted by a qualified biologist to determine if burrowing owl or other nesting birds are present. If present, buffer zones based on the sensitivity of the nesting bird should be established to avoid direct and indirect impacts. An Avoidance Plan for full avoidance of impacts to nesting birds and/or burrowing owl is provided as Appendix F.

5.3 REGULATED WATERS

No jurisdictional wetlands were observed within the portion of Amargosa Creek found on the western side of the site or the unnamed drainage found within the eastern side of the site. Amargosa Creek and the unnamed drainage are riverine streambed habitat that is characterized by intermittent streamflow that occurs only part of the year. Intermittent flooding may result in surface water flow within the drainage, but this condition has not resulted in the formation of wetlands.

Amargosa Creek and the unnamed drainage are part of the Antelope-Freemont Valleys Basin which is a closed topographic basin with no outlets to the ocean (US Army Corps of Engineers 2017). The ACOE has determined that drainages within the Antelope-Freemont Valleys Basin that are tributaries to Rosamond, Buckhorn and Rogers Lakes are isolated waters and not subject to Section 404 of the Clean Water Act (US Army Corps of Engineers 2017). As a result, Amargosa Creek is an isolated water and not subject to Section 404 of the Clean Water Act.

Under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Act, the RWQCB-Lahontan asserts jurisdiction over jurisdictional wetlands and non-isolated waters. As Amargosa Creek and the unnamed drainage are is not subject to regulation under Section 404; they are not subject to regulatory authority by the RWQCB-Lahontan under Section 401. While not regulated under Section 401, Amargosa Creek and the unnamed drainage are subject to regulation under state law for water quality as a water of the State of California. The Act provides specific regulations related to the discharge of pollutants to surface waters of the state. As a result, for project activities that would impact the unnamed drainage, the project proponent may need to seek a waste discharge requirement (WDR) permit from the RWQCB. Under Section 1600 et. seq. of the California Department of Fish and Game Code, the CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake, which support fish or wildlife. is Unnamed drainage a riverine streambed with intermittent flow and would be subject to regulatory authority by the CDFW. However, Amargosa Creek is outside site development boundaries and would not be impacted by project activities and, therefore, would not require permits issued by the RWQCB or CDFW for the proposed development of the site.

SECTION 6 REFERENCES

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APPENDIX A SENSITIVE BIOLOGICAL RESOURCES DATABASES REVIEW

Appendix A
Sensitive Biological Resource Databases Review
AVTA Solar Project
Lancaster, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Plants			
Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*)[1,2]	Chenopod scrub; alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands.	Federal: ND State: ND CNPS: 1B.1	Absent; record of observation is dated 1902 and no suitable habitat is present at the site.
Alkali mariposa-lily (*Calochortus striatus*)[1,2]	Chaparral, chenopod scrub, Mojavean desert scrub, meadows and seeps; alkaline meadows and ephemeral washes.	Federal: ND State: ND CNPS: 1B.2	Absent; no suitable habitat is present the site.
Peirson's morning-glory (*Calystegia peirsonii*)[2]	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest and valley and foothill grasslands,	Federal: ND State: ND CNPS: 4.2	Absent; no suitable habitat is present within the undeveloped portions of the site.
White pygmy-poppy (*Canbya candida*)[1,2]	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; gravelly, sandy, granitic places.	Federal: ND State: ND CNPS: 4.2	Absent; record of observation is dated 1922 and no suitable habitat is present at the site.
Mojave paintbrush (*Castilleja plagiotoma*)[2]	Sagebrush scrub, pinyon and juniper woodland.	Federal: ND State: ND CNPS: 4.3	Absent; no suitable habitat is present within the undeveloped portions of the site.
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)[1,2]	Coastal scrub, chaparral, cismontane woodland, valley and foothill grassland; dry slopes and flats.	Federal: ND State: ND CNPS: 1B.1	Absent; record of observation is dated 1896 and has been identified by a botanist as a possible miss-identification or bad locality.
Mojave spineflower (*Chorizanthe spinosa*)[2]	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, playas, alkaline soils	Federal: ND State: ND CNPS: 4.2	Absent; no suitable habitat is present within the undeveloped portions of the site.
Rosamond's eriastrum (*Eriastrum rosamondense*)[1,2]	Chenopod scrub, vernal pools; alkali pool beds separated by very low hummocks with open chenopod scrub often in sandy soils.	Federal: ND State: ND CNPS: 1B.1	Absent; no suitable habitat is present within the undeveloped portions of the site.
Golden goodmania (*Goodmania luteola*)[2]	Mojavean desert scrub, meadows and seeps, playas, valley and foothill grassland.	Federal: ND State: ND CNPS: 4.2	Absent; no suitable habitat is present within the undeveloped portions of the site.

Appendix A
Sensitive Biological Resource Databases Review
AVTA Solar Project
Lancaster, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Birds			
Tricolored blackbird (*Agelaius tricolor*)[1]	Highly colonial species; requires open water, protected nest substrate and forage area with insect prey within a few kilometers of the colony.	Federal: ND State: ST	Absent; no suitable habitat is present at the site
Burrowing owl (*Athene cunicularia*)[1]	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Federal: ND State: California Species of Special Concern	Moderate; although the site is highly disturbed, suitable habitat is present and observations recorded within 5 to 10 miles of the site.
Ferruginous hawk (*Buteo regalis*)[1]	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats.	Federal: ND State: ND	Low; the site has limited habitat available for roosting and nesting but can be used for foraging.
Swainson's hawk (*Buteo swainsoni*)[1]	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs and agricultural lands with groves or lines of trees.	Federal: ND State: ST	Low; the site has limited habitat available for roosting and nesting but can be used for foraging.
Merlin (*Falco columbarius*)[1]	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grassland and deserts, farms and ranches	Federal: ND State: ND	Low; the site has limited habitat available for roosting and nesting but can be used for foraging.
Least Bell's vireo (*Vireo bellii pusillus*)[1]	Summer resident of southern California in low riparian in the vicinity of water.	Federal: FE State: SE	Absent; no suitable habitat is present at the site
Mammals			
Mohave ground squirrel (*Xerospermophilus mohavensis*)[1]	Open desert scrub, alkali scrub and Joshua tree woodland. Also feeds in annual grasslands, sandy to gravely soils.	Federal: ND State: ST	Absent; the highly disturbed nature of the site has likely precluded the presence of this sensitive species.
Insects			
Crotch bumble bee (*Bombus crotchii*)[1]	Coast California east to the Sierra-Cascade crest and south into Mexico. Food plant genera includes Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Federal: ND State: CE	Low; most recent observation in 1971; undeveloped habitat at the site has been highly disturbed in the past. The 1971 observation is 4.3 miles northwest of the site.

Appendix A
Sensitive Biological Resource Databases Review
AVTA Solar Project
Lancaster, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Mollusks			
Soledad shoulderband (*Helminthoglypta fontiphila*)[1]	Air-breathing terrestrial snail frequently found in riparian habitats (springs, seeps, along streams). May be found in rock piles, flood-borne debris or under dead yuccas where other cover is not available.	Federal: ND State: ND	Absent; no suitable habitat is present at the site
Reptiles			
Northern California legless lizard (*Anniella pulchra*)[1]	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential.	Federal: ND State: California Species of Special Concern	Absent; while observations recorded within 1 to 5 miles of the site. none observed during focused survey of the site for lizards.
Coast horned lizard (*Phrynosoma blainvillii*)[1]	Inhabits coastal sage scrub and chaparral in arid and semi-arid climates.	Federal: ND State: California Species of Special Concern	Absent; none observed during focused survey of the site for lizards.

Notes:
ND No Designation

Federal Status:
FE Federally listed Endangered
FT Federally listed Threatened
BG EPA Bald and Golden Eagle Protection Act

State Status:
CE Candidate Endangered
SE State listed Endangered
ST State listed Threatened
SR State Rare
SSC California Department of Fish and Wildlife Species of Special Concern
FP California Department of Fish and Wildlife Protected Species (Fully)

California Rare Plant Ranking System:
1B.1 Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
1B.2 Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
1B.3 Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California
2A: Plants Presumed extirpated in California but comment elsewhere
2B.1 Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
2B.2 Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
2B.3 Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
4.1 Plants with limited distribution or infrequent throughout a broader area in California; seriously threatened in California
4.2 Plants with limited distribution or infrequent throughout a broader area in California; moderately threatened in California
4.3 Plants with limited distribution or infrequent throughout a broader area in California; not very threatened in California

Sources:

Source: [1]California Department of Fish and Wildlife, Natural Diversity Data Base, Lancaster West, USGS 7.5' Quadrangle, October 7, 2020, updated November 5, 2021

[2]California Native Plant Society Rare Plant Program, November 8, 2021

Criteria:

Present: Species was observed in or immediately adjacent to the survey area within the past 5 years.
High: Habitat (including vegetation, soils and elevation factors) and known historical range for the species occurs in the survey area and a known occurrence has been recorded within 5 miles and within the past 30 years. Habitat is relatively undisturbed by human or domestic animal activities.
Moderate: Habitat for the species occurs in the survey area and a known occurrence has been recorded between 5 and 10 miles away within the past 30 years. Or historical range for the species occurs in the survey area and a known occurrence has been recorded within 5 miles and within the past 30 years with only two of three habitat parameters present (appropriate vegetation, soils and elevation), habitat quality has been degraded by human and/or domestic animal use.
Low: Limited habitat for the species occurs in the survey area and known occurrences are greater than 10 miles from the survey area or over 30 years old. Or habitat quality is poor due to human and/or domestic animal use and only one parameter present (appropriate vegetation, soils and elevation).
Absent: Beyond those factors listed for Low potential, the species is easily identifiable throughout the year and was not observed (i.e., most tree species); habitat quality is very poor due to human and/or domestic animal use

APPENDIX B FLORA AND FAUNA COMPENDIUM

Appendix B
Flora and Fauna Compendium
AVTA Solar Project
Lancaster, California

Flora	**Flowering Plants**
Ephedraceae	**Ephedra Family**
Ephedra californica	Desert tea
Angiospermae: Monocotyledonae	**Monocot Flowering Plants**
Agavaceae	**Century Plant Family**
Yucca brevifolia	Joshua tree
Poaceae	**Grass Family**
Bromus madritensis	Foxtail chess*
Schismus barbatus	Common Mediterranean grass*
Angiospermae: Dicotyledonae	**Dicot Flowering Plants**
Asteraceae	**Aster Family**
Artemisia tridentata	Big sagebrush
Ericameria nauseosus	Rabbit brush
Hemizonia sp.	Tarweed
Tetradymia spinosa	Short spine horse brush
Stephanomeria pauciflora	Wire lettuce
Boraginaceae	**Borage Family**
Amsinkia menziesii	Fiddleneck
Brassicaceae	**Mustard Family**
Brassica tournefortii	Sahara mustard*
Cactaceae	**Cactus Family**
Cylindropuntia echinocarpa	Golden cholla
Convolvulaceae	**Morning Glory Family**
Cuscuta sp.	Dodder
Chenopodiaceae	**Goosefoot Family**
Atriplex canescens	Four-wing saltbush
Salsola tragus	Russian thistle*
Krascheninnikovia lanata	Winterfat
Euphorbiaceae	**Legume Family**
Croton setiger	Dove weed
Fabaceae	**Legume Family**
Ceratonia siliqua	Carob tree*
Polygonaceae	**Buckwheat Family**
Eriogonum gracile	Slender wooly buckwheat
Simaroubaceae	**Quassia Family**
Ailanthus altissima	Tree of heaven*
Solanaceae	**Nightshade Family**
Lycium cooperi	Peach thorn
Tamaricaceae	**Tamarix Family**
Tamarix ramosissima	Salt cedar
Zygophyllaceae	**Caltrop Family**
Larrea tridentata	Creosote

Appendix B
Flora and Fauna Compendium
AVTA Solar Project
Lancaster, California

Fauna	**Birds, Reptiles and Mammals**
Aves	**Birds**
Columbidae	**Pigeons and Doves**
Columba livia	Feral pigeon**
Zenaida macroura	Mourning dove
Corvidae	**Crows and Ravens**
Corvus corax	American raven
Falconidae	**Falcon Family**
Falco mexicanus	Prairie falcon
Fringillidae	**Finch Family**
Haemorhous mexicanus	House finch
Odontophoridae	**New World Quails**
Gallipepia californica	California quail
Passerellidae	**New World Sparrows**
Zonotrichia leucophrys	White-crowned sparrows
Picidae	**Woodpeckers**
Colaptes auratus	Northern flicker
Sturnidae	**Starling Family**
Sturnus vulgaris	Common starling**
Tyrannidae	**Tyrant Flycatchers**
Myiarchus cinerascens	Ash-throated fly catcher
Mammalia	**Mammals**
Leporidae	**Rabbits and Hares**
Lepus californicus	Black-tailed jackrabbit
Sylvilagus audubonii	Cottontail rabbit
Sciuridae	**Squirrels**
Ammospermophilus leucurus	Antelope ground squirrel
Otospermophilus beecheyi	California ground squirrel
Reptilia	**Reptiles**
Xantusiidae	**Night Lizards**
Xantusia vigilis	Common night lizard

* Denotes non-native plant
** Denotes non-native wildlife

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APPENDIX C PHOTOGRAPHS

APPENCIX C-1 PHOTOGRAPHS FOR RECONNAISSANCE SURVEY

Appendix C-1
Site Photographs
AVTA Solar Project
Lancaster, CA

Photograph 1: **View of the southern portion of the solar project site View to the north.**	

Photograph 2: **View of the western portion of the AVTA solar project site. View to the northeast.**	

Appendix C-1
Site Photographs
AVTA Solar Project
Lancaster, CA

Photograph 3: **View of the northwest portion of the AVTA solar project site. View to the south.**	

Photograph 4: **View of the northeastern portion of the AVTA solar project site. View to the south.**	

Appendix C-1
Site Photographs
AVTA Solar Project
Lancaster, CA

Photograph 5: **View of the center portion of the AVTA solar project site. View to the south.**	

Photograph 6: **View of the center portion of the AVTA solar project site. View to the west.**	

APPENDIX C-2 PHOTOGRAPHS OF REGULATED WATERS

Appendix C-2
Delineation Photographs
AVTA Solar Project
Lancaster, CA

Photograph 1: **Off-site beginning of eastern unnamed drainage. View to the north.**	
Photograph 2: **View of the eastern unnamed drainage within the project area. View to the north.**	

Appendix C-2
Delineation Photographs
AVTA Solar Project
Lancaster, CA

Photograph 3: **Break in drainage features due to ground disturbances. View to the east**	

Photograph 4: **View of off-site conditions that have eliminated bed-to-bank features of the unnamed eastern drainage. View to the southeast.**	

Appendix C-2
Delineation Photographs
AVTA Solar Project
Lancaster, CA

Photograph 5: **View Amargosa Creek to the west of the project site. View to the north.**	
Photograph 6: **View Amargosa Creek to the west of the project site. View to the south.**	

APPENDIX D FIELD FORMS

Date of survey: 08 Oct 2020 (day, month, year) Survey biologist(s): P. Pacheco, S Pacheco, K Simon (name, email, and phone number)

Site description: AVTA Solar, 40 ac, Lancaster (project name and size; general location)

County: Los Angeles Quad: Lancaster W Location: See west (UTM coordinates, lat-long, and/or TRS; map datum)

Circle one: ~~100% coverage~~ or Sampling Area size to be surveyed: 40ac Transect #: 12 Transect length: Varies

GPS Start-point: 395638 / 3834966 (easting, northing, elevation in meters) Start time: 0715 am/pm

GPS End-point: 395599 / 3835161 (easting, northing, elevation in meters) End time: 1130 am/pm

Start Temp: 17.5 °C End Temp: 28.7 °C

Live Tortoises

Detection number	GPS location Easting	Northing	Time	Tortoise location (*in burrow*: all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No or Unknown*)	Existing tag # and color, if present
1						
2						
3				DT		
4						
5			NO			
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting	Northing	Type of sign (*burrows, scats, carcass, etc*)	Description and comments
1				
2				
3			Sign	
4				
5			NO	
6				
7				
8				

Saltbush scrub w/ JT, Creosote, lycium

661-572-2051

Joshua Tree Datasheet

page 1 of ~~2~~ 3	8-Oct-20

Survey Conducted by	P. Pacheco, S. Pacheco, K. Simon
Site Name, Project #	AVTA Solar Project

Place all tree tags facing north on northernmost trunk at approx 4 feet above ground level when possible

	Tree Tag #	Est Ht (feet) (tallest)	# trunks	Est ~~total~~ dbh (in) (largest)	Condition*	Location		Notes
						Lat	Long	
1	700	12	6	18	E	34.651122	-118.138462	
2	699	15	5	24	E	1045	7721	
3	698	15	1	20	E	1059	7477	
4	697	14	1	24	E	1169	7575	
5	696	10	1	10	E	1363	6743	
6	695	8	3	10	E	~~0695~~ 5137	6465 5739	largest trunk dead + down
7	694	10	1	10	E	6976	6378	
8	693	15	3	10	G	0812	7541	
9	692	18	~~2~~ 3	24	E	0669	7666	
10	691	12	2	10	E	0785	7344	
11	690	11	~~2~~ 1	~~24~~	E	0062	3688	
12	689	15	~~3~~	30	E	9963	6957	
13	688	15	1	24	E	9996	7144	
14	687	12	3	24	E	9913	7801	
15	686	10	4	10	E	9938	8243	large dead trunk down
16	685	~~6~~	1	8	E	9757	3791	
17	684	12	3	24	E	4945	7648	
18	683	12	14	~~24~~ 12	E	9146	7158	one dead trunk
19	~~682~~	10	1	10	P	2826	0149	
20	681	~~25~~	10	40	E	2728	3961	
21	680	12	2	~~3~~0	E	2841	9933	
22	679	10	3	12	P	1499	8034	
23	678	12	9	24	E	34.65 1425	-118.137832	
24	677	15	3	24	E	1555	7429	
25	676	12	6	20	E	1343	7025	

* E = Excellent, G = good, F = Fair, P = poor

Joshua Tree Datasheet

 | 8-Oct-20

Survey Conducted by	P. Pacheco, S. Pacheco, K. Simon
Site Name, Project #	AVTA Solar Project

Place all tree tags facing north on northernmost trunk at approx 4 feet above ground level when possible

	Tree Tag #	Est Ht (feet)	# trunks	Est total dbh (in)	Condition*	Location		Notes
						Lat	Long	
1	675	10	2	10	G	5197	4843	
2	674	10	2	20	G	2159	5693	
3	673	20	35	16	E	2254	5845	2 small dead trunks
4	672	10	2	16	E	2052	6111	
5	671	~~20~~	5	24	E	2167	6782	
6	670	12	~~3~~	12	P	2402	7057	one dead trunk
7	669	12	1	24	E	2367	7499	
8	668	20	19	30	E	5234	7682	
9	667	20	~~5~~	24	E	1831	8652	
10	666	25	4	30	E	2254	8792	
11	665	35	1	40	E	2011	9045	
12	664	20	6	40	~~E~~ G	2394	9158	
13	663	12	1	10	E	2382	9131	
14	662	10	1	12	P	2654	8612	
15	661	15	11	24	E	2585	8389	
16	660	25	8	30	E	2446	8135	
17	659	15	2	20	E	5267	1374	
18	658	20	16	24	G	1774	6984	
19	657	15	4	10	P	2728	6354	
20	656	6	3	12	~~E~~ G	2633	5584	
21	655	25	16	24	E	2601	5592	
22	654	15	11	10	E	2669	4991	
23	653	25	3	20	G	2263	4685	
24	652	12	1	~~30~~	E	3027	7038	
25	651	12	7	30	E	2946	7572	

* E = Excellent, G = good, F = Fair, P = poor

~~650 15 4 30 E 2857 7866~~

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Joshua Tree Datasheet

8-Oct-20

Survey Conducted by	P. Pacheco, S. Pacheco, K. Simon
Site Name, Project #	

Place all tree tags facing north on northernmost trunk at approx 4 feet above ground level when possible

	Tree Tag #	Est Ht (feet)	# trunks	Est total dbh (in)	Condition*	Location		Notes
						Lat	Long	
1	650	15	4	30	E	2857	7866	
2	649	35	2	30	E	3076	8424	
3	648	20	2	30	G	2926	8982	
4	647	30	4	40	G	2772	9125	
5	646	15	2	30	E	2867	9341	
6	645	4	1	8	E	2511	9176	
7								
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* E = Excellent, G = good, F = Fair, P = poor

24-Feb-21

Joshua Tree Datasheet

page 1 of 1 | ~~8-Oct-20~~

Survey Conducted by	P. Pacheco, S. Pacheco, K. Simon
Site Name, Project #	AVTA – Techeck JT

Place all tree tags facing north on northernmost trunk at approx 4 feet above ground level when possible

	Tree Tag #	Est Ht (feet)	# trunks	Est total dbh (in)	Condition*	Location		Notes
						~~Lat~~ E	~~Long~~ N	
1	681					0395124	3835353	
2	682					5521	5137	
3	683					5792	4726	
4	684					0395741	3834760	
5	685					5720	4794	
6	686					5693	4816	
7	687					5727	4810	
8	688					5789	4820	
9	689					5813	4816	
10	690					5815	4823	
11	694					5857	4928	
12	695					5853	4969	
13	659					5774	5117	
14	668					5744	5079	
15								
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22								
23								
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* E = Excellent, G = good, F = Fair, P = poor

APPENDIX E FOCUSED REPTILE SURVEY LETTER REPORT

TETRA TECH

13 December 2021 SJP-T40784-4764

Mr. Macy Neshati, Executive Director/CEO
Antelope Valley Transit Authority
2210 6th Street W
Lancaster, California 93534

Subject: Survey for Lizards and Other Reptiles at a 43-Acre Solar Project Site, southeast corner of the intersection of Avenue L-8 and 6th Street West, Lancaster, California

Reference: a) Draft Initial Study/Mitigated Negative Declaration for Antelope Valley Transit Authority Solar Project Site Plan Review (SPR) 21-07. September 2021; and

b) Biological Reconnaissance Survey and Delineation of Regulated Wetlands/Waters, Antelope Valley Transit Authority Solar Project, Lancaster, Los Angeles County, California. May 2021, Revised December 2021

Dear Mr. Neshati:

Please find as follows the results of a survey for lizards and other reptiles at the subject site that is proposed for development with an alternative energy solar project.

Background

On October 8, 2020, a biological reconnaissance survey was completed for the subject site. As part of the preparation for the survey, a review of previous observations of sensitive biological resources as recorded in the California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife 2020) was completed. During that review, it was noted that two lizards, northern California legless lizard (*Anniella pulchra*) and coast horned lizard (*Phrynosoma blainvillii*) have been observed within 1 to 5 miles from the site. During our initial review of the database, we concluded that there was a high probability for presence of these lizards based on how close previous observations were to the site, even though the habitat on the site is disturbed by human activity. Neither lizard is listed by either the California Endangered Species Act (ESA) or federal ESA, although both are identified as California Species of Special Concern by the California Department of Fish and Wildlife (CDFW). During the field reconnaissance survey of the site, no northern California legless lizards or coast horned lizards were observed, and this conclusion was documented in the May 2021 version of the technical report.

In compliance with the California Environmental Quality Act, a Draft Initial Study was prepared and circulated for public review (from September 3 through October 4, 2021) that included an analysis of project impacts to sensitive biological resources. CDFW provided comments indicating that because the Biological Reconnaissance Survey Report indicated a high probability of occurrence of these sensitive lizards on the site, then mitigation for that potential loss must be provided. To clarify this issue, a focused survey of the site was conducted on December 3, 2021 to determine what lizards or other reptiles are present at the site and to confirm habitat conditions for this species. No sensitive lizards were observed during the survey. In addition, based on the high degree of past and on-going disturbance at the site, habitat suitable to support these sensitive lizards is absent.

Tetra Tech, Inc.
301 E. Vanderbilt Way, Suite 450, San Bernardino, CA 92408-3562
Tel 909.381.1674 Fax 909.889.1391 www.tetratech.com

Methods

Tetra Tech's qualified reptile biologist Mr. Porfirio Pacheco, assisted by Ms. Stephanie Pacheco, mobilized to the site on December 3, 2021. The site was walked in parallel transects with a spacing of 20 meters between surveyors. To minimize glare from the sun, transects were walked in a north to south orientation. Surveyors stopped periodically to scan ahead using close-focused binoculars. Ambient weather conditions were recorded. Temperature was measured at 1 to 2 centimeters (cm) above the ground at the start, periodically during and at the conclusion of the survey. Trash encountered on the site was carefully turned over to observe any reptiles using it as refuge. Wildlife encountered during the survey was noted.

Results

Weather conditions for temperature and windspeed were recorded using a Kestrel 3000 weather meter. Cloud cover was recorded based on visual observations. No rain had occurred within five days of the survey. Measured soil temperatures and ambient conditions are summarized in Table 1. Table 2 details wildlife observed during the survey. Photographs taken during the survey are found as Appendix A.

Table 1: Weather Conditions and Soil Temperatures

Time	Temperature 1-2 cm from Soil Surface (°C/°F)	Cloud Cover (percent)	Wind Speed (miles per hour)
1015	19.3/67	0	0 to 1
1210	24.4/76	0	0 to 1
1430	25.9/79	0	0 to 1

Table 2 Wildlife Observed During the Reconnaissance Survey of the Project Site

Birds		
Northern mockingbird (*Mimus polyglottos*)	Mourning dove (*Zenaida macroura*)	American raven (*Corvus corax*)
White-crowned sparrow (*Zonotrichia leucophrys*)	Black headed phoebe (*Sayornis nigricans*)	Ash-throated fly catcher (*Myiarchus cinerascens*)
California scrub jay (*Aphelocoma californica*)		
Mammals		
California ground squirrel (*Otospermophilus beecheyi*)	Black-tailed jackrabbit (*Lepus californicus*)	Cottontail rabbit (*Sylvilagus audubonii*)
Reptiles		
Common night lizard (*Xantusia vigilis*)		
Insects		
Harvester ants (*Pogonomyrmex californicum*)		

Since the October 8, 2020 survey, the site was observed to be more disturbed by off road use and trash disposal. One Joshua tree (*Yucca brevifolia*) was observed to have been knocked over, likely due to being hit by a vehicle, as evidenced by tire tracks and car bumper debris near the felled tree. Two individual common night lizards were observed beneath trash in two separate locations within the site. No other

lizards or reptiles were observed. Numerous California harvester ant colonies are present at the site and ants were observed to be actively foraging at the time of the survey. These ants are prey for horned lizards such as the coast horned lizard. No coast horned lizards or sign of coast horned lizard in the form of scat were observed in proximity to any of the ant colonies on site. No legless lizards were observed beneath overturned trash. No fallen Joshua tree wood or associated debris was disturbed as part of the survey because an Incidental Take permit for this California Candidate Endangered species has not been issued for the project.

Discussion

No sensitive reptiles were observed during the survey, including the northern California legless lizard and coast horned lizard. Two individual common night lizards were observed at the site. To ensure that these lizards were the common type, a search of the CNDDB was conducted for night lizards and research was conducted to verify which one was observed.

There are three sensitive night lizards identified in the CNDDB as California Species of Special Concern (California Department of Fish and Wildlife 2021), none of which are found near the project site. A brief description from the CNDDB of localities for these lizards is as follows:

- The Sierra night lizard (*X. vigilis sierrae*) is found only on the western edge of the Greenhorn Mountains in Kern County, within the Sequoia National Forest.
- The island night lizard (*X. riversiana*) is found only on the Santa Barbara, San Clemente and San Nicolas Channel Islands.
- The sandstone night lizard (*X. gracilis*) is known only from the Truckhaven rocks in the eastern part of Anza-Borrego State Park located in Imperial/San Diego Counties.

A photograph of one of the two common night lizards was used to identify it using Stebbins (1985). Given that the site is not in an area where sensitive night lizards have been observed and using the visual observation to confirm that the lizards observed at the site were the common night lizard, it was determined that no sensitive night lizards occur on this site. These common reptiles are abundant lizards that spend much of their life underground beneath fallen vegetation and debris (Stebbins 1985, California Herps 2021). Common night lizards are not listed under the California or federal ESA and are not a sensitive species as identified by the CDFW. No legless lizards were observed beneath trash that was turned over. No horned lizards or sign of horned lizards were observed in proximity to any of the California harvester ant colonies present at the site.

Conclusions and Recommendations

No sensitive lizards were observed during the December 2021 survey, including the northern California legless lizard and coast horned lizard. Two common night lizards were observed at the site. The site was noted as having possibly a higher degree of disturbance than was observed in October 2020 due to continued human activity and on-going disturbance at the site. This included an observation that one Joshua tree was knocked over recently, likely by a vehicle, as evidenced by tire tracks and car bumper debris near the felled tree. Based on observations made during the focused survey for reptiles conducted at the site, it was determined that no suitable habitat is present for legless lizards or coast horned lizards and that no further mitigation is required.

References

California Department of Fish and Wildlife
2021 Rarefind 5. Natural Heritage Division. Natural Diversity Database accessed 11/5/2021 and 12/09/21

California Herps
2021 Desert Night Lizard (*Xantusia vigilis*) http://www.californiaherps.com/lizards/pages/x.vigilis.html. Accessed December 3, 2021

Stebbins, R.C.
1985 A Field Guide to Western Reptiles and Amphibians. 2nd Edition, Houghton Mifflin, Boston, MA

Please do not hesitate to contact me at (909) 382-5112 if you have any questions.

Sincerely,

TETRA TECH

Stephanie Pacheco
Project Manager

Tetra Tech, Inc.
301 E. Vanderbilt Way, Suite 450, San Bernardino, CA 92408-3562
Tel 909.381.1674 Fax 909.889.1391 www.tetratech.com

APPENDIX A PHOTOGRAPHS

Appendix A
Lizard Survey Site Photographs
AVTA Solar Project
Lancaster, CA

Photograph 1: **View of the site from the northern boundary. View to the southeast**	

Photograph 2: **View of the site from the southern boundary. View to the northeast.**	

Appendix A
Lizard Survey Site Photographs
AVTA Solar Project
Lancaster, CA

Photograph 3: **View of the knocked down Joshua tree number 652. View to the southeast.**	

Photograph 4: **Active harvester ant colony at the site.**	

Appendix A
Lizard Survey Site Photographs
AVTA Solar Project
Lancaster, CA

Photograph 5: **Photograph of one of the common night lizards observed at the site.**	

APPENDIX F: DRAFT NESTING BIRD/BURROWING OWL AVOIDANCE PLAN

Sensitive Biological Resources Avoidance Plan
Antelope Valley Transit Authority Solar Project
Lancaster, Los Angeles County, California

Prepared for:

Antelope Valley Transit Authority

TETRA TECH

301 E. Vanderbilt Way, Suite 450
San Bernardino, California 92408

TC# 102-ENV-T40784
December 2021

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FIGURES

SECTION 1 INTRODUCTION

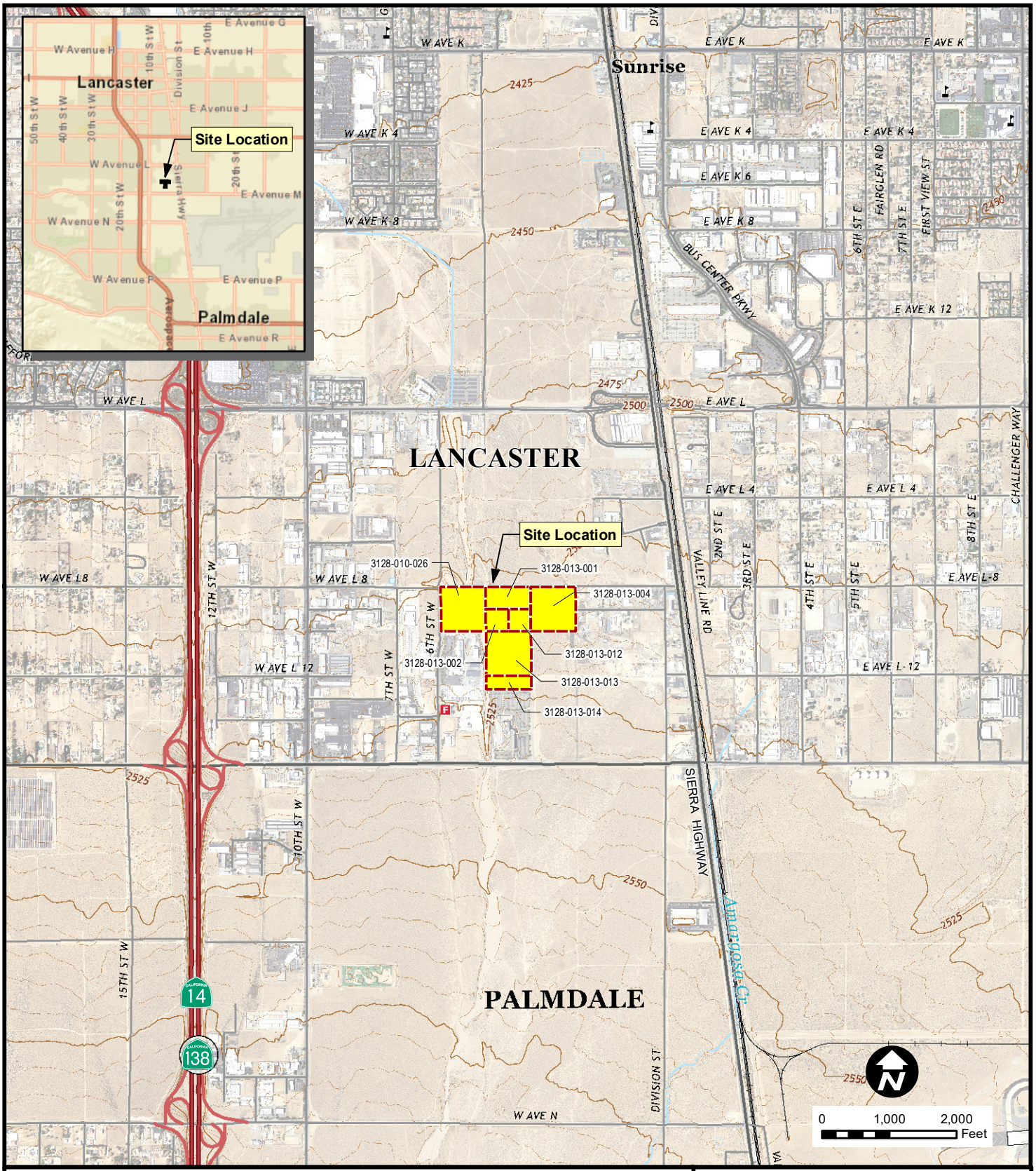
The Antelope Valley Transit Authority (AVTA) proposes to develop an approximately 43-acre parcel (site) as a site for a solar facility that would generate power for an e-vehicle recharging stations (Figure 1). The site is located on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster, adjacent to AVTA offices (Figure 1). The site is located on the Lancaster West USGS 7.5-minute quadrangles, Township 7N, Range 12W, Section 34 and is associated with the following Assessor Parcel Numbers.

- 3128-010-026
- 3128-013-001
- 3128-013-002
- 3128-013-012
- 3128-013-004
- 3128-013-013
- 3128-013-014

The site is located within the City of Lancaster that is in within the Mojave Desert. The Mojave Desert receives less than 10 inches of precipitation per year that typically occurs in the winter with occasional summer thunderstorms (Schoenherr 2017). The site is undeveloped disturbed desert habitat dominated by four-wing saltbush (*Atriplex canescens*), creosote (*Larrea tridentata*) and Anderson thornbush (*Lycium andersonii*) with scattered western Joshua trees (*Yucca brevifolia*) (WJT) found throughout the site. The site is highly disturbed due to off-road vehicle travel, evidence of past transient encampments and piles of trash and debris.

This Plan was prepared in response to comments provided by the California Department of Fish and Game on the Draft Initial Study/Mitigated Negative Declaration (State Clearinghouse Number 2021090068) prepared in compliance with the California Environmental Quality Act.

P:\GIS\AVTA_Aug_2021\Location.mxd



Parcel Boundary

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 1

Site Location Map

TETRA TECH

SECTION 2 PROJECT OVERVIEW

The proposed project consists of the construction, operation, and eventual decommissioning of a 5.72 megawatt (MW) direct current (DC)/4.38 MW alternating current (AC) PV solar energy project. The DC number refers to the peak capacity of all power generated by the solar panels, and the AC number refers to the official power production rating indicating the electricity transported on the utility grid and used in homes and businesses. A piece of equipment called an inverter converts the DC electrical power from the panels into AC power to be distributed on the grid for use in homes and businesses. For purposes of this document and to be consistent with how solar projects are typically characterized, the DC power generated by the panels is what is discussed here. The solar panels would be installed on a ground-mounted solar tracker system and would be Tier 1 monocrystalline solar modules manufactured by Trina Solar. Tier 1 refers to the length of time that the manufacturer has been in business and the reliability of the product. Monocrystalline solar panels are panels that are most efficient because the solar cells are cut from a single source of silicon. Associated infrastructure for the solar arrays (system of panels) would include tracker foundations and racking, power inverters, transformers, electrical enclosures, data metering and monitoring hardware, overhead cable runs, concrete equipment pads, interior and perimeter access pathways, and perimeter fencing.

The project would be constructed as three solar arrays, as shown on Figure 2. The first array, referred to as the northwest meter or north solar array, would be constructed on a 10-acre parcel northwest of the bus depot. Panels and associated internal roads and infrastructure inside a fenced area would cover approximately 5.5 acres of this parcel and would generate 992 kilowatts (kW) (0.992 MW) of power. A small area between the north solar array and the existing bus depot would be used for future bus parking (Figure 3).

The second array, identified as the east meter, would be constructed to the northeast of the bus depot on three parcels totaling approximately 20 acres and would consist of ground mount solar tracker system of 3,391.47 kilowatt (kW) as well as a battery energy storage system of 2,055 kW/8,220 kilowatt hour (kWh) installed on the existing AVTA property (Figure 4). Panels and associated infrastructure would cover approximately 17 acres of these parcels.

The third array, referred to as the west meter, would be constructed to the southeast of the bus depot on a 10-acre parcel (with small overlap onto parcels adjacent to the north) and consist of ground mount solar tracker system of 1,653.08 kW as well as a battery energy storage system of 1,370kW/5,480 kWh installed on the existing AVTA property (Figure 5). Panels and associated infrastructure would cover approximately 8.5 acres of this parcel.

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Fence

Project Setback

PV Trench

Future Bus Parking

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 2

Photovoltaic System Layout

TETRA TECH

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- Fence
- Project Setback
- PV Trench
- Future Bus Parking
- Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 3

Photovoltaic System Layout (Northwest Meter)

TETRA TECH

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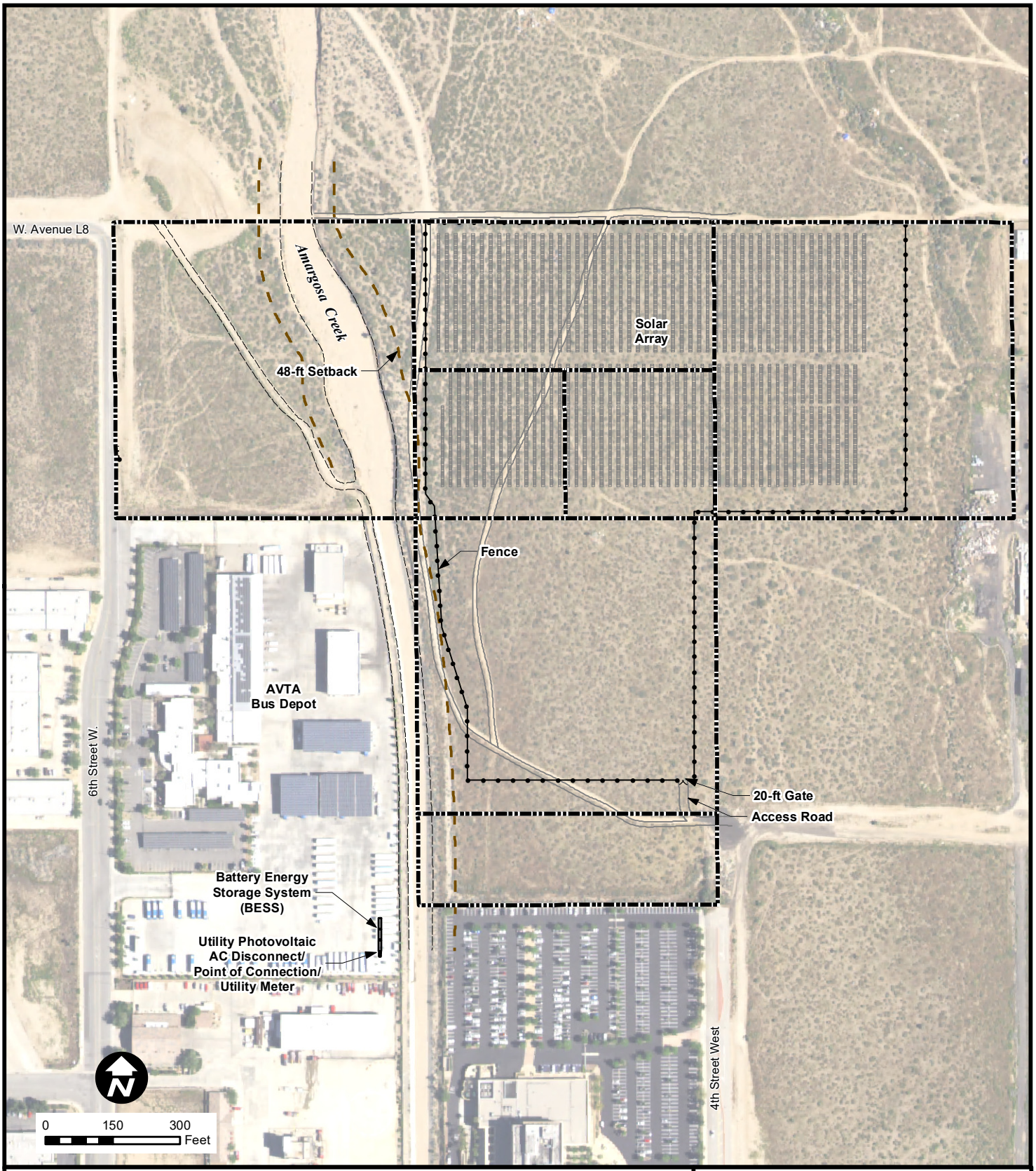

Fence

Project Setback

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 4

Photovoltaic System Layout (East Meter)

TETRA TECH

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Fence

Project Setback

Parcel Boundary

Adapted from:
REC Solar, December 14, 2021.

ANTELOPE VALLEY TRANSIT AUTHORITY

Figure 5

Photovoltaic System Layout (West Meter)

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SECTION 3 AVOIDANCE PLAN

A biological reconnaissance survey was conducted to determine if habitat present at the site has the potential to support sensitive biological resources. Prior to mobilizing to the field, the available literature on natural resources with reference to plants and animal species in and near the project area were consulted including information from the CDFW California Natural Diversity Data Base (CNDDB) and the California Native Plant Society (CNPS) in August 2020 and updated in November 2021 (California Department of Fish and Wildlife 2021), (California Native Plant Society 2021). Based on past observations recorded in the CNDDB search radius plus conditions of the site observed during the field survey, there is a moderate probability that habitat at the site can support burrowing owls (*Athene cunicularia*). The results of the survey documented the presence of western Joshua tree (*Yucca brevifolia*) scattered throughout the site. Western Joshua tree have been identified as a Candidate for listing as Endangered by the California Department of Fish and Game commission. Prior to development of the site, an Incidental Take Permit for ground disturbance that would impact western Joshua trees will be required. It was noted that the site is highly disturbed by unauthorized off-road vehicle use and dumping of household debris. Other than western Joshua tree, no other sensitive species were observed.

3.1 BURROWING OWL

During the reconnaissance level survey, no burrowing owl were observed. No sign or burrows suitable for occupation by burrowing owl were observed. To avoid impacts to burrowing owl, prior to ground disturbance, the following avoidance measures will be implemented.

The applicant shall retain a qualified biologist who shall conduct burrowing owl protocol surveys on the Project site and within 100 feet (minimum) of the Project site where there is suitable habitat in accordance with the procedures established by the California Department of Fish and Wildlife March 7, 2012, Staff Report on Burrowing Owl Mitigation prior to the City issuing construction permits. In California, the burrowing owl breeding season extends from 1 February to 31 August with some variances by geographic location and climatic conditions. Survey protocol for breeding season owl surveys states to conduct 4 survey visits: 1) at least one site visit between February 15 to April 15, and 2) a minimum of three survey visits, at least three weeks apart, between April 15 and July 15, with at least one visit after 15 June.

If burrowing owls are identified during the surveys, the applicant shall prepare an Impact Assessment in accordance with the 2012 Staff Report on Burrowing Owl Mitigation. Then, the applicant shall develop a Burrowing Owl Mitigation Plan in accordance with the 2012 Staff Report on Burrowing Owl Mitigation. The applicant shall contact the California Department of Fish and Wildlife (CDFW) to develop appropriate mitigation/management procedures. The applicant shall submit a final Burrowing Owl Mitigation Plan to the City prior to the City issuing construction permits. The applicant shall implement all measures identified in the Burrowing Owl Mitigation Plan.

At a minimum, the following shall occur:

- If burrowing owls are identified during the non-nesting season, a qualified biologist shall install one-way gates to relocate the owl to a suitable nearby property. Upon confirmation that the burrow is empty, the burrow shall be collapsed.
- In the event that a breeding pair or female owl with offspring are present at the burrow, a buffer zone of at least 50 feet shall be established around the burrow until the offspring have fledged and left the burrow. No work shall occur within the buffer zone. The specific buffer zone shall be established in coordination with CDFW.

3.2 NESTING BIRDS

During the pre-construction survey, evidence of past nesting activity was observed. As a results, to avoid impacts to nesting birds, pre-construction surveys will be conducted if ground disturbance would be conducted during the breeding season (January 1 through July 31 for raptors; March 1 through September 15 for passerine (song) birds). A CDFW-approved biologist will survey the entirety of the project site and, where feasible, within a recommended 500-foot buffer surrounding the project site, for nesting birds. The survey will be conducted no more than three days prior to commencing project activities (including construction and/or site preparation). If construction in a given area ceases for five or more consecutive days during the nesting season, repeat preconstruction surveys may be required to verify that new nesting locations have not been established.

If breeding birds are detected within the project site, a protective buffer (at least 300 feet for passerines and at least 500 feet for raptors) will be provided until it is confirmed that breeding is complete (i.e., until young have fledged/can fly from the nest). An approved biologist will communicate the importance of staying outside of the buffer with the contractor and construction crew during worker awareness training.

The approved biologist will monitor the nest and buffer to ensure that no project activities occur within the established buffer. The approved biologist will also monitor the nest to ensure that project activities outside the buffer, such as construction noise or presence of construction personnel and equipment, are not altering the behavior of nesting birds. In addition, the approved biologist will track the status of the nest at least weekly to determine when the young have fledged, and the buffer can be removed and documented as part of the project administrative record.

3.3 WORKER EDUCATION PROGRAM

A Worker Education program training burrowing owls and nesting birds for the project will be established by a qualified biologist and provided to all construction workers at the site. The training will consist of a presentation that includes a discussion of the biology of the habitats and burrowing owl/nesting birds that may be present at the site. The education program will include information about the distribution and habitat needs of the special status species that may be present, legal protections for those species, penalties for violations, and mitigation measures. Education should include but not be limited to burrowing owl and nesting birds. The training will be provided in English and Spanish as needed.

APPENDIX C CULTURAL RESOURCES INVENTORY AND EVALUATION REPORT

CULTURAL RESOURCES INVENTORY AND EVALUATION REPORT

ANTELOPE VALLEY TRANSIT AUTHORITY

PROPERTY ACQUISITION PROJECT CITY OF LANCASTER, LOS ANGELES COUNTY, CALIFORNIA

Prepared for: **Tetra Tech, Inc.**
Stephanie Pacheco, Soil Scientist
301 E. Vanderbilt Way, Suite 450
San Bernardino, CA 92408

Prepared by: **Paleo Solutions, Inc.**
911 S. Primrose Ave., Unit N
Monrovia, CA 91016

Evelyn Chandler, M.A. – Principal Investigator
Liz Denniston, M.A., RPA. – Report Author

January 2021

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Appendices

1.0 EXECUTIVE SUMMARY

This report presents the results of the cultural resources inventory and evaluation conducted by Paleo Solutions, Inc. (Paleo Solutions) in support of the Antelope Valley Transit Authority (AVTA) Property Acquisition Project (Project) located in Lancaster, Los Angeles County, California (Figures 1 and 2). Paleo Solutions was contracted by Tetra Tech, Inc. (Tetra Tech) to assess potential effects to cultural resources from the proposed acquisition of the parcel. All work was completed in compliance with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (NHPA), the California Environmental Quality Act (CEQA), and local regulations.

The Project proposes the acquisition of an approximately 43-acre parcel in the City of Lancaster, Los Angeles County, California. The Project area is situated on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster. Following acquisition of the parcel by the AVTA, a photovoltaic solar facility will be constructed on the parcel.

The cultural resources inventory and evaluation for the Project included a records search, archival research, field survey, evaluation of resources for eligibility to the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR), and a buried site sensitivity analysis. The record search results indicate that there are no previously-recorded resources within the Project APE. During the field survey, five archaeological sites (R201009-88-01, -02, -05, -06, and -09) were identified within the Project APE. All five resources consist of historic-age refuse scatters. An isolated prehistoric flake was also observed within Site R201009-88-01. No other prehistoric materials and no historic-age elements of the built environment were observed within the Project APE.

As a result of the resource evaluations, none of the five resources within the APE are recommended as eligible for the NRHP or CRHR. Therefore, there will be no effect to known historic properties (i.e., resources listed or eligible for inclusion in the NRHP) under Section 106 of the NHPA, and there will be no impact to known historical resources (i.e., resources listed or eligible for inclusion in the CRHR) under CEQA. The buried site sensitivity analysis indicates that there is a low potential for buried prehistoric or historic-age archaeological resources.

If buried archaeological resources are encountered during ground-disturbing construction activities, all work within 100 feet of the find shall be halted or redirected away from the find. A temporary exclusion zone shall be established around the find until the resource can be documented and evaluated by a qualified archaeologist who meets the U.S. Secretary of Interior's professional standards for an Archaeological Principal Investigator. If the find is determined to be eligible for inclusion in the NRHP and/or CRHR, appropriate treatment measures shall be developed and implemented in consultation with the AVTA and the FTA, and in consultation with any consulting tribes if the find is a prehistoric or Native American resource. This may include preparation and implementation of a Data Recovery or Historic Property Treatment Plan.

The discovery of human remains is always a possibility during ground disturbing activities. If any human remains are discovered during construction of the solar facility, the procedures and protocols set forth in CEQA Guidelines §15064.5(e)(1); Health and Safety Code §7050.5, subdivision (c); and Public Resources Code §5097.98 (as amended by AB 2641) shall be followed.

2.0 INTRODUCTION

This Cultural Resources Inventory and Evaluation Report identifies and assesses cultural resources for eligibility for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) for the Antelope Valley Transit Authority (AVTA) Property Acquisition Project (Project). The objectives of this analysis are to describe the regulatory setting, define the area of potential effects (APE), and identify cultural resources that could be affected by the proposed Project.

The Project is subject to state and federal environmental review requirements because it involves the use of federal funds from the Federal Transit Administration (FTA). The FTA will serve as the lead NEPA agency and the City of Lancaster (City) will serve as the CEQA lead agency.

This report was prepared by Paleo Solutions' Principal Investigator, Liz Denniston, M.A. and Cultural Resources Program Director, Evelyn Chandler, M.A. Ms. Denniston is an archaeologist with 23 years of experience in cultural resources management. She holds a Master's degree in Anthropology and is a Registered Professional Archaeologist. Ms. Chandler holds a Master's degree in Archaeology and Heritage and has 28 years of professional experience in cultural resources management. Both Ms. Chandler and Ms. Denniston exceed the Secretary of Interior's (SOI) Professional Qualification Standards for Archaeology.

2.1 Project Description and Location

The Project proposes the acquisition of approximately 43 acres in the City of Lancaster, Los Angeles County, California (Figure 1). Following acquisition of the parcel by the AVTA, a photovoltaic solar facility will be constructed on the parcel. The solar facility will consist of tracker foundations and racking, power inverters, a transformer, electrical enclosures, data metering and monitoring hardware, overhead cable runs, concrete equipment pads, and perimeter fencing. Construction activities will include excavators and water trucks to prepare the laydown area, grade the Project area, and install drainage and access ways; installation of fencing; construction of piers for the tracker motors and racking; installation of the PV modules, conduits, and wiring; excavation for and pouring of the concrete equipment pads; installation of the combiners, junction boxes, gutters, inverters, switches, transformer, and monitoring system. The maximum depth of construction activities is 10 feet below ground surface.

The Project area is comprised of seven parcels (Accessor Parcel Numbers 3128010026, 3128013001, 3128013002, 3128013004, 3128013012, 3128013013, and 3128013014) and is situated on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster. The Project is located east of State Route 14 (SR-14) and west of Sierra Highway. Specifically, the Project is within the center of Section 34, Township 7 North, Range 12 West on the San Bernardino Meridian, as depicted on the *Lancaster West*, California 7.5' U.S. Geological Survey topographic quadrangle (Figure 2). The Antelope Valley Courthouse is adjacent to the Project area to the south. There is undeveloped land to the north, and residential and commercial development and vacant parcels to the west and east. A drainage bisects the property from north to south in the western corner of the Project (Figure 3).

2.2 Area of Potential Effects (APE)

The APE map was prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA) (36 CFR § 800.4(a)(1)). The Project APE includes a direct and indirect APE, which share the same extent (Figure 4). The direct APE is defined as the area of direct impacts that could occur as a result of Project implementation. The indirect APE typically includes the direct APE plus any properties that may be subject to indirect impacts (i.e., impacts from noise, vibration, or changes to setting). Potential indirect impact areas are established as the legal parcels adjacent to where potential direct impacts would occur. If any part of a parcel would be temporarily or permanently impacted, then the whole parcel would be included as part of the indirect APE footprint. Because the project area is surrounded by vacant land and modern commercial development, indirect impacts are not expected to cultural resources outside the Project area. Therefore, the direct and indirect APE are the same (see Figure 4).

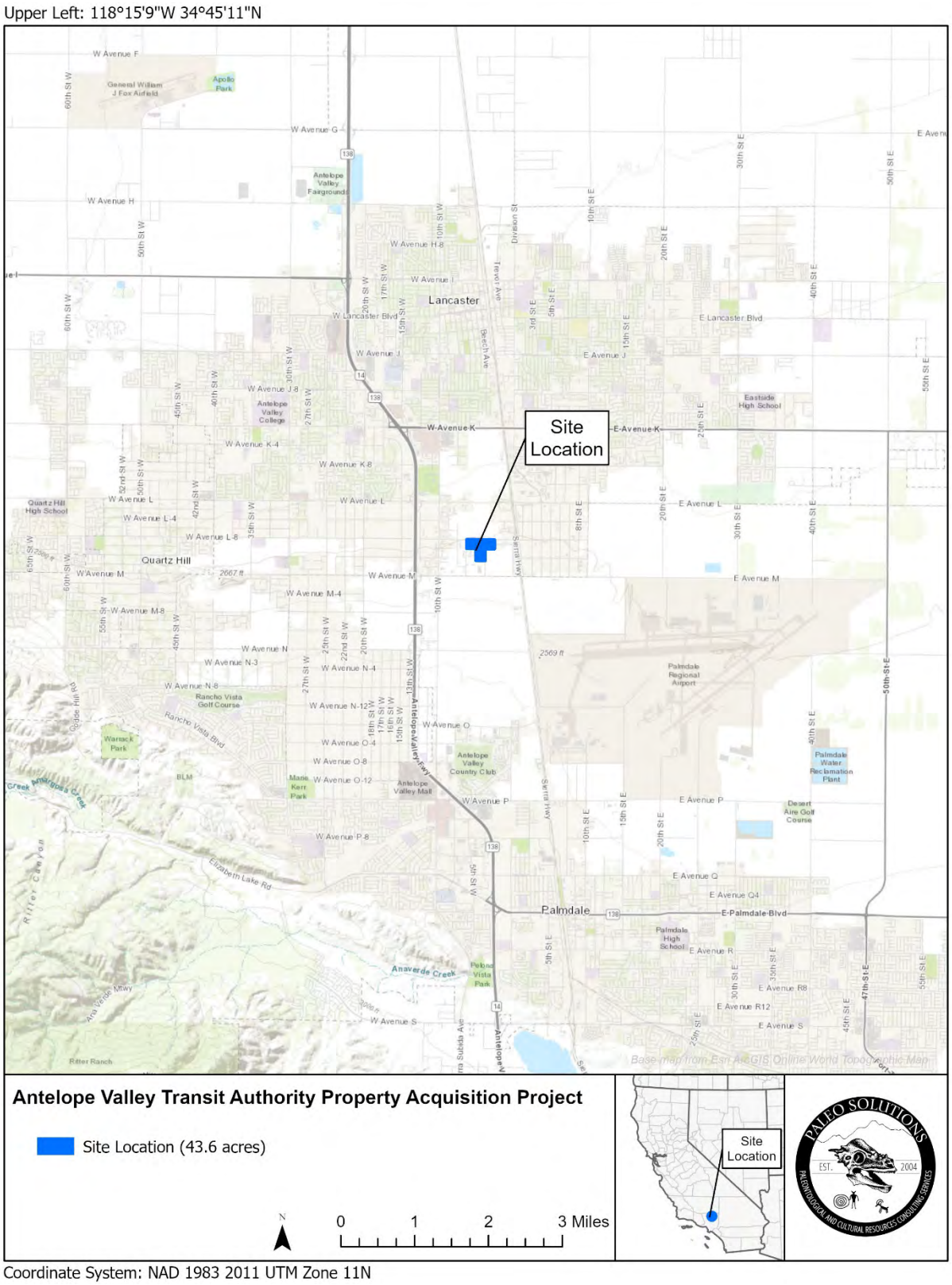

Figure 1. Project Vicinity Map.

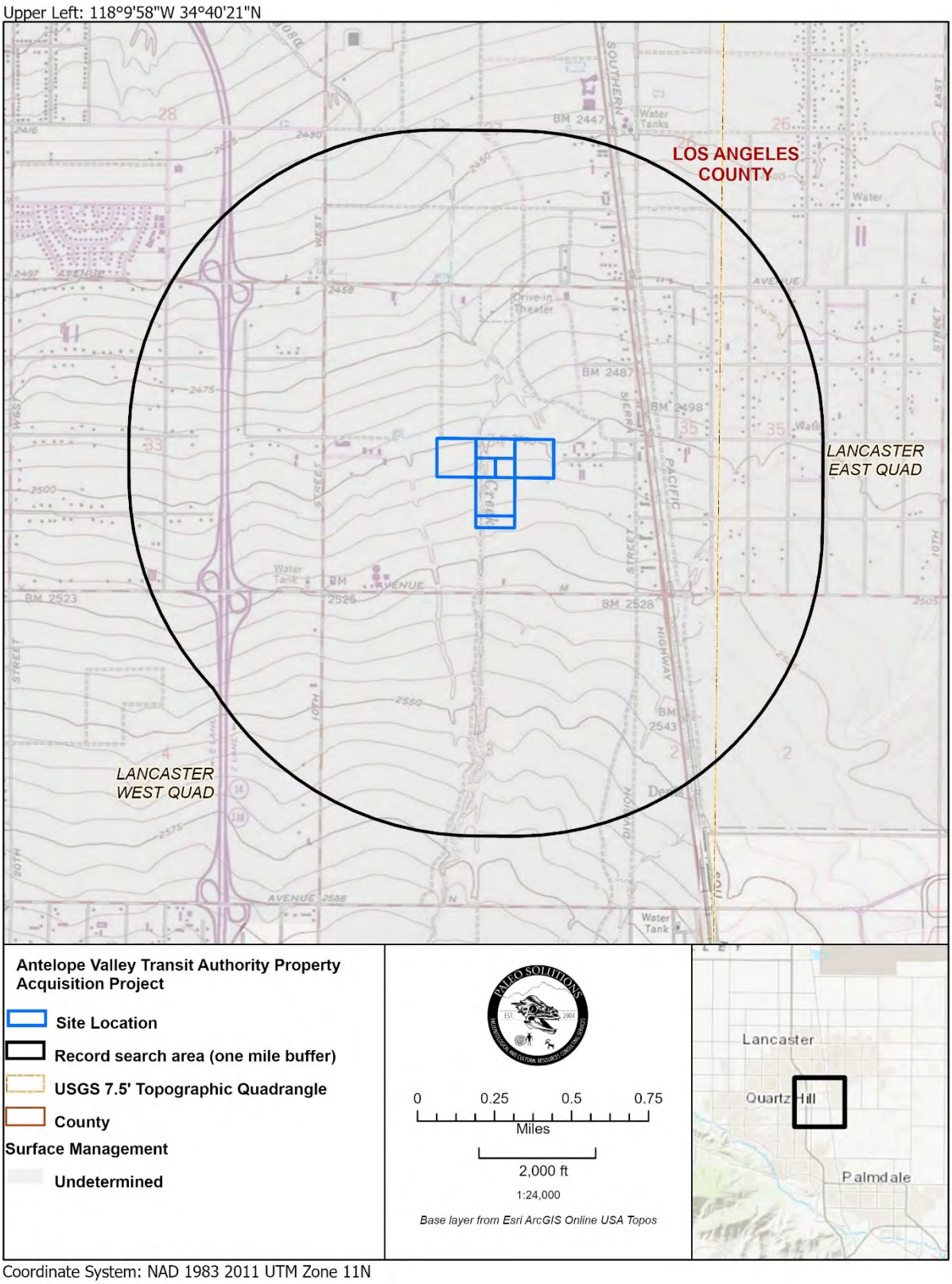

Figure 2. Project Location Map.

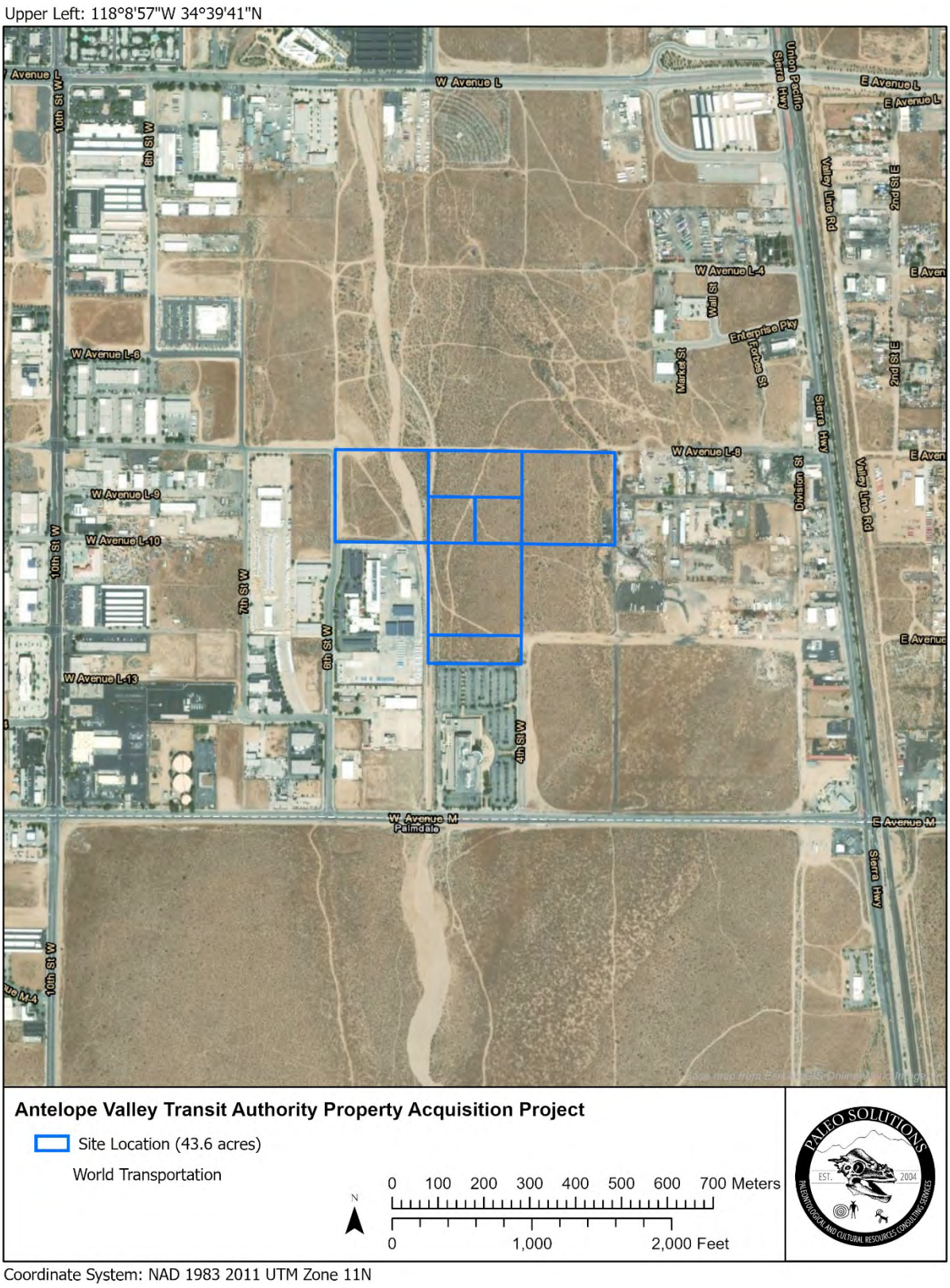

Figure 3. Project Overview Map.

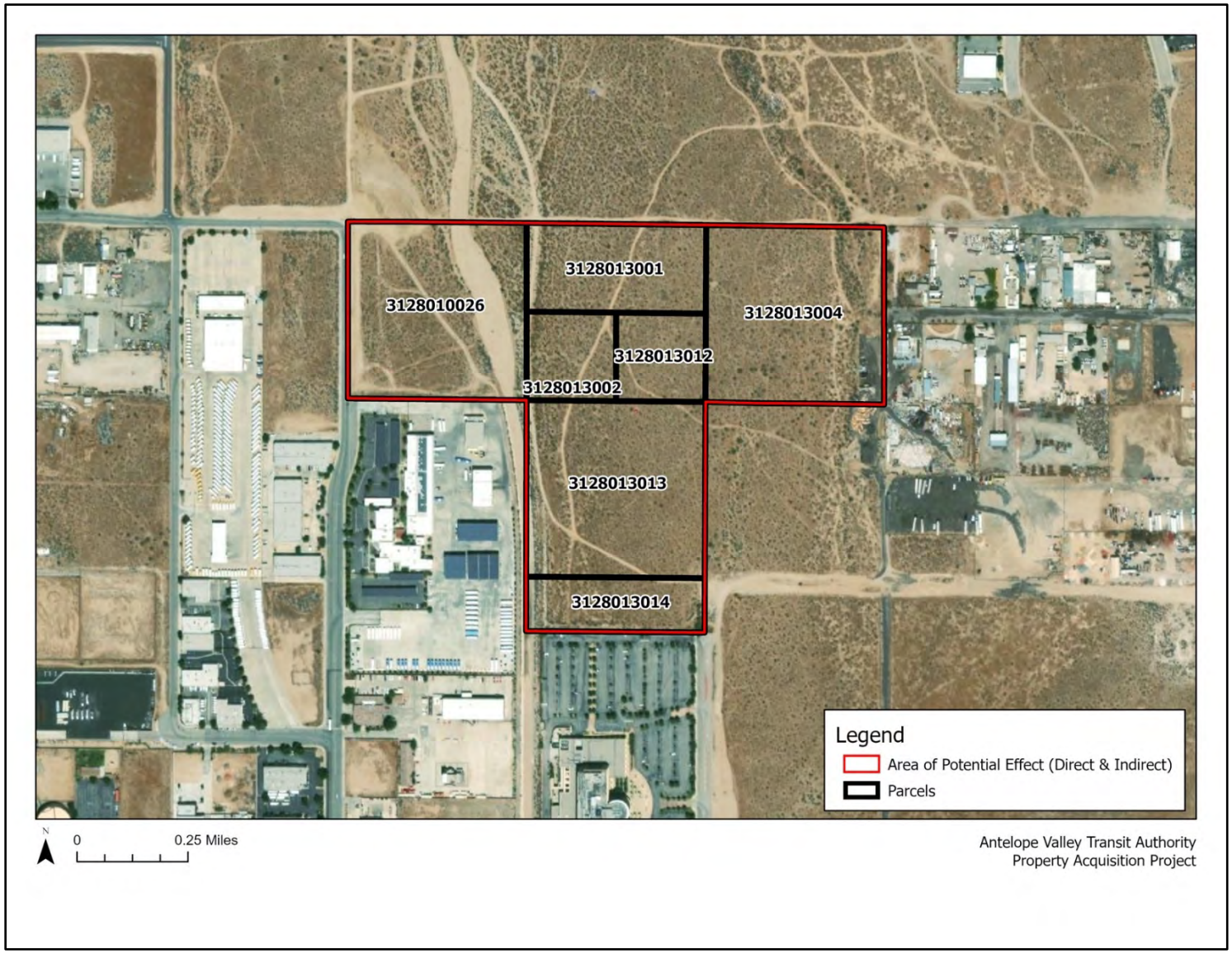

Figure 4. Project APE Map.

3.0 REGULATORY FRAMEWORK

Key cultural resources regulations that are most relevant to the Project are summarized below.

3.1 Federal

3.1.1 National Environmental Policy Act

NEPA, signed into law in 1970, requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. Using the NEPA process, agencies evaluate the environmental and related social and economic effects of their proposed actions. Agencies also provide opportunities for public and stakeholder review and comment on those evaluations.

3.1.2 Section 106 of the National Historic Preservation Act

Section 106 of the NHPA of 1966 requires federal agencies to take into account the effects of their actions on historic properties. Section 106 applies to any federal undertaking, defined as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including (1) those carried out by or on behalf of a federal agency; (2) those carried out with federal financial assistance; and (3) those requiring a federal permit, license, or approval.

The Section 106 process contains four basic steps: (1) initiating consultation, which includes inviting consulting parties to participate in the process, as well as the determination of the proposed federal action as an undertaking. This step also includes identification of the project APE; (2) identifying any historic properties within the project's APE that are listed in or eligible for the NRHP; (3) determining whether the project will have an adverse effect on any historic properties; and (4) resolving any adverse effects on those resources through execution of a Memorandum of Agreement.

The Section 106 regulations require federal agencies to make NRHP eligibility determinations and effects findings in consultation with the SHPO.

A historic property, defined as any "prehistoric or historic district, site, building, structure, or object" included in, or eligible for inclusion in the NRHP" [U.S. Department of Interior, National Park Service National Register Criteria for Evaluation] must meet at least one of four significance criteria and must retain sufficient integrity in terms of its location, design, setting, materials, workmanship, feeling, and association. The significance criteria are:

A. Is associated with events that have made a significant contribution to the broad patterns of our history (Criterion A); or

B. Is associated with the lives of significant persons in our past (Criterion B); or

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

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

3.1.3 Section 4(f) of the Department of Transportation Act [49 U.S.C. Section 303 Section 4(f)]

Section 4(f) of the Department of Transportation (DOT) Act of 1966 requires the consideration of public park and recreational lands, wildlife and waterfowl refuges, and any public or privately owned historic sites listed in or eligible for listing in the NRHP, for transportation project development. Before approving a project that uses a Section 4(f) property, FTA must either (1) determine that the impacts are de minimis, or (2) undertake a Section 4(f) evaluation. If the Section 4(f) evaluation identifies a feasible and prudent alternative that completely avoids Section 4(f) properties, it must be selected. If there is no feasible and prudent alternative that avoids all Section 4(f) properties, the alternative that causes the least overall harm shall be selected. FTA must also find that all possible planning to minimize harm to the Section 4(f) property has occurred.

3.2 State

3.2.1 California Environmental Quality Act and Guidelines

CEQA is used to provide decision makers with information about the environmental impacts of a proposed project and allows the public an opportunity to comment on the impacts that may affect their community.

CEQA uses the term "historical resources" to include buildings, sites, structures, objects, or districts, each of which may have historical, pre-historical, architectural, archaeological, cultural, or scientific importance. Historical resources, as defined in Section 15064.5 of the CEQA Guidelines, are properties that are listed in or eligible for listing in the CRHR and are considered part of the environment. CEQA requires State and local public agencies to identify the environmental impacts of proposed projects and to determine if the impacts will be significant, and identify alternatives and mitigation measures that will reduce or eliminate impacts. CEQA states that if implementation of a project would result in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (14 *California Code of Regulations* [CCR] 15064.5, 15126.4). Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined. There are three ways that a cultural resource may qualify as a historical resource:

- The resource is listed in or determined eligible for listing in the CRHR.
- The resource is included in a local register of historical resources, or identified as significant in a historical resource survey meeting the requirements of Section 5024.1[g] of the Public Resources Code (PRC), unless the evidence demonstrates that it is not historically or culturally significant.
- The Lead Agency determines the resource to be significant, as supported by substantial evidence in light of the whole record.

Each of these ways of qualifying as a historical resource for the purpose of CEQA is related to the eligibility criteria for inclusion in the CRHR. A historical resource may be eligible for inclusion in the CRHR if it meets any of the following conditions:

- The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- The resource is associated with the lives of persons important in our past.

- The resource 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.

- The resource has yielded, or may be likely to yield, information important in prehistory or history.

Properties that are listed in or eligible for listing in the NRHP are automatically considered eligible for listing in the CRHR and thus are significant historical resources for the purpose of CEQA.

According to CEQA, a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant impact on the environment. Under CEQA, a substantial adverse change in the significance of a resource means the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired. Actions that would materially impair the significance of a historic resource are any actions that would demolish or adversely alter the physical characteristics that convey the property's historical significance and qualify it for inclusion in the CRHR or in a local register or survey.

4.0 SOURCES CONSULTED

4.1 Records Search Methods and Results

Research for the Project included a literature and records search at the South Central Coastal Information Center (SCCIC) California Historical Resources Inventory System (CHRIS) center located at California State University, Fullerton for a 0.5-mile radius around the APE on September 18, 2020. In addition to the SCCIC records search, other sources were consulted to obtain information regarding the cultural context of the APE, including searches of the NRHP, CRHR, California Historical Landmarks (CHL), California Points of Historical Interest, and the City of Lancaster Local Historic District and Heritage Conservation District.

Archival research was conducted to ascertain the history of land use of the Project area and to determine the association of cultural resources recorded within the Project APE. The following sources were reviewed:

- General Land Office Records: 1890 to 1900
- Historical Newspapers: 1890s to 1950s
- 1915 and 1917 Elizabeth Lake, California U.S.G.S. quadrangle map, 1:125000 scale
- 1930, 1933, and 1958 Lancaster, California U.S.G.S. quadrangle map, 1:62500 scale
- 1974 Lancaster West, California U.S.G.S. quadrangle map, 1:24000 scale
- Aerial imagery from 2003 to present

4.1.1 Previous Investigations

The records search covered a 0.5-mile radius around the APE boundary. The results identified 49 previous investigations within a 0.5-mile radius of the APE between 1988 and 2016. Of these, three were completed within the APE, and 46 are within a 0.5-mile radius of the APE (Table 1).

Table 1: Cultural Reports within 0.5 Mile of the Project APE

Report No.	Year	Author	Report Title	Distance from APE
LA-00116	**1988**	**Love, Bruce**	**Archaeology Report for Amargosa Drainage North of Avenue M in the City of Lancaster, California**	**Within**
LA-00162	1988	Love, Bruce	Archaeology Report for Avenue M Right-of-way and Amargosa Culvert Project	Outside
LA-01713	1988	Romani, Gwendolyn R. and Roberta S. Greenwood	Cultural Resource Investigation Spears Manufacturing and Distribution Center, City of Lancaster	Outside
LA-01717	1988	Blodgett, Leslie M.	Report of Archival Search and Field Inspection of Approximately 4.5 Linear Miles and Proposed Detention Basin Along Amargosa Creek in Palmdale, California	Outside
LA-01760	1988	Romani, Gwendolyn R. and Roberta S. Greenwood	Cultural Resources Investigation: Bif-Korea Manufacturing and Distribution Center, City of Lancaster	Outside

Report No.	Year	Author	Report Title	Distance from APE
LA-01831	1989	Norwood, Richard H.	Cultural Resource Survey for Antelope Valley Business Park, 50 Acre Parcel, Palmdale, California	Outside
LA-01833	1989	Romani, Gwendolyn R.	Cultural Resource Investigation: Hasibi Auto Dealership, City of Lancaster	Outside
LA-01948	1989	Norwood, Richard H.	Cultural Resource/archaeological Report: Cultural Resource Survey for 10th Street West Office Plaza (gfba Project No. 892240) Palmdale, California	Outside
LA-01957	1990	Love, Bruce	Cultural Resources Investigation for Lancaster Business Park, Lancaster, California	Outside
LA-02102	1989	Love, Bruce	Cultural Resource Assessment Tt 44769, A.V. Business Park.10th West and Avenue M, Palmdale, Los Angeles County	Outside
LA-02137	1990	Norwood, Richard H.	Cultural Resource Survey for Tract No. 47885; 18.01 Acres in Palmdale, California	Outside
LA-02323	1990	Robinson, R. W.	A Cultural Resources Investigation of a Portion of the Amargosa Drainage System Within the City of Palmdale, Los Angeles County, California	Outside
LA-02376	1991	Norwood, Richard H.	Phase I Cultural Resource Investigation for Avenue L. Grade Separation Lancaster, California. Separation Lancaster, California.	Outside
LA-02476	1991	Drover, Christopher E.	Environmental Impact Evaluation: an Archaeological Assessment of the Industry Trade Center Specific Plan, Palmdale, California	Outside
LA-02494	1991	Wade, Sue	Draft Environmental Impact Report for Antelope Valley Business Park EIR 90-3	Outside
LA-02512	1991	Norwood, Richard H.	Phase II Cultural Resource Evaluation for Historic Site LAN-1990 H the Winchester-Graham Property Lancaster, California	Outside
LA-02593	1992	Norwood, Richard H.	Phase I Cultural Resource Investigation for Amargosa Creek Channelization Project, Avenue L to Avenue K-8 and 10th Street East, Lancaster, Los Angeles County California	Outside
LA-02619	1992	Norwood, Richard H.	Phase I Cultural Resource Investigation for the 8th Street West Drainage Channel, Lancaster, Los Angeles County California	Outside
LA-02634	**1992**	**Becker, Kenneth M.**	**Cultural Resources Reconnaissance of Antelope Valley Courts Facility, City of Lancaster, Los Angeles County, California**	**Within**
LA-02779	1993	Norwood, Richard H.	Phase I Cultural Resource Investigation for Vesting Tentative Map, Tract 51078 Lancaster, Los Angeles County, California	Outside
LA-02837	1993	McKenna, Jeanette A.	Archaeological, Historical and Paleontological Investigations of the Proposed Business Park Center Specific Plan Project Area, City of Palmdale, County of Los Angeles, California	Outside

Report No.	Year	Author	Report Title	Distance from APE
LA-03017	1994	Gibson, Robert O.	Results of Archaeological Records Check for the Mojave Alternatives of the Pacific Pipeline Project, Los Angeles County, California	Outside
LA-03621		McKenna, Jeanette A.	Cultural Resources Investigation for the Proposed Avenue L Overcrossing: Archaeological Records Check and Literature Review	Outside
LA-03784	1992	Norwood, Richard H.	Phase I Cultural Resource Investigation for Amargosa Creek Channelization Project, Avenue L to Avenue K-8 and 10th Street West, Lancaster, Los Angeles County California	Outside
LA-04008	1996	Unknown	Cultural Resources Investigation Pacific Pipeline Emidio Route	Outside
LA-04392	1998	King, Chester	Archaeological Reconnaissance for the 10th Street West Transmission Main Lancaster, Los Angeles County, California.	Outside
LA-04393	1998	Singer, Clay A.	Cultural Resources Survey and Impact Assessment for a Commercial Property at the Intersection of Avenue M and Sierra Highway in the City of Lancaster, Los Angeles County, California.	Outside
LA-05316	2000	Love, Bruce	Identification and Evaluation of Historic Properties Antelope Valley Transit Authority Transportation Facility: City of Lancaster Los Angeles County, California	Outside
LA-06070	2001	Sylvia, Barbara	Highway Project to Install a Double Three Beam Barrier in the Median of State Route 14 From the Avenue L Overcrossing to the Avenue I Undercrossing	Outside
LA-07967	2006	Hudlow, Scott M.	A Phase I Cultural Resource Survey for Property on Avenue M, APN 3128-013-015 and -016, City of Palmdale, California	Outside
LA-07991	**2006**	**Tang, Bai "Tom", Michael Hogan, and Josh Smallwood**	**Cultural Resources Technical Report, City of Lancaster General Plan Update**	**Within**
LA-08043	2005	Hudlow, Scott M.	A Phase I Cultural Resource Survey for Property on Avenue M, APN 3128-020-003, City of Palmdale, California	Outside
LA-08323	2005	Richards, Michael D.	A Phase I Cultural Resource Assessment of a 4 Acre Parcel in the City of Lancaster, Los Angeles County, California	Outside
LA-08325	2006	Wlodarski, Robert J.	Record Search and Field Reconnaissance Phase for Bechtel Corporation Wireless Telecommunication Site Lsancad071 (highway 14 and Avenue N), Located at 41343 12th Street West, City of Palmdale, County of Los Angeles, California 93551	Outside

Report No.	Year	Author	Report Title	Distance from APE
LA-08427	2007	Cooley, Theodore G.	Archaeological Survey Report for Southern California Edison Company 66kv Antelope Bus Split Project, Los Angeles County, California	Outside
LA-08437	2004	McKenna, Jeanette A.	A Phase I Cultural Resources Investigation of Assessor Parcel Number 3128-009-065 in the City of Lancaster, Los Angeles County, California	Outside
LA-09654	2009	Schmidt, James J.	WO 6036-4800; 9-4805: Lupine Distribution Line Deteriorated Pole Replacement Project, Los Angeles County, California.	Outside
LA-09679	2008	Loftus, Shannon L. and Robin D. Turner	Cultural Resource And Paleontological Assessment, North Los Angeles / Kern County, Regional Recycled Water Master Plan, Los Angeles / East Kern Counties, California.	Outside
LA-09995	2009	Schmidt, James	Archaeological Letter Report: Roosevelt, Forage, Sun Village, and Assembly 12kV Distribution Circuits Deteriorated Pole Replacement Project, Los Angeles County, CA	Outside
LA-10578	2009	Fortier, Jana	TEA21 Rural Roadside Inventory: Native American Consultation and Ethnographic Study Caltrans District 7, County of Los Angeles	Outside
LA-10596	2010	Orfila, Rebecca S.	A Phase I Cultural Resources Assessment of City of Lancaster - Rule 20A Project Area (1/O 310334) 10th Street West from Ave. K-8 to Ave L-10, Lancaster, Los Angeles County, California	Outside
LA-10642	2010	Tang, Bai "Tom"	Preliminary Historical/Archaeological Resources Study, Antelope Valley line Positive Train Control (PTC) Project Southern California Regional Rail Authority, Lancaster to Glendale, Los Angeles County, California	Outside
LA-10813	2011	Lajoie, Glenn and Starla Barker	Expansion Area Amendment to the Redevelopment Plans for the Merged Project Area	Outside
LA-11034	2009	Magness, Thomas	Final Environmental Assessment (FEA) North Valley Regional Water Infrastructure Section Recycled Water 1 (RW1) Pipeline Project, City of Lancaster, Los Angeles County, California	Outside
LA-11035	2010	Unknown	Continued Consultation Regarding the North Valley Regional Water Infrastructure Recycled Water 1 Pipeline (RW1) Project, Lancaster, Los Angeles County, California	Outside
LA-11453	2011	Orfila, Rebecca	Archaeological Survey for the Southern California Edison Company: Nineteen deteriorated power poles on the Petan 12kv, Forage 12kv, Hangar 12kv, Lupine 12kv Assembly 12kv, Force 12kv, Moonglow 12kv, and Hughes Lake 12kv circuits in Los Angeles County, CA	Outside
LA-12670	2014	Brunzell, Dave	Cultural Resources Assessment for the Emsierra Project, Lancaster, Los Angeles County, California (BCR Consulting Project No. TRF1415)	Outside

Report No.	Year	Author	Report Title	Distance from APE
LA-12745	2014	Wills, Carrie and Bonner, Diane	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate Emten (SCE Planning Office) 42060 10th Street West, Lancaster, Los Angeles County, California EBI Project No 611413378	Outside
LA-13069	2014	Bonner, Diane F. and Carrie D. Wills	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CLV6420 (Arrow Transit Mix), 507 East Avenue L-12, Lancaster, Los Angeles County, California. CASPR No. 3551699419	Outside

4.1.2 Previously Recorded Resources

Thirteen previously-recorded cultural resources were identified in the records search, none of which overlap the APE. Of the 13 previously-recorded resources within 0.5 mile of the APE, one is a prehistoric temporary camp exhibiting milling and lithic tools, one is a historic-age (i.e., 50 years old or older) architectural resource (Winchester-Graham Property), nine are historic-age archaeological resources, and two are isolated finds. Table 2 summarizes the resources that were identified during the records search.

Table 2: Previously Recorded Cultural Resources within 0.5 Mile of the APE

P-Number (P-19-)	Trinomial (CA-LAN-)	Description	Distance from APE	OHP Status Code	Eligible for NRHP?
001422	001422H	Two historic-age refuse deposits	Outside	7R	Not evaluated
001692	001692H	Historic-age concrete slab	Outside	7R	Not evaluated
001990	001990H	Historic-age Whidden Residence; Winchester-Graham Property	Outside	7R	Not evaluated
001999	001999	Prehistoric temporary encampment with milling and lithic material	Outside	7R	Not evaluated
002039	002039H	Historic-age homestead location	Outside	7R	Not evaluated
003709		Historic-age pump and concrete cylinder	Outside	7R	Not evaluated
004110	004110H	Historic-age wood and concrete structure footings	Outside	7R	Not evaluated
004790	004790H	Historic-age homestead location	Outside	7R	Not evaluated
004791	004791H	Historic-age refuse deposit	Outside	7R	Not evaluated
004793	004793H	Historic-age refuse deposit	Outside	7R	Not evaluated
004794	004794H	Historic-age refuse deposit	Outside	7R	Not evaluated
100802	N/A	Historic-age, isolated forged iron strapping	Outside	7R	No - Isolated find
100803	N/A	Historic-age, isolated vegetable can	Outside	7R	No - Isolated find

4.2 Field and Resource Evalaution Methods

4.2.1 Field Methods

An intensive-level pedestrian survey of the accessible areas of the Project APE was completed on October 9, 2020, by Paleo Solutions' archaeologists Antonio Cortez, B.A. and Rosemarie Pavel, M.A., RPA. All open ground areas were intensively surveyed using parallel 10-meter transects. The entire APE was examined for the presence of prehistoric and historic-age archaeological resources and historic-age elements of the built environment. When resources were encountered, they were mapped using global positioning system (GPS) receivers with submeter accuracy and all site constituents were recorded. Sufficient information was recorded for each resource to complete a Department of Parks and Recreation (DPR) 523 site record.

4.2.2 Resource Evaluation Methods

All newly identified archaeological sites were evaluated for the NRHP and CRHR. Evaluations of eligibility for the NRHP were made using the four NRHP eligibility criteria, A through D, developed by the National Park Service for assessing the historical significance of cultural resources (Table 3). At least one criterion of the National Register Criteria of Evaluation must be met for a property to be considered eligible to the NRHP (National Park Service 1991).

Table 3: Criteria for Inclusion of a Resource in the NRHP

Criterion	Association	Characteristic
A	Event	Properties associated with events that have made a significant contribution to the broad patterns of U.S. history.
B	Person(s)	Properties associated with the lives of persons significant in U.S. history.
C	Design/ Construction	Properties that embody the distinctive characteristics of a type, period, region, or method of construction; or that represent the work of a master; or that possess high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction.
D	Information Potential	Properties that have yielded, or may be likely to yield, information important to the prehistory or history.

Source: National Park Service 1991

In addition to historical significance, a property must have integrity to be eligible for the NRHP. Integrity is the property's ability to convey its demonstrated historical significance. Seven individual elements comprise integrity (Table 4). It is not required that a historic property display all these qualities. A property must display at least two of these aspects of integrity to be considered NRHP-eligible (National Park Service 1991).

Table 4: Qualities of Integrity Related to Eligibility for the NRHP

Quality	Description
Location	The place the historic property was constructed or the historic event occurred.
Design	The combination of elements creating the property's form, plan, space, structure, and style.
Setting	The physical environment of the historic property.
Materials	The physical elements combined at a particular period of time and in a particular pattern or configuration to form a historic property.
Workmanship	The physical evidence of the craft of a particular culture or people during any given period.
Feeling	The resource's expression of the aesthetic or historic sense of a particular period of time.
Association	The direct link between an important historic event or person and the property.

Source: National Park Service 1991

Evaluations of eligibility for the CRHR were made using the four CRHR eligibility criteria, 1 through 4, developed by the California Department of Parks and Recreation (California Department of Parks and Recreation 1998a, 1998b). These criteria are nearly identical to the criteria for eligibility for the NRHP (see Table 4-3), but with greater emphasis placed on local, regional, and state significance. Also, like the NRHP, a resource must have integrity to be eligible for the CRHR. Seven individual elements comprise integrity for the CRHR and are the same as the seven elements of integrity for the NRHP (see Table 4). Only two of these aspects of integrity must be present for the resource to be considered CRHR-eligible (California Department of Parks and Recreation 1998a, 1998b).

5.0 BACKGROUND

The following natural and cultural setting for the Project provides the backdrop against which cultural resources are evaluated for inclusion in the NRHP and CRHR.

5.1 Environmental Setting

The Project area is located in the Mojave Desert Geomorphic Province, a region characterized by vast, arid expanses of barren mountain ranges, broad alluvial-filled flatlands, desiccated riverbeds and washes, extensive mesas, sand dunes, playas, volcanic cinder cones, and basaltic lava flows (Norris and Webb 1990; Sylvester and O'Black Gan, 2016). The topography in the immediate vicinity of the Project area is characterized by a relatively flat desert basin with a very broad, gentle slope towards large dry lake drainage basins such as Rosamond Lake and Rogers Lake to the north. The on-site topography ranges from approximately 2,500 feet in north to 2,530 feet in the south above mean sea level.

Geologic mapping indicates that the Project area is entirely underlain by Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) (Hernandez 2010). Additionally, Pleistocene-age older alluvium often occurs beneath Holocene-age younger alluvium or occurs as a mixture of undifferentiated alluvium with these younger deposits within the Mojave Desert Geomorphic Province (Reynolds 1989).

The northwestern portion of the Project area is bisected by a large natural drainage. Along the drainage is a dense growth of sagebrush. The predominate plant community in the Project area is Joshua Tree, creosote scrub, and sagebrush scrub.

5.2 Ethnography

The Project area is located within the territory known to have been occupied by the Serrano and Kitanemuk groups of Native Americans at the time of contact with Europeans, around A.D. 1769.

Serrano (Vanyume)

The Serrano speakers in the Mojave Desert who lived along the Mojave River were known as Vanyume. Serrano is a language within the Takic family of the Uto-Aztecan language stock. The Serrano occupied an area in and around the San Bernardino Mountains between approximately 1,500 and 11,000 feet above mean sea level. Their territory extended west into the Cajon Pass, east as far as Twentynine Palms, north to Victorville, and south to the San Bernardino Valley and west into the Antelope Valley (Bean and Smith 1978). The Vanyume may have numbered as many as 700 people during the beginning of the historical period (Sutton and Earle 2017). Vanyume villages were located along the Mojave River from south of Victorville to Soda Lake. These river villages had populations of 40 to 80 people.

The Serrano were mainly hunters and gatherers who occasionally fished. Game that was hunted included mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Vegetable staples consisted of acorns, pinyon nuts, bulbs and tubers, shoots and roots, juniper berries, mesquite, barrel cacti, and Joshua tree (Bean and Smith 1978).

A variety of materials were used for hunting, gathering, and processing food, as well as for shelter, clothing, and luxury items. Shells, wood, bone, stone, plant materials, and animal skins and feathers were used for making baskets, pottery, blankets, mats, nets, bags and pouches, cordage, awls, bows, arrows, drills, stone pipes, musical instruments, and clothing (Bean and Smith 1978).

Settlement locations were determined by water availability, and most Serranos lived in villages near water sources. Houses and ramadas were round and constructed of poles covered with bark and tule mats (Kroeber

1925). Most Serrano villages also had a ceremonial house used as a religious center. Other structures within the village might include granaries and sweathouses (Bean and Smith 1978).

Serrano social and political units were clans, patrilineal exogamous territorial groups. Each clan was led by a chief who had both political and ceremonial roles. The chief lived in a principal village within the clan's territory. The clans were part of a moiety system such that each clan was either a wildcat or coyote clan and marriages could only occur between members of opposite moieties (Earle 2004). Marriage ties between the Serrano foothill villages and Vanyume desert villages facilitated access to mountain resources, such as acorns and pinyon nuts, by the desert villages. The principal desert resources were mesquite beans, screw beans, tule reed roots, and carrizo grass sugar (produced by aphids that lived on the Carrizo grass). Animal resources were rabbits, jackrabbits, desert bighorn sheep, pronghorn, and desert tortoise (Earle 2005:10). The Vanyume also collected salt from Soda Lake and from the Barstow-Daggett area to exchange for acorns and other resources from the mountains (Earle 2005:11).

Partly due to their mountainous and desert inland territory, contact between Serrano and European-Americans was minimal prior to the early 1800s. In 1819, an asistencia (mission outpost) was established near present-day Redlands and was used to help relocate many Serrano to Mission San Gabriel. However, small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture. Today, most Serrano live either on the Morongo or San Manuel reservations (Bean and Smith 1978).

Kitanemuk

The Kitanemuk are a poorly known group of Takic-speakers related to the Tataviam, the Serrano and the Cahuilla. They have been documented to inhabit the Tehachapi Mountains, the Southern Sierra Mountains, and the Antelope Valley. They were thought to be mainly mountain dwellers, but exploited desert resources during various times of the year (Blackburn and Bean 1986). It is documented that the Kitanemuk shared many of the beliefs, rituals and organization characteristics of neighboring cultures like the Chumash or Yokuts or the Serrano.

Like other Takic-speaking cultures, the Kitanemuk was organized around a patrilineal lineage based on familial units. There does not appear to be any moiety system like the Serrano or Cahuilla. Structures within the villages were made of thatch of brush or reeds. Villages consisted of family structures, ramadas, granaries, and a ceremonial structure. The Kitanemuk buried their dead in a cemetery, and month-long mourning ceremonies were held. The leader of the village (kika?y) along with a ceremonial leader (paka?) managed most ceremonies within the village. The Kitanemuk were a shamanistic society. Shamans (tsac) were used for dream interpretation, divining, rain-making, and curing (Blackburn and Bean 1986). Shrines (nahwintis) were known to be located on the tops of hills, off trails, or in isolated places were used to leave offerings and pray.

Kitanemuk were hunter-gatherer who exploited a wide variety of environmental zones based on the elevation of their homeland and the seasonality of the resources. Kitanemuk gathered desert plants of the Mojave Desert including Joshua tree flowers, mesquite bean, yucca, cacti, and desert seed plants such as chia. They also gathered higher elevation plants such as pinion nuts and acorns. Hunting was done at all elevations and included a wide variety of large and small game. Kitanemuk groups traded mainly mountain resources, such as pinion seeds and yucca to lowland tribes and groups.

In the Late Prehistoric, the Kitanemuk may have abandoned permanent habitation of the Antelope Valley for the Tehachapi Mountains (Sutton 1980). Historically, the Kitanemuk was thought to have been forcibly relocated to Fort Tejon in the 19th century, then Tule River Reservation north of Bakersfield. Some remained in the Fort Tejon area into the 20th century. Today, the Tejon Indian Tribe, consider themselves to be the ancestors of the Kitanemauk. They are a federally recognized tribe located in Kern County, mainly in Bakersfield.

5.3 Prehistoric Cultural Setting

Archaeological evidence indicates that human occupation of the Mojave Desert dates to at least 10,000 years before present (BP). Four cultural periods of pre-Contact occupation of the region have been identified and refined: the Pleistocene Period (Pre-10,000 to 8,000 years BP), the Early Holocene Period (8,000 to 6,000 years BP), the Middle Holocene Period (6,000 to 2,000 years BP), and the Late Holocene Period (2,000 years BP to the time of Euro-American Contact [i.e., AD 1769]) (Sutton et al. 2007).

Occupation of the Mojave Desert during the Pleistocene Period has only been confirmed for the Paleo-Indian or Clovis cultural complex (10,000 to 8,000 years BP) during the later portion of the Pleistocene Period. This cultural complex is characterized by large, fluted projectile points, which have been most commonly found near Pleistocene Lakes indicating a reliance on hunting large game in lacustrine environments (Sutton et al. 2007; Warren 1984). The relative paucity of assemblages dating to this time period leaves gaps in our understanding of the lifeways of these early occupants of the Mojave Desert.

A greater number of sites with more diverse assemblages are observed in resources dating to the Early Holocene Period. An increased diversity of lithic tools is represented, indicating significant advancement in lithic technology and continued hunting and animal processing during this period. Tools include Lake Mojave and Silver Lake points, bifaces, and crescents. Milling-related artifacts also appear during this period, indicating greater use of vegetal foods. Trade is reflected by the presence of shell beads in some desert sites. Sites reflecting extensive residential occupation appear to have been occupied recurrently on a seasonal basis rather than as permanent settlements (Sutton et al. 2007; Warren 1984).

During the Middle Holocene Period, the Mojave Desert appears to have been occupied by multiple culturally and technologically distinct populations. Lithic technologies continued to develop during this period with a greater diversity of raw materials used and an increase in bifacial and unifacial tools, as well as milling implements. Pinto points are common. Use of bone artifacts appears to have increased during this period, and baked-earth steaming ovens first appear. Occupation of permanent or semi-permanent villages occurred in this period, and reoccupation of seasonal sites continued. Olivella shell beads reflect continued trade with coastal groups (Sutton et al. 2007; Warren 1984). The lack of sites dating to the last millennium of this period (i.e., 3,000 to 2,000 years BP) has been interpreted to indicate a hiatus of occupation of the Mojave Desert, possibly due to hot, dry conditions (Sutton et al. 2007).

The Late Holocene Period saw an increase in rainfall and lake levels, and a corresponding increase in the exploitation of the desert environment, particularly near pluvial lakes and streams. Sites are smaller but more numerous and spread over a larger area. Structures like wickiups and pit houses have been documented. Point types include Elko, Humboldt, Gypsum, Rose Spring, Eastgate, and Desert Side-Notched. Smaller dart and arrow points combined with faunal remains indicate a greater reliance on rabbits, rodents, and other small game. Evidence of ceremonial or ritual practices are represented by quartz crystals, paint, and rock art (Sutton et al. 2007; Warren 1984).

5.4 Historical Setting

The first European to travel through the Mojave Desert and up the Mojave River was Father Francisco Garces, who traveled from the Colorado River Valley in 1776 (Garces 1900). Early expeditions were largely focused on establishing travel routes through the area. The Old Spanish Trail (1829/30), Salt Lake City Road (Mormon Road, 1847) and the Mojave Road (1859) were major early trail through the Mojave Desert established using old Native American trails and natural pathways like the Mojave River valley. Prospecting and mining began the 1850s. In the 1870s, borax and other agricultural and industrial chemicals were beginning to be mined from dry lake beds such as Searles Lake, Death Valley, and Boron. Gold, tungsten, and silver mining began in earnest in the 1880s to 1890s in the Red Mountain area and in the Argus and Coso mountains ranges. In the early twentieth century, improved transportation in the region allowed the

development of industrial mining of non-precious minerals (Miller and Miller 1986; Thompson 1929; U.S. Borax 1983).

The Southern Pacific Railroad Company built a railway to Mohave through the Tehachapi Mountains in 1876, and a Needles branch in 1882. The first artesian well in the Antelope Valley was sunk along the railroad tracks for locomotive use. The rail lines spurred a real estate boom in the region and the establishment of homesteads throughout the Mojave Desert in the late 1800s and early 1900s. Settlers planted crops of alfalfa, grain, and fruit, and watered the fields with wells and simple irrigation systems. By the 1920s, however, many early homesteaders had abandoned their desert claims due to lack of water (Los Angeles County Library 2019).

In the early twentieth century, new automobile roads were constructed across the Mojave Desert. The most notable of these roads are the National Trails Highway (1914), Arrowhead Highway (1922), and US Route 66 (1926). The early highways were replaced by the interstate system in the 1950s. In 1964, the Antelope Valley Freeway (SR-14) was completed between Los Angeles and Lancaster (Los Angeles County Library 2019).

Intensive military presence in the area began just prior to World War II when the U.S. Army identified the Muroc Dry Lake (presently Rogers Dry Lake) as a suitable location for bombing and gunnery ranges for the early air force. After the war, the facility was renamed Edwards Air Force Base and designated as the Air Force Flight Test Center. This contributed to the growth of Lancaster as residences, restaurants, and businesses opened to support the military personnel. In 1977, Lancaster incorporated. Today Lancaster has a population of more than 156,000 residents.

6.0 STUDY FINDINGS AND CONCLUSIONS

6.1 Archival Research Results

The first record for land ownership of the Project area dates to August 20, 1890, at which time the SE ¼ of Section 34 of Township 7 North, Range 12 West was granted to Hannah Gilbert (BLM 2020). A review of historic-era newspapers show Gilbert transferring at least part of the property to Ellert C. Coleman in 1897. No further mention was found of either Gilbert or Coleman in historical newspaper databases (Newspapers.com 2020; UCR 2020). Historic-era data ownership is not available online from the Los Angeles County Assessor's Office.

Topographical maps from 1915 and 1917 (Elizabeth Lake) show no development in the Project area, nor do maps from 1930 and 1933 (Lancaster). A topographical map from 1958 (Lancaster) shows eight buildings on West Avenue L 9, immediately adjacent to the northwest portion of the Project, but not within the Project boundary. A topographical map from 1974 (Lancaster West) also shows the Project as undeveloped (US Geological Survey 2020).

Aerial imagery from 2003 to present (Google Earth 2020) does not show any building footprints or development with the Project, although crisscrossing dirt roads are visible across the area. By 2011, piles of refuse have been placed along the southeast margin of the crossbar of the "T-shaped" Project area. These were noted during the survey as areas of piled modern refuse, including wooden spool cable reels and structural debris atop and adjacent to graded semi-truck parking areas.

6.2 Cultural Resources within the Project APE

No previously-recorded resources were identified within the Project APE as a result of the records search. During field survey of the Project APE, no historic-age elements of the built environment were identified within the APE.

Five new historic-age archaeological sites (R201009-88-01, -02, -05, -06, and -09) were identified and recorded within the Project APE during the field survey. Initially these were recorded as nine artifact concentrations. Following a post-field review of the data, six of the artifact concentrations were grouped together to form two sites given their close proximity to each other. All five resources consist of historic-age refuse and structural debris. All five resources were evaluated for NRHP and CRHR eligibility using the criteria described in Section 4.2.2, above. The resource evaluations were completed based on the recorded site constituents and resource integrity, and the results of the archival research, as presented in Section 6.1, above.

The locations of all five resources within the Project APE are presented in Appendix A. DPR 523 records for the five resources are provided in Appendix B. The description and NRHP/CRHR evaluation of each resource is provided below.

6.2.1 Site R201009-88-01

Resource Description. This site is a large, sparse refuse scatter consisting of domestic trash (e.g., cans, bottles, ceramics), cinder blocks and roof tiles, and automobile parts dating to the mid-twentieth century. Artifacts include bottles, scrap metal, a porcelain plate, a teacup, a cobalt bottle, whiteware ceramic fragments, refined earthenware fragments, a stone insulator, a crushed hole-in-top can, terracotta roof tiles, a vehicle tire, a taillight, and 15 pieces of rubber. The density of the artifacts is highest in the northern portion of the site. Diagnostic artifacts include glass bottle bases with makers marks (Clorox, Glass Container Corp., Hazel Atlas, Owen-Illinois, and Thatcher Manufacturing Co.) and a hole-in-top can. The manufacturing dates of these items overlap between the 1940s and 1960s (Toulouse 1971).

The refuse appears to be mostly surface deposits. The highest density of artifacts is in the northern portion of the site.

There is a 12-foot diameter graded/ bulldozed area near the center of the site and homeless encampments west of the site. Modern refuse is scattered throughout the area.

Resource Evaluation. Site R201009-88-01 is a large, sparse refuse scatter containing artifacts and structural debris dating to the mid-20th century. The review of historic maps and aerial photographs, as discussed in Section 6.1, above, indicates that there was no residence at this location. The site may contain refuse deposited by the residences to the east of the Project area or may reflect roadside dumping from unknown individuals who resided elsewhere. As such, this secondary refuse deposit is not associated with events or persons significant to the past and the site is not considered eligible for the NRHP under Criteria A or B, or the CRHP under Criteria 1 or 2. The artifact assemblage consists of commonly manufactured food and beverage containers, automotive parts, and household goods that were intended for single-use, or curated items that have broken and been discarded. The cinder blocks and roof tiles cannot be assigned to any particular architectural style. Therefore, the artifacts do not embody distinctive characteristics of a type, period, or method of construction, represent the work of master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the site is not eligible for the NRHP under Criterion C or the CRHP under Criterion 3.

The refuse scatter is a surface deposit that has been spread over a large area through what may have been multiple episodes of dumping and erosional processes. Rather than a formal refuse disposal site with stratified layers of cultural fill, the assemblage consists of expediently deposited rubble and artifacts that are scattered across the area. The artifacts on the site are common to refuse scatters that are ubiquitous in southern California. Although diagnostic artifacts are present, they are not unique and cannot provide important information to our understanding of history. The site also lacks in-situ features that may offer information important to the history of the region. For this reason, the site has limited data potential that has been nearly exhausted by the level of documentation completed to date. Therefore, site R201009-88-01 is recommended as not eligible for the NRHP under Criterion D, or the CRHP under Criterion 4.

6.2.2 Site R201009-88-02

Resource Description. This site is a refuse scatter consisting of domestic trash dating from the early and mid-twentieth century and appears to be mostly surface deposits. One prehistoric rhyolite, tertiary flake was also found on the site.

Historic-age artifacts include a hole-in-top knife opened can, green-glazed ceramic fragments, a roman-style roof tile, crushed cans (15), colorless glass fragments, colorless glass screw top jar, sanitary cans (2), boot soles (3), milk jug finish, a vehicle tire, a colorless bottle with "Fitchs" embossed on the base, a green bottle with a Owens Illinois maker's mark, a pink glass with a decorative base, one colorless glass and one green glass screw-top bottle finish, brown glazed ceramic toy or decorative element, a brick, paint cans (2), an amber bottle, a soda bottle embossed with "Charles E. Hires Co.," beverage cans can with church-key opening (26), a glass jar with a "Ball" maker's mark, a spice tin, a whiteware teacup, a white porcelain cup, coffee cans (3), a glass lamp fragment, an oil can, a white ceramic plate fragment with a red border, a tile fragment embossed with "Gladding McBean and Co.," an amber liquor bottle embossed with the Maywood Glass maker's mark, a ladies shoe heel, and a ceramic sherd with a picture of a bear or rabbit and "Empire China" on the base.

A large intermittent drainage bisects the center of the site and has washed many artifacts over a large area., The site is next to active homeless encampments and modern refuse is scattered throughout the area.

Resource Evaluation. Site R201009-88-02 is a large refuse scatter containing artifacts dating to the early and mid-20th century. The review of historic maps and aerial photographs, as discussed in Section 6.1, above, indicates that there was no residence at this location. The site likely represents roadside dumping from unknown individuals who resided elsewhere. As such, this secondary refuse deposit is not associated with events or persons significant to the past and the site is not considered eligible for the NRHP under Criteria A or B, or the CRHP under Criteria 1 or 2. The artifact assemblage consists of commonly manufactured food and beverage containers and household goods that were intended for single-use, or curated items that have broken and been discarded. Therefore, the artifacts do not embody distinctive characteristics of a type, period, or method of construction, represent the work of master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the site is not eligible for the NRHP under Criterion C or the CRHP under Criterion 3.

The refuse scatter is a surface deposit that has been spread over a large area through what may have been multiple episodes of dumping and erosional processes. Rather than a formal refuse disposal site with stratified layers of cultural fill, the assemblage consists of expediently deposited rubble and artifacts that are scattered across the area. The artifacts on the site are common to refuse scatters that are ubiquitous in southern California. Although diagnostic artifacts are present, they are not unique and cannot provide important information to our understanding of history. The site also lacks in-situ features that may offer information important to the history of the region. For this reason, the site has limited data potential that has been nearly exhausted by the level of documentation completed to date. Therefore, site R201009-88-02 is recommended as not eligible for the NRHP under Criterion D, or the CRHP under Criterion 4.

6.2.3 Site R201009-88-05

Resource Description. This site is a small refuse scatter consisting of domestic trash and structural debris dating to the mid-twentieth century. It appears to be mostly surface deposits. Artifacts include asphalt/concrete, brick, a boot sole, a toilet tank, a glass bottle base with makers mark, milk glass, Clorox Jug base, sanitary cans (5), a coffee can, and colorless screw top bottle lid. These artifacts all date the site to the mid-20th century.

Resource Evaluation. Site R201009-88-05 is a small refuse scatter containing artifacts and structural debris dating to the mid-20th century. The review of historic maps and aerial photographs, as discussed in Section 6.1, above, indicates that there was no residence at this location. The site likely represents roadside dumping from unknown individuals who resided elsewhere. As such, this secondary refuse deposit is not associated with events or persons significant to the past and the site is not considered eligible for the NRHP under Criteria A or B, or the CRHP under Criteria 1 or 2. The artifact assemblage consists of commonly manufactured food and beverage containers and household goods that were intended for single-use, or curated items that have broken and been discarded. Therefore, the artifacts do not embody distinctive characteristics of a type, period, or method of construction, represent the work of master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the site is not eligible for the NRHP under Criterion C or the CRHP under Criterion 3.

The refuse scatter is a surface deposit that has been spread over a large area through what may have been multiple episodes of dumping and erosional processes. Rather than a formal refuse disposal site with stratified layers of cultural fill, the assemblage consists of expediently deposited rubble and artifacts that are scattered across the area. The artifacts on the site are common to refuse scatters that are ubiquitous in southern California. Although diagnostic artifacts are present, they are not unique and cannot provide important information to our understanding of history. The site also lacks in-situ features that may offer information important to the history of the region. For this reason, the site has limited data potential that has been nearly

exhausted by the level of documentation completed to date. Therefore, site R201009-88-05 is recommended as not eligible for the NRHP under Criterion D, or the CRHP under Criterion 4.

6.2.4 Site R201009-88-06

Resource Description. This site is a small refuse scatter consisting of a cluster of wooden spindles that covers the majority of the site, an earthenware glazed serving bowl, bricks, a soda bottle fragment, a milk glass bottle embossed with "Anchor Hawking, Fire King," a green glass bottle, a refined earthenware bowl with a floral motif, a refined earthenware bowl with "Juvenile Ware, Brotherhood of Potters, Cambridge, USA" on the base, a brown bottle base embossed with the Owens Illinois maker's mark, and an amber glass bottle. These artifacts all date the site to the mid-twentieth century. The site is next to active homeless encampments and modern refuse is scattered throughout the area.

Resource Evaluation. Site R201009-88-06 is a small refuse scatter containing artifacts and structural debris dating to the mid-20th century. The review of historic maps and aerial photographs, as discussed in Section 6.1, above, indicates that there was no residence at this location. The site likely represents roadside dumping from unknown individuals who resided elsewhere. As such, this secondary refuse deposit is not associated with events or persons significant to the past and the site is not considered eligible for the NRHP under Criteria A or B, or the CRHP under Criteria 1 or 2. The artifact assemblage consists of commonly manufactured food and beverage containers and household goods that were intended for single-use, or curated items that have broken and been discarded. Therefore, the artifacts do not embody distinctive characteristics of a type, period, or method of construction, represent the work of master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the site is not eligible for the NRHP under Criterion C or the CRHP under Criterion 3.

The refuse scatter is a surface deposit that has been spread over a large area through what may have been multiple episodes of dumping and erosional processes. Rather than a formal refuse disposal site with stratified layers of cultural fill, the assemblage consists of expediently deposited rubble and artifacts that are scattered across the area. The artifacts on the site are common to refuse scatters that are ubiquitous in southern California. Although diagnostic artifacts are present, they are not unique and cannot provide important information to our understanding of history. The site also lacks in-situ features that may offer information important to the history of the region. For this reason, the site has limited data potential that has been nearly exhausted by the level of documentation completed to date. Therefore, site R201009-88-06 is recommended as not eligible for the NRHP under Criterion D, or the CRHP under Criterion 4.

6.2.5 Site R201009-88-09

Resource Description. This site is a historic-age refuse scatter containing a variety of artifacts including a metal tag embossed with "Gold Rose," (20+) sanitary cans, (2) oil cans, a solvent can, a colorless glass jar base with an Owens Illinois maker's mark, (2) metal pull tab can, (2) condensed milk can, a plastic plate with floral motif, a refined earthenware bowl with a floral motif and "Orchard Ware" on the base, tar paper, fragments of aluminum foil, yellow Bakelite dish fragment, an earthenware cup with bird and flower motif, (5) short pieces of hose, a handmade porcelain ashtray, burned bone w/ butcher marks, a coca cola bottle, colorless bottle with base "San Jose CA", (2) screw-top jar, screw-top circular small jar, an amber bottle with base, a yellow plastic comb, a glue tube, wire, milk glass coffee mug, a bottle fragment embossed with "Gillette," and a bottle fragment embossed with "Sugar-Free." These artifacts all date the site to the mid-twentieth century, predominantly from the 1960s.

Resource Evaluation. Site R201009-88-09 is a small refuse scatter containing artifacts dating to the mid-20th century. The review of historic maps and aerial photographs, as discussed in Section 6.1, above, indicates that

there was no residence at this location. The site likely represents roadside dumping from unknown individuals who resided elsewhere. As such, this secondary refuse deposit is not associated with events or persons significant to the past and the site is not considered eligible for the NRHP under Criteria A or B, or the CRHP under Criteria 1 or 2. The artifact assemblage consists of commonly manufactured food and beverage containers and household goods that were intended for single-use, or curated items that have broken and been discarded. Therefore, the artifacts do not embody distinctive characteristics of a type, period, or method of construction, represent the work of master, possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction. Therefore, the site is not eligible for the NRHP under Criterion C or the CRHP under Criterion 3.

The refuse scatter is a surface deposit that has been spread over a large area through what may have been multiple episodes of dumping and erosional processes. Rather than a formal refuse disposal site with stratified layers of cultural fill, the assemblage consists of expediently deposited rubble and artifacts that are scattered across the area. The artifacts on the site are common to refuse scatters that are ubiquitous in southern California. Although diagnostic artifacts are present, they are not unique and cannot provide important information to our understanding of history. The site also lacks in-situ features that may offer information important to the history of the region. For this reason, the site has limited data potential that has been nearly exhausted by the level of documentation completed to date. Therefore, site R201009-88-09 is recommended as not eligible for the NRHP under Criterion D, or the CRHP under Criterion 4.

6.3 Buried Site Sensitivity Analysis

A buried site sensitivity assessment was conducted to analyze the potential for the Project area to contain buried cultural resources that could be affected by the proposed Project. The sensitivity for the Project APE to contain buried archaeological sites was derived by examining the following data sets, each of which is described below:

- The age of sediments and existing soil types based on a review of geological maps;
- A review of historic maps and aerial photographs; and
- Site locational information of known prehistoric and historic-age resources.

Sediment and Soil Types. Geologic mapping indicates that the Project area is entirely underlain by Holocene-age modern alluvium (Qa), Holocene-age modern alluvial fan deposits (Qf), late Holocene-age wash deposits (Qw), and Holocene to late Pleistocene-age younger alluvial fan deposits (Qyf) (Hernandez 2010). While not mapped at the surface, Pleistocene-age older alluvium often occurs beneath Holocene-age younger alluvium at various depths (Richards and Kruk 2021).

In California generally, Pleistocene soils dated between 2 million and 11,000 years BP (or older in age), and early Holocene age (8,000 to 11,000 years BP) deposits are considered to be very low in archaeological sensitivity due to the relative lack of human occupation in the region during these periods. The Middle Holocene (8,000 to 5,000 years BP) is considered to be potentially sensitive. Late Holocene deposits (5,000 years BP to present) are also considered to be sensitive depending on other factors such as the presence of known archaeological sites and major water sources such as natural lakes, creeks, and ephemeral drainages. The presence of potentially Holocene-aged soils (alluvium) and the Project's proximity to water (a wide ephemeral drainage bisects the Project area) suggests that there is a potential for archaeological deposits within the APE. The Project may encounter native alluvial Holocene soils as part of the proposed excavations for the solar facility, which will extend up to 10 feet deep.

Historic Maps and Aerial Photographs. A review of archival records, historic maps, and aerial photographs for the Project area was conducted and is discussed in detail in Section 6.1, above. That review indicates that although ownership of the parcels in the APE can be traced back to 1890, there is no evidence

of any buildings, structures, or other indications of development or historic occupation of the APE. As a result, there is a low potential for buried historic-age resources within the Project APE.

Locational Information on Known Resources. Thirteen previously-recorded cultural resources were identified within 0.5 mile of the Project APE during the records search (see Table 2). Twelve of these resources consist of historic-age sites, including nine refuse scatters, one architectural resource, and two isolated finds. Only one of the 13 resources is a prehistoric site. During field survey of the Project APE, five new archaeological sites were recorded. All five consist of historic-age refuse scatters that appear to be limited to surface deposits.

Although 49 previous investigations have been conducted within 0.5 mile of the APE, only one prehistoric resource has been identified. Only one isolated prehistoric flake was identified within Site R201009-88-01 during the field survey. This near lack of prehistoric resources indicates that prehistoric use of the area encompassing the APE may have been relatively limited.

Summary of Buried Site Sensitivity Analysis. Based on the lack of development or occupation of the APE in historic times, there is a low potential for buried historic-age resources within the APE. Although the age of the sediments within the APE indicate the potential for buried archaeological deposits, the relative lack of prehistoric resources identified within 0.5 mile of the APE indicates that the potential for buried prehistoric materials is also low.

7.0 SUMMARY AND RECOMMENDATIONS

The cultural resources inventory and evaluation for the proposed property acquisition and solar facility development in Lancaster included a records search, archival research, field survey, evaluation of resources for eligibility to the NRHP and CRHR, and a buried site sensitivity analysis. The record search results indicate that there are no previously-recorded resources within the Project APE. Archival research has indicated that there was no development or historic occupation of any of the parcels within the Project APE. During the field survey, five archaeological sites (R201009-88-01, -02, -05, -06, and -09) were identified within the Project APE. All five resources consist of historic-age refuse scatters. An isolated prehistoric flake was also observed within Site R201009-88-01. No other prehistoric materials and no historic-age elements of the built environment were observed within the Project APE.

As a result of the resource evaluations, none of the five resources within the APE are recommended as eligible for the NRHP or CRHR. Therefore, there will be no effect to known historic properties (i.e., resources listed or eligible for inclusion in the NRHP) under Section 106 of the NHPA, and there will be no impact to known historical resources (i.e., resources listed or eligible for inclusion in the CRHR) under CEQA. The buried site sensitivity analysis indicates that there is a low potential for buried prehistoric or historic-age archaeological resources.

In the unlikely event that buried archaeological resources are encountered during ground-disturbing construction activities, all work within 100 feet of the find shall be halted or redirected away from the find. A temporary exclusion zone shall be established around the find until the resource can be documented and evaluated by a qualified archaeologist who meets the U.S. Secretary of Interior's professional standards for an Archaeological Principal Investigator. If the find is determined to be eligible for inclusion in the NRHP and/or CRHR, appropriate treatment measures shall be developed and implemented in consultation with the AVTA and the FTA, and in consultation with any consulting tribes if the find is a prehistoric or Native American resource. This may include preparation and implementation of a Data Recovery or Historic Property Treatment Plan.

The discovery of human remains is always a possibility during ground disturbing activities. If any human remains are discovered during construction of the solar facility, the procedures and protocols set forth in CEQA Guidelines §15064.5(e)(1); Health and Safety Code §7050.5, subdivision (c); and Public Resources Code §5097.98 (as amended by AB 2641) shall be followed. According to these requirements, if human remains are discovered, all work within 100 feet of the find shall be halted immediately and the Los Angeles County Coroner shall be notified. If the Coroner determines that the remains are Native American, the Coroner shall contact the Native American Heritage Commission (NAHC). The NAHC will identify the most likely descendants (MLD) to be consulted by the AVTA and the FTA regarding treatment and/or reburial of the remains. The MLD shall be afforded an opportunity to inspect the find and make recommendations for treatment options. If an MLD cannot be identified, or the MLD fails to make a recommendation regarding the treatment of the remains within 48 hours after being granted access to the project area to examine the remains, the AVTA shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.

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9.0 LIST OF PREPARERS

8.1 Field Personnel

Antonio Cortez, Archaeological Technician
2019 B.A., Anthropology, San Diego State University
Years of Experience: 2

Rosemarie L. Pavel, Field Director
2019 M.A., Cultural Resource Management, Adams State University, Alamosa, Colorado
2009 B.A., Anthropology, University of Texas, Austin, Texas
Years of Experience: 10

8.2 Report Preparers

Evelyn N. Chandler, Principal Author
2011 M.A. Archaeology and Heritage, University of Leicester, UK
1989 B.A. Anthropology/Sociology, University of Redlands, California
Years of Experience: 28

Antonio Cortez, Contributing Author
2019 B.A., Anthropology, San Diego State University
Years of Experience: 2

Liz Denniston, Principal Investigator
2007 M.A. Anthropology, California State University, Los Angeles, California
1997 B.A. Anthropology, Minnesota State University, Moorhead, Minnesota
Years of Experience: 23

Rosemarie L. Pavel, Contributing Author
2019 M.A., Cultural Resource Management, Adams State University, Alamosa, Colorado
2009 B.A., Anthropology, University of Texas, Austin, Texas
Years of Experience: 10

APPENDIX A

RESOURCE LOCATION MAP
(CONFIDENTIAL)

APPENDIX B

DPR 523 SITE RECORDS
(CONFIDENTIAL)

APPENDIX D PALEONTOLOGICAL INVENTORY REPORT

PALEONTOLOGICAL INVENTORY REPORT

ANTELOPE VALLEY TRANSIT AUTHORITY PROPERTY ACQUISITION PROJECT CITY OF LANCASTER, LOS ANGELES COUNTY, CALIFORNIA

Prepared for: **Tetra Tech, Inc.**
Stephanie Pacheco, Soil Scientist
301 E. Vanderbilt Way, Suite 450
San Bernardino, CA 92408

Prepared by: **Paleo Solutions, Inc.**
911 S. Primrose Ave., Unit N
Monrovia, CA 91016

Courtney Richards, M.S. – Principal Investigator
Betsy Kruk, M.S. – Report Author

PSI Report: CA20LosAngelesTET02R

February 3, 2021

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1.0 EXECUTIVE SUMMARY

This report presents the results of the paleontological technical study conducted by Paleo Solutions, Inc. (Paleo Solutions) in support of the Antelope Valley Transit Authority (AVTA) Property Acquisition Project (Project) located in Los Angeles County, California (see Figures 1 and 2). Paleo Solutions was contracted by Tetra Tech, Inc. (Tetra Tech) to conduct an analysis of existing paleontological data and to provide recommendations for mitigation based on the geological and paleontological data. All paleontological work was completed in compliance with the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), local regulations, and best practices in mitigation paleontology (Murphey et al., 2019). See Table 1 for a Project summary.

The Project proposes the acquisition of an approximately 43-acre parcel in the City of Lancaster, Los Angeles County, California. The Project is situated on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster. Following acquisition of the parcel by the AVTA, a photovoltaic solar facility will be constructed on the parcel.

The paleontological potential of the Project area was evaluated based on an analysis of existing paleontological data. The three components of the analysis of existing data included a geologic map review, a literature search, and an institutional record search. Geologic mapping indicates that the Project area is entirely underlain by Holocene-age modern alluvium (Qa), Holocene-age modern alluvial fan deposits (Qf), late Holocene-age wash deposits (Qw), and Holocene to late Pleistocene-age younger alluvial fan deposits (Qyf) (Hernandez, 2010; see Figure 3). While not mapped at the surface, Pleistocene-age older alluvium often occurs beneath Holocene-age younger alluvium at various depths.

According to the record and the literature searches, there are no previously recorded fossil localities within the Project area; however, the Natural History Museum of Los Angeles County (LACM) reported that there are vertebrate fossil localities recorded in the Project vicinity from sedimentary deposits similar to those that likely occur at depth in the Project area (Bell, 2020). Furthermore, literature and database reviews also identified numerous vertebrate fossils recovered from Pleistocene-age older alluvium and other Pleistocene-age sedimentary deposits elsewhere in Los Angeles County, adjacent areas of Kern County, and throughout southern California (City of Palmdale, 1993; Cooper and Eisentraut, 2002; Jahns, 1954; Jefferson, 1991; PBDB, 2020; UCMP, 2020).

The Potential Fossil Yield Classification (PFYC) system was applied to the results of the analysis of existing data (see Table 2). Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) are estimated to be less than 11,000 years old and have a low paleontological potential (PFYC 2), because these deposits are too young to contain *in-situ* fossils. However, these younger deposits often overlie older geologic units with higher paleontological potential at depth. Pleistocene-age older alluvium, which may be present in the subsurface, has a moderate paleontological potential (PFYC 3).

There is potential for adverse impacts to scientifically significant paleontological resources within Pleistocene-age older alluvium if encountered in the subsurface beneath the Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf). Therefore, it is recommended that excavations into the Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) be initially spot-checked by a Qualified Paleontologist during excavations that exceed depths of 5 feet to check for underlying, paleontologically sensitive Pleistocene-age older alluvium. If it is determined by the Qualified Paleontologist that only Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) (PFYC 2) are impacted, the spot-checks should be reduced or suspended. If Pleistocene-age older alluvium or paleontological resources are observed during spot-checking, then full-time monitoring should be implemented in those areas and a Paleontological Resources Monitoring and Treatment Plan (PRMTP) should be prepared. Prior to the start of construction, a paleontological resources Worker's Environmental

Awareness Program (WEAP) should be presented to all earthmoving personnel to inform them of the possibility for buried resources and the procedures to follow in the event of fossil discoveries. Any subsurface bones or potential fossils that are unearthed during construction should be evaluated by a Qualified Paleontologist. Any fossils determined to be significant or potentially significant should be recovered, prepared, identified, analyzed, and curated at the LACM, or another accredited fossil repository, along with copies of all associated field data.

2.0 INTRODUCTION

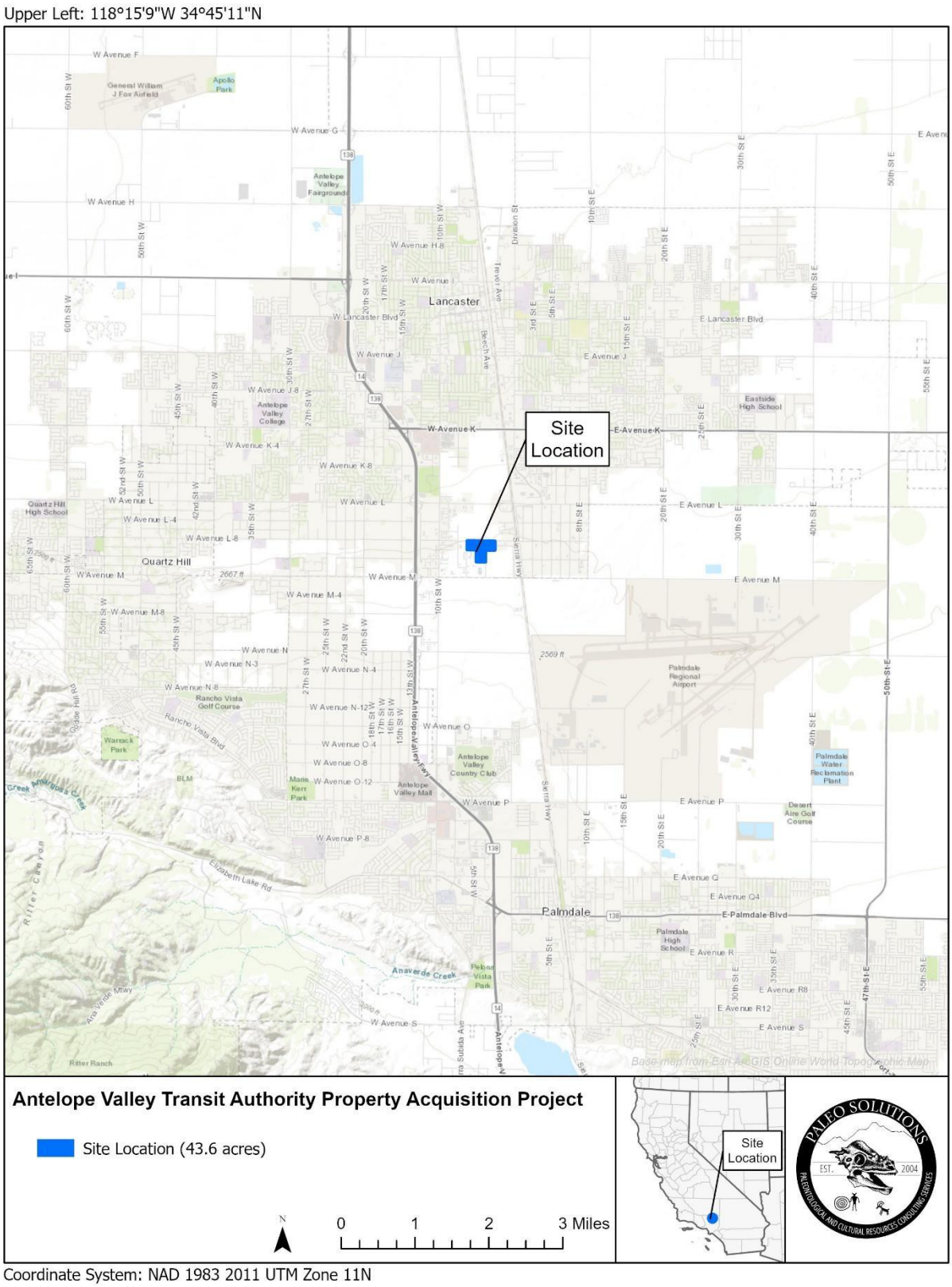
This report presents the results of the paleontological technical study conducted by Paleo Solutions in support of the Antelope Valley Transit Authority (AVTA) Property Acquisition Project located in Los Angeles County, California (see Figures 1 and 2). Paleo Solutions was contracted by Tetra Tech to conduct an analysis of existing paleontological data and to provide recommendations for mitigation based on the geological and paleontological data. All paleontological work was completed in compliance with NEPA, CEQA, local regulations, and best practices in mitigation paleontology (Murphey et al., 2019). The Federal Transit Administration (FTA) will provide federal funding for the project and serve as the lead NEPA agency. The CEQA lead agency will likely be the City of Lancaster (City). See Table 1 for a Project summary.

2.1 Project Description and Location

The Project proposes the acquisition of an approximately 43-acre parcel in the City of Lancaster, Los Angeles County, California (Figure 1). Following acquisition of the parcel by the AVTA, a photovoltaic solar facility will be constructed on the parcel. The solar facility will consist of tracker foundations and racking, power inverters, a transformer, electrical enclosures, data metering and monitoring hardware, overhead cable runs, concrete equipment pads, and perimeter fencing. Construction activities will include excavators and water trucks to prepare the laydown area, grade the Project area, and install drainage and access ways; installation of fencing; construction of piers for the tracker motors and racking; installation of the PV modules, conduits, and wiring; excavation for and pouring of the concrete equipment pads; installation of the combiners, junction boxes, gutters, inverters, switches, transformer, and monitoring system. The maximum depth of construction activities is 10 feet below ground surface.

The Project is situated on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster (Figure 2). The Project is located east of State Route 14 (SR-14) and west of Sierra Highway. Specifically, the Project is within the center of Section 34, Township 7 North, Range 12 West on the San Bernardino Meridian, as depicted on the Lancaster West, California 7.5' U.S. Geological Survey topographic quadrangle. The Project area is adjacent to the Antelope Valley Courthouse, undeveloped land to the north, and industrial development to the west and east. A drainage bisects the property from north to south in the western corner of the Project.

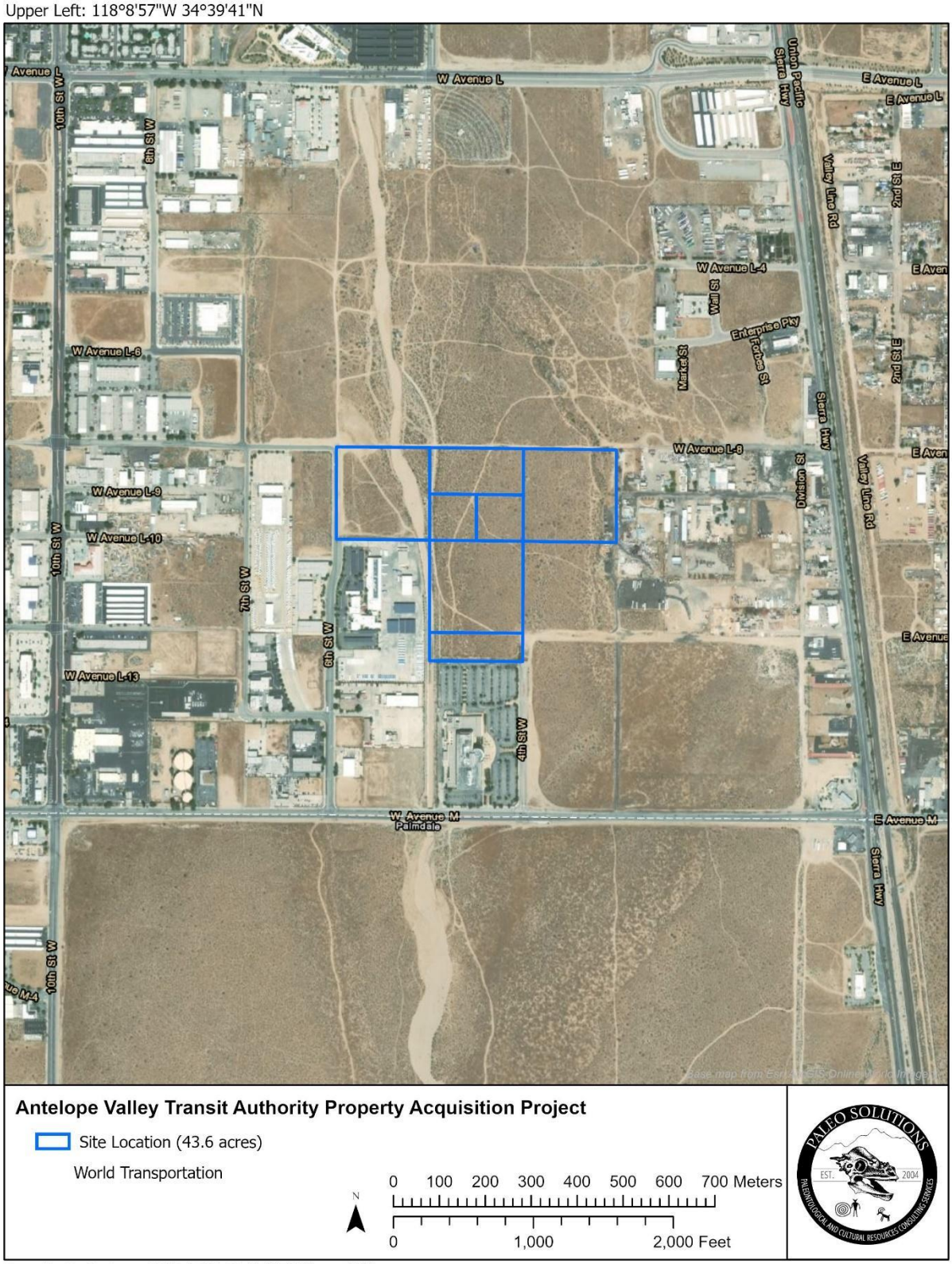
The Project is located in the Mojave Desert Geomorphic Province, a region characterized by vast, arid expanses of barren mountain ranges, broad alluvial-filled flatlands, desiccated riverbeds and washes, extensive mesas, sand dunes, playas, volcanic cinder cones, and basaltic lava flows (Norris and Webb, 1990; Sylvester and O'Black Gans, 2016). Geologic mapping indicates that the Project area is entirely underlain by Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) (Hernandez, 2010; Figure 3). Additionally, Pleistocene-age older alluvium often occurs beneath Holocene-age younger alluvium or occurs as a mixture of undifferentiated alluvium with these younger deposits within the Mojave Desert Geomorphic Province (Reynolds, 1989).



Coordinate System: NAD 1983 2011 UTM Zone 11N

Figure 1. Project Location Map.

Upper Left: 118°8'57"W 34°39'41"N



Coordinate System: NAD 1983 2011 UTM Zone 11N

Figure 2. Project Overview Map.

Table 1. Antelope Valley Transit Authority Property Acquisition Project Summary

Project Name	Antelope Valley Transit Authority Property Acquisition Project			
Project Description	The proposed Project consists of the acquisition of an approximately 43-acre parcel in the City of Lancaster, Los Angeles County, California.			
Project Area	The Project is situated on the southeastern corner of the intersection of West Avenue L 8 and 6th Street West in Lancaster.			
Total Acreage	43.60 acres			
Location (PLSS)	**Quarter**	**Section**	**Township**	**Range**
	NESW	34	7N	12W
	SENW			
	NWSE			
	SWNE			
	SESW			
	SWSE			
Land Ownership	Private			
Topographic Map(s)	USGS Lancaster West, California 7.5' Quadrangle (2018)			
Geologic Map(s)	Geologic Map of the Lancaster West 7.5' Quadrangle, Los Angeles County, California (Hernandez, 2010)			
Mapped Geologic Units(s) and Age(s)	**Geologic Unit and Map Symbol**	**Age**	**Paleontological Potential (PFYC)**	
	Modern alluvium (Qa)	Holocene	2 (Low)	
	Modern alluvial fan deposits (Qf)	Holocene	2 (Low)	
	Wash deposits (Qw)	late Holocene	2 (Low)	
	Younger alluvial fan deposits (Qyf)	Holocene to late Pleistocene	2 (Low)	
	Older alluvial sediments*	Pleistocene	3 (Moderate)	
Permits	No permits were required for the paleontological work conducted.			
Previously Documented Fossil Localities within the Project Area	LACM reported that there are no vertebrate fossil localities recorded from within the Project area. However, there are several localities recorded from within the Project vicinity and other areas of California from sediments similar to those mapped within the Project area (see Section 5.2).			
Recommendations	There is potential for adverse direct impacts to scientifically significant paleontological resources within Pleistocene-age older alluvium if encountered in the subsurface beneath the Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf). Therefore, it is recommended that excavations in areas mapped as Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) be initially spot-checked during excavations that exceed depths of 5 feet to check for underlying, paleontologically sensitive Pleistocene-age older alluvium. If it is determined that only Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) (PFYC 2) is impacted, the monitoring program should be reduced or suspended. If Pleistocene-age older alluvium or paleontological resources are observed during spot-checking, then full-time monitoring should be implemented in those areas and a PRMTP should be prepared. Prior to the start of construction, a paleontological resources WEAP training should be presented to all earthmoving personnel to inform them of the possibility for buried resources and the procedures to follow in the event of fossil discoveries. Any subsurface bones or potential fossils that are unearthed during construction should be evaluated by a Qualified Paleontologist.			

*Not mapped at the surface within the Project area but may be present in the subsurface.

3.0 DEFINITION AND SIGNIFICANCE OF PALEONTOLOGICAL RESOURCES

As defined by Murphey and Daitch (2007): "Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are used to:

- Study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
- Elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
- Reconstruct ancient environments, climate change, and paleoecological relationships;
- Provide a measure of relative geologic dating that forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
- Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
- Study patterns and processes of evolution, extinction, and speciation; and
- Identify past and potential future human-caused effects to global environments and climates."

Fossil resources vary widely in their relative abundance and distribution and not all are regarded as significant. According to the Bureau of Land Management (BLM) Instructional Memorandum (IM) 2009-011, a "Significant Paleontological Resource" is defined as:

> "Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value. Paleontological resources that may be considered not to have scientific significance include those that lack provenience or context, lack physical integrity due to decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past vertebrate life or activities" (BLM, 2008).

Vertebrate fossils, whether preserved remains or track ways, are classified as significant by most state and federal agencies and professional groups (and are specifically protected under the California Public Resources Code). In some cases, fossils of plants or invertebrate animals are also considered significant and can provide important information about ancient local environments.

The full significance of fossil specimens or fossil assemblages cannot be accurately predicted before they are collected, and in many cases, before they are prepared in the laboratory and compared with previously collected fossils. Pre-construction assessment of significance associated with an area or formation must be made based on previous finds, characteristics of the sediments, and other methods that can be used to determine paleoenvironmental and taphonomic conditions.

4.0 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

This section of the report presents the regulatory requirements pertaining to paleontological resources that apply to this Project.

4.1 Federal Regulatory Setting

4.1.1 National Environmental Policy Act (NEPA)

NEPA as amended (Public Law [Pub. L.] 91-190, 42 United States Code [USC] 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258 § 4(b), Sept. 13, 1982) recognizes the continuing responsibility of the Federal Government to "preserve important historic, cultural, and natural aspects of our national heritage . . ." (Sec. 101 [42 USC § 4321]) (#382). With the passage of the Paleontological Resources Preservation Act (PRPA) (2009), paleontological resources are considered to be a significant resource and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact.

4.2 State Regulatory Setting

4.2.1 California Environmental Quality Act (CEQA)

The procedures, types of activities, persons, and public agencies required to comply with CEQA are defined in the Guidelines for Implementation of CEQA (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations) and further amended January 4, 2013 and December 28, 2018. One of the questions listed in the CEQA Environmental Checklist is: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (State CEQA Guidelines Appendix G, Section VII, Part F).

4.2.2 State of California Public Resources Code

The State of California Public Resources Code (Chapter 1.7), Sections 5097 and 30244, includes additional state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, and define the excavation, destruction, or removal of paleontological "sites" or "features" from public lands without the express permission of the jurisdictional agency as a misdemeanor. As used in Section 5097, "state lands" refers to lands owned by, or under the jurisdiction of, the state or any state agency. "Public lands" is defined as lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

4.3 Local Regulatory Setting

4.3.1 City of Lancaster

The City of Lancaster General Plan 2030 (2009) has one objective and one policy pertaining to the identification and preservation of features and sites of cultural (including paleontological), historical, and architectural significance, as well as specific actions that include paleontological resources.

- **Objective 12.1:** Identify and preserve and/or restore those features of cultural, historical, or architectural significance.

- **Policy 12.1.1:** Preserve features and sites of significant historical and cultural value consistent with their intrinsic and scientific values.

- **Specific Action 12.1.1(a):** As part of the CEQA review process, require site-specific historical, archaeological, and/or paleontological studies when there exists a possibility that significant environmental impacts might result or when there is a lack of sufficient documentation on which to determine potential impacts.

- **Specific Action 12.1.1.(b):** Include a condition of approval on all development projects that addresses State and Federal regulations with respect to the disposition of cultural resources.

- **Specific Action 12.1.1(e):** Work with area school districts and historical/archaeological/paleontological preservation support groups to establish educational programs related to all phases of Lancaster's cultural and historical heritage.

5.0 METHODS

The paleontological analysis of existing data included a geologic map review, literature review, and an institutional record search. The goal of this report is to evaluate the paleontological potential of the Project area and make recommendations for the mitigation of adverse impacts on paleontological resources that may occur as a result of the Project. Paleontological sensitivity assignments were determined using the PFYC system (BLM, 2016) and best practices in mitigation paleontology (Murphey et al., 2019). Betsy Kruk, M.S. authored this report. GIS maps were prepared by Elisa Barrios, B.S. Courtney Richards, M.S., provided quality assurance/quality control (QA/QC) and Russell Shapiro, Ph.D. performed the senior review of the report.

Copies of this report will be submitted to the FTA, City, Antelope Valley Transit, and Tetra Tech. Paleo Solutions will retain archival copy of all project information including maps and other data.

5.1 Analysis of Existing Data

Paleo Solutions reviewed geologic mapping of the Project site and half-mile buffer by Hernandez (2010). The literature reviewed included published and unpublished scientific papers. A paleontological museum record search was conducted at LACM. Alyssa Bell, Ph.D., conducted the search (dated August 10, 2020), which is included as Appendix A. Additional record searches of online databases were completed by Paleo Solutions staff.

5.2 Criteria for Evaluating Paleontological Potential

The PFYC system was developed by the BLM as a management tool for assessing paleontological resources by geological unit (BLM, 2016). Because of its demonstrated usefulness as a resource management tool, the PFYC has been utilized for many years for projects across the country, regardless of land ownership. It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential). This system is intended to aid in predicting, assessing, and mitigating paleontological resources. The PFYC ranking system is summarized in Table 2.

Table 2. Potential Fossil Yield Classification (BLM, 2016) Summary

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary (PFYC System)
1 = Very Low Potential	Geologic units are not likely to contain recognizable paleontological resources.
	Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.
	Units are Precambrian in age.
	Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.
2 = Low Potential*	Geologic units are not likely to contain paleontological resources.
	Field surveys have verified that significant paleontological resources are not present or are very rare.
	Units are generally younger than 10,000 years before present.
	Recent eolian deposits.
	Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely.
	Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.
3 = Moderate Potential	Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.
	Marine in origin with sporadic known occurrences of paleontological resources.
	Paleontological resources may occur intermittently, but these occurrences are widely scattered.
	The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.
	Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Opportunities may exist for hobby collecting. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.
4 = High Potential	Geologic units that are known to contain a high occurrence of paleontological resources.
	Significant paleontological resources have been documented but may vary in occurrence and predictability.
	Surface-disturbing activities may adversely affect paleontological resources.
	Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present.
	Illegal collecting activities may impact some areas.
	Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.
5 = Very High Potential	Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.
	Significant paleontological resources have been documented and occur consistently.

	Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.
	Unit is frequently the focus of illegal collecting activities.
	Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.
U = Unknown Potential	Geologic units that cannot receive an informed PFYC assignment.
	Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known.
	Geologic units represented on a map are based on lithologic character or basis of origin but have not been studied in detail.
	Scientific literature does not exist or does not reveal the nature of paleontological resources.
	Reports of paleontological resources are anecdotal or have not been verified.
	Area or geologic unit is poorly or under-studied.
	BLM staff has not yet been able to assess the nature of the geologic unit.
	Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.

*Sensitivity may increase with depth.

6.0 ANALYSIS OF EXISTING DATA

The Project area is located within the Mojave Desert Geomorphic Province. A geomorphic province is a geographical area of distinct landscape character, with related geological features, including relief, landforms, orientations of valleys and mountains, type of vegetation, and other geomorphic attributes (Harden, 2004). Attributes of the Mojave Desert Geomorphic Province consist of vast, arid expanses of barren mountain ranges, broad alluvial-filled flatlands, desiccated riverbeds and washes, extensive mesas, sand dunes, playas, volcanic cinder cones, and basaltic lava flows (Norris and Webb, 1990; Sylvester and O'Black Gans, 2016). Within California, the Mojave Desert Geomorphic Province occupies approximately 25,000 square miles of southeastern California and is bounded on the west by the Western Transverse Ranges, the San Gabriel Mountains, the Tehachapi Mountains, and the San Andreas Fault; on the north and northeast by the Garlock Fault and the Basin and Range Geomorphic Province; on the east by the Nevada State Line and the Colorado River; and on the south by the Eastern Transverse Ranges, the San Andreas Fault, the Salton Trough, and the Colorado Desert, which generally coincide with the San Bernardino-Riverside county boundary (Norris and Webb, 1990; Harden, 2004; Hall, 2007). Topographically, the Mojave Desert has a more subdued landform than the Basin and Range Geomorphic Province of California despite their related geologic histories, with the Mojave Desert containing relatively shorter and lower ranges and broader valleys than the Basin and Range (Harden, 2004). Additionally, the southeastern Mojave Desert lacks the north-south-trending mountain ranges and basins typical of the Basin and Range (Sylvester and O'Black Gans, 2016). Despite its more subdued topography, the Mojave Desert Geomorphic Province has elevations typically above 2,000 feet above sea level, unlike the southern and adjacent Colorado Desert, which has some areas with elevations below sea level.

6.1 Geologic Map and Literature Review

Geologic mapping by Hernandez (2010) indicates that the Project area is entirely underlain by Holocene-age modern alluvium (Qa), Holocene-age modern alluvial fan deposits (Qf), late Holocene-age wash deposits (Qw), and Holocene to late Pleistocene-age younger alluvial fan deposits (Qyf). While not mapped at the surface, Pleistocene-age older alluvium is also known to occur beneath Holocene-age younger alluvial

deposits (Qa, Qf, Qw, Qyf) and is discussed in this report. The distributions of the geologic units in the Project area and vicinity, as mapped by Hernandez (2010), are provided in Figure 3.

6.1.1 Younger Alluvial Deposits (Qa, Qf, Qw, Qyf) (Holocene)

Holocene-age modern alluvium (Qa) consists of yellowish-gray to brown, moderately sorted, unconsolidated to weakly consolidated, silt, medium- to very coarse-grained arkosic sand with cobbles and pebbles (Hernandez, 2010). Holocene-age modern alluvial fan deposits (Qf) consist of unconsolidated to weakly consolidated, poorly sorted, rubble, gravel, sand, and silt deposits forming active, essentially undissected, alluvial fans. Late Holocene-age wash deposits (Qw) consist of unconsolidated fine- to medium-grained sand, with some coarse sand and fine gravel, and silt, the deposits are generally pale brown with angular to sub-angular grains (Hernandez, 2010). Holocene to late Pleistocene-age younger alluvial fan deposits (Qyf) consist of unconsolidated to weakly consolidated, dark- yellowish-brown, fine- to medium-grained arkosic sand with fine gravel and is exposed as slightly dissected, elevated alluvial fans (Hernandez, 2010). Reworked paleontological material from older deposits may be present but would lack critical stratigraphic contextual data. Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) is therefore considered to have a low paleontological potential (PFYC 2) using BLM (2016) guidelines. However, these sediments may overlie older, paleontologically sensitive deposits at depth.

6.1.2 Older Alluvium (Pleistocene)

Pleistocene-age older alluvium mapped within the Project vicinity consists of moderately consolidated, strong brown, medium dense, fine- to medium-grained arkosic sand with fine to medium gravel, which are predominately fine to medium, sub-rounded granitic clasts (Hernandez, 2010). Clay coatings on grains and clasts are predominant and crude bedding exists with basal gravel layers.

Ice Age taxa have been recovered from Pleistocene-age deposits of Los Angeles County and adjacent areas of Kern County, including over 180 localities on Edwards Air Force Base, specimens include frog (cf. *Rana* sp.), tortoise (*Emys marmorata*), scaled reptile (Squamata), snake (Serpentes), pheasant (*Parapavo californicus*), quail (*Callipepla*), shearwater (*Ardenna grisea*), western grebe (*Aechmophorus occidentalis*), loon (*Gavia* sp.), duck (Anatidae), diving goose (*Chendytes lawi*), ray-finned fish (Teleostei), eagle ray (*Myliobatis*), shark (Chondrichthyes), white shark (*Carcharodon* sp.), perch (*Rhacochilus vacca*), speckled sanddab (*Citharichthys* sp.), white croaker (*Genyonemus lineatus*, *Merluccius productus*), rodent (*Neotoma*, *Thomomys*, *Dipodomys* cf. *agilis, Microtus californicus*, *Peromyscus* sp., *Notiosorex crawfordi*), rabbit (*Lepus californicus*, *Sylvilagus*), horse (*Equus* sp., *Equus simplicidens*), tapir (*Tapirus haysii, Tapirus* cf. *californicus*), cat (Felinae), black bear (*Ursus americanus*), bison (*Bison*), mammoth (*Mammuthus primigenius*, *Mammuthus* cf. *columbi*), mastodon (*Mammut pacificus*), ground sloth (Megalonychidae, *Megalonyx* sp., *Paramylodon harlani*), camel (*Camelops* sp., *Camelops* cf. *hesternus, Hemiauchenia* sp.), deer (*Odocoileus* cf. *hemionus*), dire wolf (*Canis* cf. *dirus*), coyote (*Canis* cf. *latrans*), lynx (*lynx rufus*), saber-toothed cat (*Smilodon* sp.), whale (Cetacea), sea otter (*Enhydra* sp.), seal (Otariidae, Phocidae), sea lion (*Phoca* cf. *vitulina*, *Zalophus* sp.), dolphin (*Lissodelphis*), bivalves (Bivalvia), and gastropod (Gastropoda) (PBDB, 2020; UCMP, 2020, City of Palmdale, 1993).

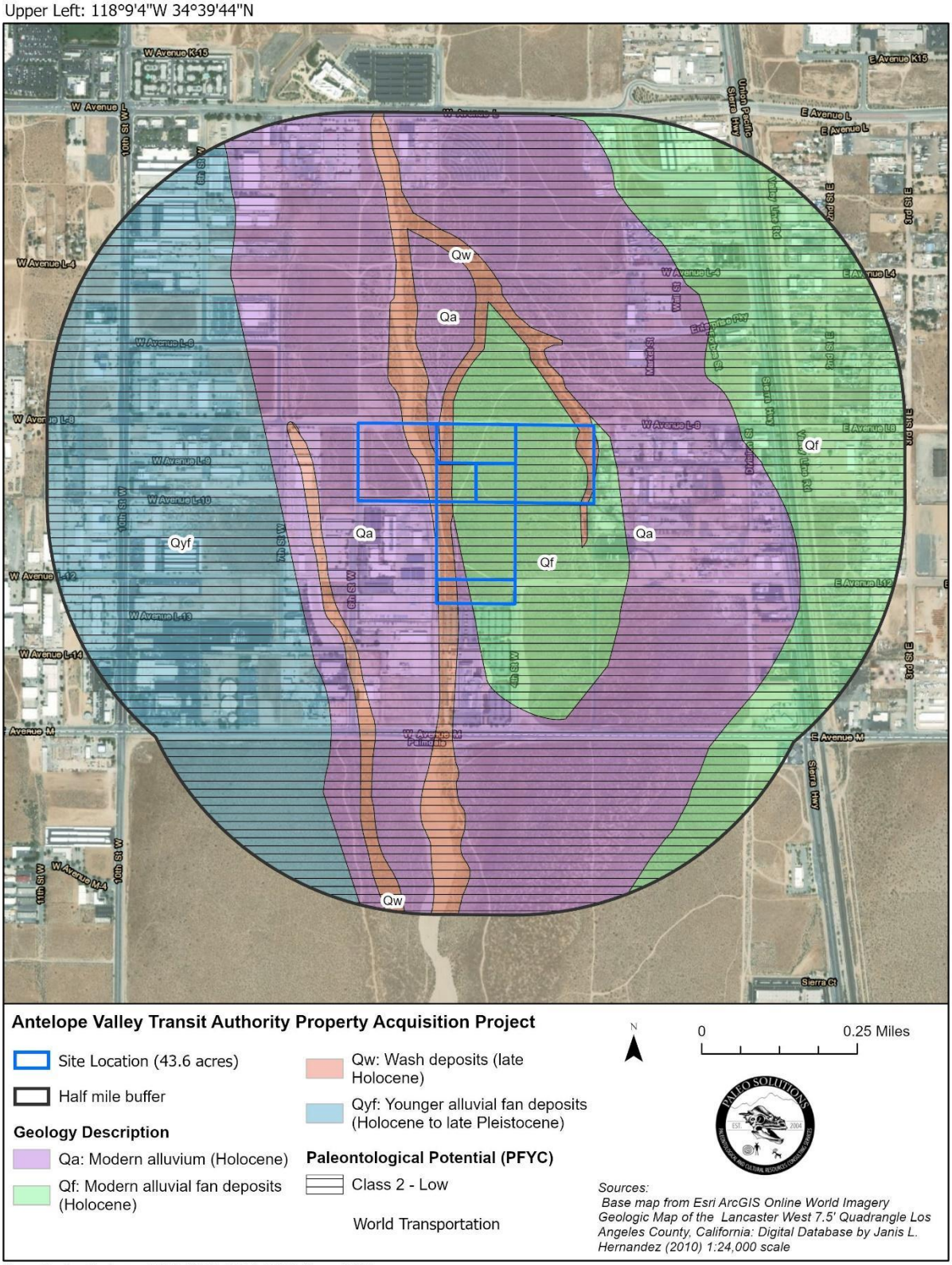
Additional localities recorded from Pleistocene-age sedimentary deposits throughout southern California have produced specimens including mammoth (*Mammuthus*), mastodon (*Mammut*), camel (Camelidae), horse (Equidae), bison (*Bison*), giant ground sloth (*Megatherium*), peccary (Tayassuidae), cheetah (*Acinonyx*), lion (*Panthera*), saber-toothed cat (*Smilodon*), capybara (*Hydrochoerus*), dire wolf (*Canis dirus*), and numerous taxa of smaller mammals (Rodentia) (Cooper and Eisentraut, 2002; Jahns, 1954; Jefferson, 1991). Pleistocene older alluvium is considered to have moderate paleontological potential (PFYC 3) using BLM (2016) guidelines.

6.2 Paleontological Records Search Results

Paleo Solutions requested a paleontological search of records maintained by LACM. The museum responded that there were no localities within the Project area; however, there are fossil localities recorded in the Project

vicinity from similar Pleistocene-age alluvial deposits as those that likely occur at depth in the Project area (Bell, 2020; Appendix A). Locality LACM 7884, located east of the southeast corner of the intersection of East 3rd Street and East Avenue H-13, produced a fossil camel (*Camelops hesternus*) from a depth of 4 feet (Bell, 2020). Locality LACM 7853, located 7 miles northeast in the Lancaster Landfill, produced fossil fish, amphibians, reptiles, small mammals, and camel (Camelidae) from a depth of 3 to 11 feet (Bell, 2020). Locality LACM 5946, located 11 miles southeast at the intersection of East Avenue S and 90th Street East, produced fossil lizard (*Gambelia wislizenii*) from a depth of 0 to 9 feet (Bell, 2020). Locality LACM 5947, located 14 miles southeast on East Avenue S between 115th Street East and 121st Street East, produced fossil pocket gopher (*Thomomys* sp.) from a depth of 0 to 9 feet (Bell, 2020).

Upper Left: 118°9'4"W 34°39'44"N



Coordinate System: NAD 1983 2011 UTM Zone 11N

Figure 3. Project Geology Map.

7.0 IMPACTS TO PALEONTOLOGICAL RESOURCES

Impacts on paleontological resources can generally be classified as either direct, indirect, or cumulative. Direct adverse impacts on surface or subsurface paleontological resources are the result of destruction by breakage and crushing as the result of surface disturbing actions including construction excavations. In areas that contain paleontologically sensitive geologic units, ground disturbance has the potential to adversely impact surface and subsurface paleontological resources of scientific importance. Without mitigation, these fossils and the paleontological data they could provide if properly recovered and documented, could be adversely impacted (damaged or destroyed), rendering them permanently unavailable to science and society.

Indirect impacts typically include those effects which result from the continuing implementation of management decisions and resulting activities, including normal ongoing operations of facilities constructed within a given project area. They also occur as the result of the construction of new roads and trails in areas that were previously less accessible. This increases public access and therefore increases the likelihood of the loss of paleontological resources through vandalism and unlawful collecting. Human activities that increase erosion also cause indirect impacts to surface and subsurface fossils as the result of exposure, transport, weathering, and reburial.

Cumulative impacts can result from incrementally minor but collectively significant actions taking place over a period of time. The incremental loss of paleontological resources over time as a result of construction-related surface disturbance or vandalism and unlawful collection would represent a significant cumulative adverse impact because it would result in the destruction of non-renewable paleontological resources and the associated irretrievable loss of scientific information.

Excavations within the Project area that impact Pleistocene-age older alluvium beneath Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) may well result in an adverse direct impact on scientifically important paleontological resources. Surface grading or shallow excavations entirely within Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) in the Project area are unlikely to uncover significant fossil remains. However, these deposits may shallowly overlie older *in situ* sedimentary deposits. Therefore, grading and other earthmoving activities may potentially result in significant adverse direct impacts to paleontological resources throughout the entirety of the Project area.

No indirect or cumulative impacts are anticipated.

8.0 CONCLUSIONS AND RECOMMENDATIONS

There is potential for adverse direct impacts to scientifically significant paleontological resources within Pleistocene-age older alluvium if encountered in the subsurface beneath the Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf). Therefore, it is recommended that excavations in areas mapped as Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) be initially spot-checked during excavations that exceed depths of 5 feet to check for underlying, paleontologically sensitive Pleistocene-age older alluvium. If it is determined that only Holocene-age younger alluvial deposits (Qa, Qf, Qw, Qyf) (PFYC 2) is impacted, the monitoring program should be reduced or suspended. If Pleistocene-age older alluvium or paleontological resources are observed during spot-checking, then full-time monitoring should be implemented in those areas and a PRMTP should be prepared. Prior to the start of construction, a paleontological resources WEAP training should be presented to all earthmoving personnel to inform them of the possibility for buried resources and the procedures to follow in the event of fossil discoveries. Any subsurface bones or potential fossils that are unearthed during construction should be evaluated by a Qualified Paleontologist. Any fossils determined to be significant or potentially significant should be recovered, prepared, identified, analyzed, and curated at LACM, or another accredited fossil repository, along with copies of all associated field data.

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APPENDIX A

Natural History Museum of Los Angeles County Paleontological Record Search

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007
tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

10 August 2020

PaleoSolutions
911 S. Primrose Ave., Unit N.
Monrovia, CA 91016

Attn: Elisa Barrios; GIS specialist

re: Paleontological resources for the Tetra Tech: Antelope Valley Transit Authority Project

Dear Elisa:

I have conducted a thorough search of our paleontology collection records for locality and specimen data for the proposed development at the Tetra Tech: Antelope Valley Transit Authority Project, Los Angeles County, CA project area as outlined on the portions of the Lancaster West and Lancaster East USGS topographic quadrangle maps that you sent to me via e-mail on 7 August 2020. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 7884	E of the SE corner of the intersection of East 3rd Street & East Avenue H-13	Older alluvium	Camel (*Camelops hesternus*)	4 feet bgs
LACM VP 7853	Waste Management of North America Lancaster Landfill	Older alluvium	fish, amphibians, reptiles, small mammals, and camel (Camelidae)	3-11 feet bgs
LACM VP 5946	E Avenue S & 90th St E	Older alluvium	Lizard (*Gambelia wislizenii*)	0-3 m bgs
LACM VP 5947	E avenue S between 115 St E and 121 St E	Older alluvium	Pocket gopher (*Thomomys*)	0-3 m bgs

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

Excavations that into older Quaternary deposit may well encounter significant fossils. Any substantial excavations in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the records of the Natural History Museum of Los Angeles County. It is not intended to take the place of a thorough paleontological assessment of the proposed project area covering other institutional records, a literature review, or any potential on-site survey.

Sincerely,

Alyssa Bell

Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice