Environmental Assessment

Avellana Solar and Broadband Project

Apple Valley, California

U.S. Department of Agriculture
Rural Utilities Service (RUS)

Prepared by:

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Avellana Solar and Broadband Project
ENVIRONMENTAL ASSESSMENT

Prepared for

United States Department of Agriculture
Rural Utilities Service
1400 Independence Avenue, SW
Washington, DC 20250

Applicant
APREC
22099 US Highway 18
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ACRONYMS AND ABBREVIATIONS

AADT	annual average daily traffic
AC	alternating current
APE	Area of Potential Effect
APREC	Avellana Properties Rural Electric Cooperative
BLM	Bureau of Land Management
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNCCP	California Natural Community Conservation Plan
COUNTY	San Bernardino County
CFR	Code of Federal Regulations
CIAA	cumulative impact analysis area
CO	carbon monoxide
DC	direct current
dB	decibel
dBA	A-weighted decibels
DOC	California Department of Conservation
DWR	California Department of Water Resources
EA	environmental assessment
EIS	environmental impact statement
EMF	electromagnetic field
EPA	U.S. Environmental Protection Agency
EO	Executive Order
FEMA	Federal Emergency Management Agency
FONSI	finding of no significant impact
GHGs	greenhouse gasses
Hz	hertz
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronic Engineers
KOPS	key observation points
kV	kilovolt
mgd	million gallons per day

MPH	miles per hour
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen oxide
NO_x	nitrogen oxides
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O_3	ozone
O&M	operation and maintenance
OHWM	ordinary high-water mark
Pb	lead
$PM_{2.5}$	particulate matter smaller than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter smaller than 10 microns in aerodynamic diameter
ppm	parts per million
PV	photovoltaic
ROW	right-of-way
RUS	Rural Utilities Service
SCADA	Supervisory Control and Data Acquisition
SHPO	State Historic Preservation Office
SO_2	Sulfur Dioxide
State	State of California
SWPPP	Stormwater Pollution Prevention Plan
TDAT	Tribal Directory Assessment Tool
THPO	Tribal Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
V	Volt
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WQMP	Water Quality Management Plan

1.0 PURPOSE AND NEED FOR THE PROJECT

1.1 INTRODUCTION AND PROJECT DESCRIPTION

Avellana Properties Rural Electric Cooperative (APREC) plans to submit a loan application to the U.S. Department of Agriculture (USDA) Rural Development's Rural Utilities Service (RUS) to secure a direct loan to own and operate solar photovoltaic generation and distribution infrastructure and Broadband Internet-based services infrastructure for approximately 405 cooperative member homes and businesses in Apple Valley, San Bernadino County, CA. The Avellana Solar and Broadband Project (project) would be a 2.25 Megawatt (MW) solar power generating facility and Broadband service delivery network located approximately 5 miles east of Apple Valley, California.

The proposed project would cover approximately 44.92-acres of private land in an unincorporated area of San Bernardino County (See Figure 2.4-1 APREC Solar/Broadband Project Location) The Service Area consists of the area between Bear Valley Road and Las Piedras Road and between Circle 5 Road and Laguna Seca Drive. Solar project components would include solar arrays, inverters, 7.2 Megawatts (MW) of battery storage, associated switchgear, access roads, and a new distribution grid to supply power to members of the Avellana cooperative. Broadband Services project components would include an IP-based network headend with bandwidth aggregation, VPN-provisioning engine, and a Network Operations Center (NOC), as well as a community distribution grid, last mile optical termination, and home-based Internet of Things (IoT) with Ip-telephone sideband. Power and Broadband services will be distributed to 400 new cooperative-member homes, a medical/dental clinic, community center, convenience store, wastewater treatment plant, fire suppression system, and lighting grid. Lifespan of the solar and broadband project is expected to be 40 years.

APREC prepared this Environmental Assessment (EA) to support RUS's National Environmental Policy Act of 1969 (NEPA) review of the project. The purpose of this EA is to analyze and disclose the potential direct, indirect, and cumulative effects of building and operating the project. The analysis in this EA has taken place in accordance with NEPA (42 United States Code [USC] 4321 et seq.) and its implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508) as well as Rural Development's NEPA Regulations (7 CFR Part 1970—Environmental Policies and Procedures) and RD Instructions 1970-Subpart C.

This document provides information to the RUS decision-maker regarding any significant effects to consider in determining whether the project either requires preparation of an environmental impact statement (EIS) or if a finding of no significant impact (FONSI) is appropriate. Chapter 1 of this EA discusses the purpose of and need for the project (i.e., the proposed action); applicable laws, regulations, and plans; and the agency decision to be made. Chapter 2 discusses the proposed action in detail, as well as any alternatives to the proposed action and the alternatives development and evaluation process. Chapter 3 discusses the affected environment and analyzes the potential environmental effects that the proposed action and alternatives would have on the affected environment. Chapter 4 discusses the potential cumulative effects that the proposed action and alternatives would have on the affected environment, along with the effects of past, present, and reasonably foreseeable future actions. Chapter 5 summarizes all mitigation measures proposed for the alternatives. Chapter 6 summarizes public outreach and Tribal communications.

Based on the analysis contained in this document, RUS will determine whether to proceed with financing the project and whether the alternative that is selected will have a significant impact on the quality of the human environment. If, after circulating the document for public and agency comment, RUS finds the project will not have a significant impact on the quality of the human environment, a FONSI will be prepared. If at any point in the preparation of an EA, RUS determines the project will have a significant impact on the quality of the human environment, preparation of an EIS will be initiated.

1.2 PURPOSE AND NEED

Currently, remote areas of Apple Valley, which includes the APREC service area face an unstable and unreliable power grid that experiences frequent service outages for multiple days at a time. Frequent high winds and high temperatures exacerbate the problem by damaging powerlines, transformers, and power servicing equipment. Lack of electrical capacity results in power rationing for weeks at a time during the summer and winter months. The APREC cooperative community is dominated by elderly, often medically challenged persons, who are the least capable of withstanding these power outages. The community needs a highly reliable power source that is sustainably produced.

Of equal importance, the current source of the available electricity is either fossil-fuel based, or hydroelectrically generated by Colorado River operations at the Hoover Dam and transmitted hundreds of miles, resulting in energy losses. Currently, there is no renewable energy available within a 10-mile radius of the APREC Solar/Broadband project service area.

In addition, the cooperative lacks broadband internet access.

The purpose of the project is to generate and distribute sustainable solar-generated energy and Broadband Internet services to 400 cooperative homes, a community center, medical/dental clinic, convenience store, fire suppression system, wastewater treatment plant, streetlighting grid, and community security systems.

USDA Rural Development is a mission area that includes three federal agencies – Rural Business Cooperative Service, Rural Housing Service, and Rural Utilities Service (RUS). The agencies have over 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and Tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants to accomplish program objectives.

APREC is seeking federal financial assistance for the project from RUS under the Electric Infrastructure Loan program. The objective of this program is to finance the construction of electric distribution, transmission, and generation facilities, including system improvements and replacement required to furnish and improve electric service in rural areas, as well as demand side management, energy conservation programs, and on-grid and off-grid renewable energy systems. APREC is an IRS-recognized 501(c)(12) Cooperative.

1.3 AGENCY DECISIONS TO BE MADE

The proposed federal action is for RUS to decide whether to provide financial assistance to APREC for the project. Pursuant to NEPA; the National Historic Preservation Act of 1966 (NHPA), as amended; and Rural Development Environmental Policy and Procedures (7 CFR 1970), this EA has been prepared to evaluate the environmental impacts of the construction and operation of the project for RUS review. This EA does not contain the decision regarding the proposed action and no action alternatives.

1.4 BACKGROUND OF THE ENVIRONMENTAL DEVELOPMENT PROCESS

Environmental and sustainability considerations have been key project goals from the inception of this project and have driven most of the major design considerations of the Project's development. Before the project location was defined APREC met with each of the San Bernardino County (County) Planning departments to ensure that the spirit of sustainability and strictly maintaining a zero-carbon footprint, as a priority for the APREC community, for the project was compatible with County goals.

The County of San Bernardino launched a California Environmental Quality Act (CEQA) review of the project, which has included outreach to numerous local, state, tribal, and federal agencies to analyze the environmental impact of the project. As part of the CEQA analysis APREC consultants conducted environmental studies of 21 resources. References to these activities can be found throughout this EA.

These studies included outreach to and input from the local community, potentially affected tribal representatives, and each of the County departmental offices. Any comments or issues were addressed and integrated back into the project plan, which was formally submitted to SB County Planning in May 2021. After departmental and outside agency review was completed the County sent out complete updated project and proposed development plans to 34 neighbors and affected members of the community at large, which lead to additional comments that were integrated into subsequent updates. APREC believes that the County anticipates making a mitigated negative declaration consistent with no significant CEQA impacts by March 1, 2023.

2.0 PROJECT ALTERNATIVES

2.1 ALTERNATIVES DEVELOPMENT AND EVALUATION PROCESS

APREC began developing potential alternatives, which included project locations and power generation technologies, in 2019 during the early project planning and design phase. As a part of the alternatives development and evaluation process, APREC consulted with state regulators, engineering consultants, local landowners, and private citizens. During this public outreach process, APREC refined its plans for the proposed project. Those changes still allowed the project to meet its purpose and need for providing reliable, high-quality and sustainably generated energy to the local community.

The process involved the assessment of multiple options to ensure the advancement of optimal alternatives for detailed analysis. Proper siting of a solar generation facility requires substantial evaluation and assessment. Selection of a suitable project site was based on many factors, including:

- topography and terrain conditions,
- optimal solar exposure
- potential impacts to the human environment (e.g., sustainability, traffic, visual)
- proximity to the Avellana community
- land use plans and zoning laws,
- adjacent land use,
- suitable transportation infrastructure that can support traffic during the construction phase,
- absence of mapped flood zones,
- forested areas,

Based on the above criteria, the preferred site should

- be on a relatively level area,
- receive optimal solar irradiance levels,
- not impact local recreation opportunities,
- not disturb the viewshed,
- be near a highway or a well-established public road that can accommodate construction traffic,
- not be in a mapped flood zone, and
- be located as close to the APREC cooperative members as feasible.

During the public scoping process conducted for the CEQA and NEPA processes between 2019 and 2022, no members of the public, state and/or federal agencies, or Tribes proposed other site or technology alternatives.

2.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

During the initial planning phase APREC developed two additional project alternatives for consideration. A brief description of each and the rationale for their elimination follows.

2.2.1 Wind Generation

The Avellana community is focused on maximum sustainability and non-reliance on fossil-based fuels. Renewable technology is therefore required, and wind power technology was considered as an alternative.

Much of San Bernardino County, including the general area surrounding the project have policies and restrictions, such as SB County Policies 4.4, 5.7.1, LU 1.2, and D/CO 1.2 (County of San Bernardino, 2020), that have the potential to restrict wind power turbine location and operation, primarily for aesthetic reasons. Further, horizontal axis wind turbines generate substantial noise, typically up to 65 dBA at 100' from the base (Migliore, et al, 2012).

For these reasons, APREC eliminated wind power from further consideration.

2.2.2 Rabbit Dry Lakebed

Rabbit Dry Lakebed lies approximately nine (9) miles east of the proposed Avellana community. It was originally considered in what was initially believed to be a preferable site for the construction of the generation facility. The benefit of the Rabbit Dry Lakebed location was that it was even more remote than the current site, thus making it less visible from almost any vantage point.

Several problems existed with this location, including: its location in a FEMA-mapped Floodway, many Joshua trees, and had substantial issues with soil compaction. For these reasons the site was eliminated from further consideration.

2.2.3 Rationale for Eliminating Alternatives

A review of the alternatives to the proposed site and project plan was conducted to maximize the ability of APREC to deliver reliable power in the most environmentally sustainable and non-impactful method possible. As described above, two alternatives were developed but were eliminated based on their ability to conform with the criteria stated in Section 2.1. No other alternatives met the Section 2.1 criteria.

2.3 NO ACTION ALTERNATIVE

Under the No Action alternative, RUS would not provide financial assistance to APREC, and the Cooperative would not construct the proposed project. Renewable energy would not be sourced from the project area to help meet increasing demand for electricity and reduce the need for fossil fuels. Elderly residents would continue to be subjected to unreliable electric utilities that cost substantially more than the state average.

2.4 PROPOSED ACTION ALTERNATIVE

Under the Proposed Action Alternative, APREC would construct and operate a 2.25-Megawatt (MW) power–generating facility and 480-volt (V) distribution grid on 44.92 acres of vacant, privately-owned land 5 miles east of Apple Valley, California (Figure 2.4-1, Project Area). In addition, APREC would deliver IP-based Broadband Internet services throughout the project service area. In order to enhance security, to visually obscure generation infrastructure, and to reduce the possibility of any installation noise beyond the area borders a 6- block wall will be constructed around the entire PV generation facility.

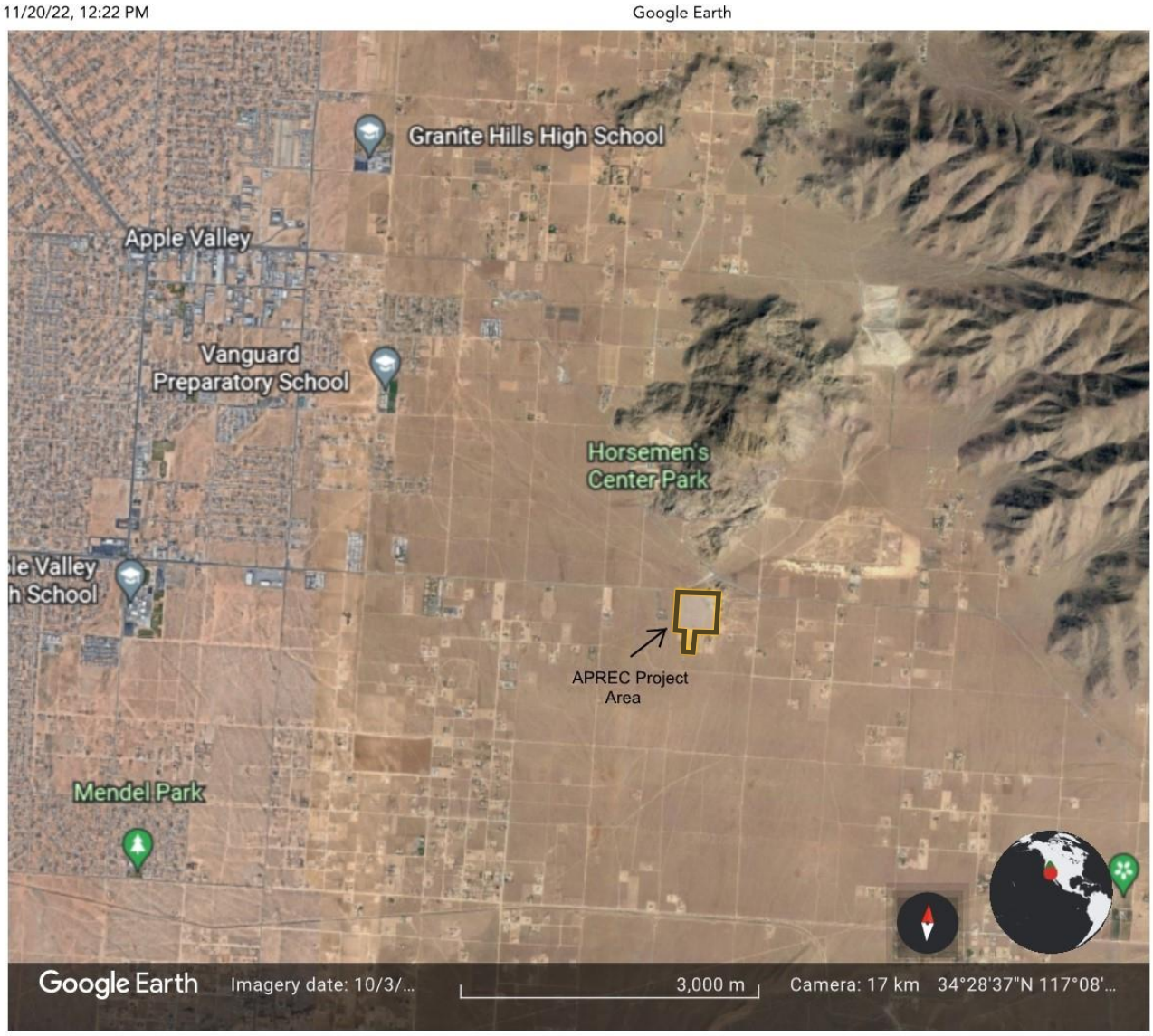

Figure 2.4-1 – Project Location

2.5 FACILITY

APREC has secured the proposed PV-installation site, obtained all easements, rights-of-way, and has completed the engineering and design phase for the electrical generation facility and electrical/broadband distribution grid. APREC jointly filed a Planned Unit Development (PUD) application with Avellana Properties, Inc, a private developer which was filed with the County of San Bernardino in May 2021.

The solar generation/operations facility would have a footprint of 4.72 acres on private land owned by APREC, with underground distribution to 400 new cooperative homes, a wastewater treatment plant, medical/dental clinic, community center, water treatment and distribution plant, fire suppression infrastructure, convenience store, and community lighting system located on the adjacent 40.2 acres. Total project area will be 44.92 acres.

Figure 2.5-1 details the proposed layout of the project electrical generation and distribution infrastructure overlaid upon the 44.92 acre project area.

Figure 2.5-1 Preliminary APREC Photovoltaic Generation & Distribution Layout (1:12000 Map Scale, Google Earth 2022)

2.5.1 General Power Generation Architecture

2.5.1.1 Photovoltaic Modules

The size of the array is based on the capacity of the equipment selected and is intended to generate the desired overall voltage and current output. The project would utilize approximately 5,000 mono-crystalline, bi-facial solar photovoltaic (PV) modules (Cheetah Plus HC 445-watt DC modules or similar) to convert energy from sunlight to direct current (DC) electricity. The modules would be matte black with minimal light reflection and would individually cover approximately 4 acres of land. Solar energy technologies continue to evolve at a rapid rate and as a result, the exact arrangement and nature of the PV systems will be determined during the final design and appropriate updates will be made prior to construction. The panels will be mounted on ruggedized fixed-tilt ground-mount brackets to ensure peak operating efficiency in the often very windy service area.

2.5.1.2 Conversion from DC to AC

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The panels will be aggregated in row-level combiner units and linked to 50kv inverters (22) where the power will be converted from DC to alternating current (AC). The inverters link directly to the Master Switch Board (MSB) where the power will be safely channeled as 3-phase 480V DC into the distribution grid via multiple 65kAIC (thousand amps interrupting capacity) channels.

The MSB will also control the Backup Electrical Storage System (BESS) via 2- 65kAIC channels that will bi-directionally control power flow for charging needs during the day and for discharging operation at night.

The PV system power rating will be 2,250,000W-DC/1,986,740W-AC-CEC and has been modeled to deliver 3,661,237kWh annually, as detailed in Figure 2.5-2 below:

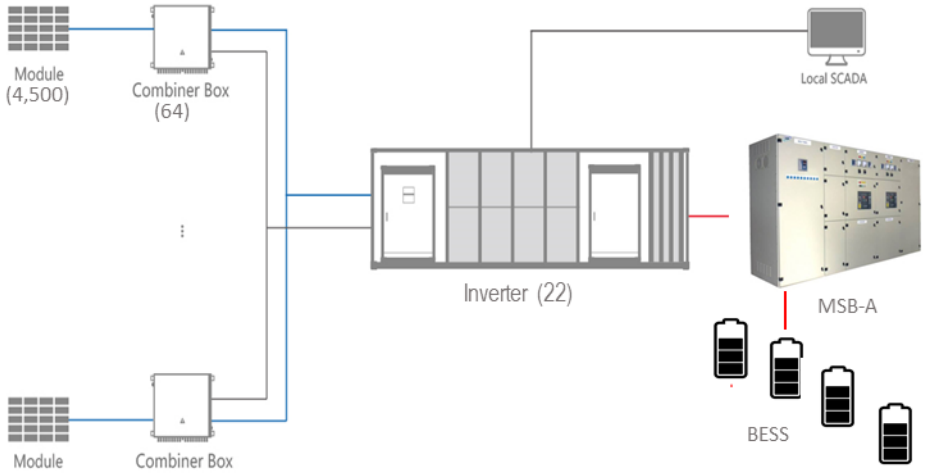


Figure 2.5-2 Project Power Generation and Storage Architecture

2.5.1.3 Backup Energy Storage System (BESS)

Within the Power Generation complex lies the BESS platform. The APREC BESS has been precisely dimensioned to deliver non-stop power regardless of time-of-day or night, atmospheric conditions, or abnormally large peak utilization.

The system consists of two environmentally controlled containers, each equipped with 1000kw/7200kWh energy storage banks.

AC power is fed into the banks via 65kaic channels from the MSB. Inside BESS AC is converted into DC to charge the system. Once fully charged the banks standby until needed. When called upon, the batteries begin to discharge by converting power to AC and passing it back into the MSB for distribution into the power grid.

A particularly powerful component of this design is that the system does not need to be overbuilt to account for occasional utilization spikes that drive peak loading. The BESS affords deep resources to absorb transient power requirements simply and easily. This allows APREC to dimension the system to much more closely resemble average utilization, thus saving its members reduced capital expenditures and on-going maintenance costs.

APREC will establish a 480vAC backup connection to a spur Edison power pole for additional fault-tolerance, as well as one or two backup 500KW diesel-fired generators in the event of catastrophic system failure. The generators will only be used in the event of a triple system failure and will be operated under emergency conditions-only exemptions detailed in Section 112 and Title V of the Federal Clean Air Act (CAA 88-206, 42 U.S.C. 7401 et seq). The generators will be permitted and operated under Mojave Desert Air Quality Management District Rule 1160(B)(2) with an “E” prefix permit number.

2.5.1.4 Distribution Grid

The demarcation point between the generation complex and distribution grid occurs within the switchgear of the MDB. Thirteen MDB 65kaic circuit breakers deliver 480V 3-phase power downstream to nine distribution nodes that in turn service forty-one 40kv transformers that further reduce that power down to single-phase 120V for service delivery. All primary and secondary distribution lines throughout the service area will be direct-buried aluminum URD cable. Underground secondary cables will serve as Service Drops to each individual home and will terminate at the service meter.

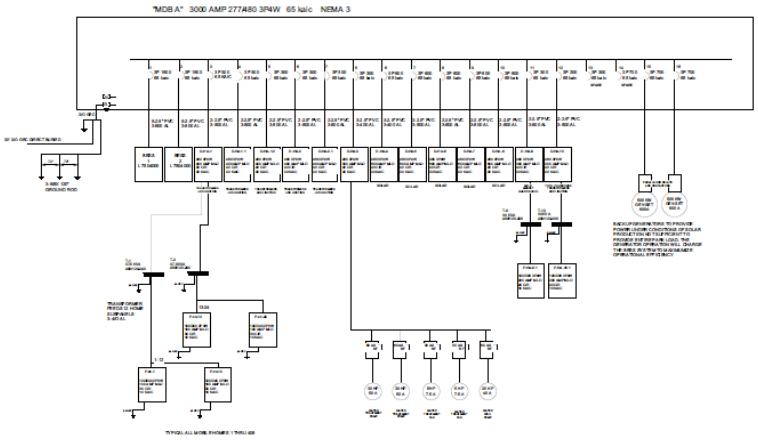


Figure 2.5-3 Power Distribution Grid

The area of ground disturbance for the distribution grid lies entirely within the 40.2-acre distribution grid area.

2.5.2 BROADBAND INFRASTRUCTURE

The Project area currently has no Internet infrastructure or Broadband service network. APREC would provision a suite of Internet-based services to the members of the cooperative.

Architecturally, ISP-bandwidth will be received via a 20' tall tower or smaller footprint satellite receiver(s) that will serve as the network headend. Bulk bandwidth will be terminated within the Network Operations Center (NOC) and separated into approximately 450 discrete Virtual Private Network (VPN) channels via the Graphical User Interface (GUI) service provisioning engine. Optical fiber cables will be placed underground via primary aggregated trunk lines that terminate in 25 neighborhood pedestals. Individual homes will be serviced via optical secondary cables that terminate at home Internet of Things (IoT) terminals.

Each home will be provided with a wireless enabled IP-based telephone, a basic 10/2 Internet package, and SeniorAlert, a smart home safety application that alerts the NOC in the event of an in-home emergency.

2.5.3 ADDITIONAL INFRASTRUCTURE

Installation support infrastructure includes:

- **Service Access Roads**
  Several roads within the 44.92-acre project area will be constructed to provide service access to the PV array and power and internet service grids.
- **Perimeter Security Wall & Access Control system**
  The APREC electrical system is a critical asset that must be protected from tampering, particularly given its location in a very rural area.
- **Fire Suppression System**
  The APREC service territory is in an unincorporated rural area in San Bernardino County, California and is not serviced by a local fire department. The San Bernardino County Planning Department has determined that APREC will need to provide substantially more fire suppression equipment and resources than a similar facility located within the city limits.

  APREC will need to procure its own water supply and provide enough stored water on-site to meet the local fire regulations. The most economically viable alternative is for APREC to dig a well on the property and establish a 750,000-gallon storage pond. The pond will provide the water source for fire hydrants & support equipment. Additional components of the fire suppression system will include pumps, underground pipes, and control and alarm systems.
- **Water Well and Reservoir**
  The water well is a necessary component of the Fire Suppression system above.
- **Control Building/NOC**
  APREC will need to construct a command-and-control building which will house all the functions necessary to support power generation, operations and maintenance of the generation and distribution systems, customer support, billing, planning, and administration.
- **Lighting System**
  The APREC service territory is in an area where there are no streetlights or municipal lighting. APREC will construct a lighting system that will provide adequate lighting at all times and provide a safe, reliable environment for 24-hour system operation.

Within the project site, new roads will be constructed using 100% post-consumer inter-locking grid panels placed over 4" road base. Access roads will service the PV array perimeter; access onsite facilities, switchgear, O&M structures; and will act as a local and service roadway network as part of the project.

2.5.4 CONSTRUCTION

Construction is expected to take 10 months from commencement. Construction and operation activities would be restricted to the 44.92-acre project area. During construction, the total number of personnel on-site may range from 15 to 80 employees. APREC would use local labor to the extent possible. When local labor is unavailable, APREC would bring in employees from other surrounding areas. Personnel would include preconstruction survey crews, grading equipment, and employees from various construction trades.

Site preparation and fencing would commence first, and work would then be contained within the fenced areas during project construction.

APREC would establish temporary areas within the project area for parking; staging; laydown; and material,equipment, and trailer storage to facilitate construction activities. The subject property is almost entirely flat and as such will require minimal grading.

Personnel would use water for dust control, specifically an estimated 0.0004 to 0.0005 million gallons per day (mgd) or approximately 85,000 +/- gallons for the duration of construction. APREC has secured an agreement from the neighboring property to the east to use water from their well for all construction needs.

Crews would assemble and erect solar arrays at the site. The mounting brackets would be delivered and assembled at the site. Support poles for the mounting brackets and other structures would consist of galvanized steel H-piles driven directly into native soil; the solar arrays do not require concrete foundations. Personnel would use on-project site roads to access off-loading and assembly areas.

Electrical distribution infrastructure would be installed via underground trenching that would allow broadband Internet service delivery equipment to be laid in the same trenches. Neighborhood transformers and equipment pedestals would be constructed at the same time.

Personnel would bury AC/DC distribution system cables for each circuit either in trenches or string them above ground below the solar array brackets. Such trenches are typically 24 to 44 inches wide and 36 to 48 inches deep. In locations where two or more sets of underground lines converge, workers would install underground vaults and/or pad-mounted switch panels to tie the lines together into one or more sets of larger feeder conductors.

Steel-copper ground rods would be driven into the ground at key locations and bonded to the ground grid. Concrete foundations may be used for switchgear equipment.

The control room, fire control system, reservoir pond, and other associated infrastructure will be constructed per Title 24 California State Building Codes and environmental regulations imposed by San Bernardino County and the State of California.

After construction, personnel would calibrate and test systems, controls, and safety equipment before putting them into service. Qualified mechanical technicians and electricians would test and inspect the solar components, transformers, communications systems, switchgear systems, and interconnection systems to ensure that they comply with required specifications and are functioning properly.

2.5.5 OPERATIONS AND MAINTENANCE

The site would feature an onsite O&M facility that will be environmentally conditioned for supervisory control and data acquisition (SCADA), switchgear, and computer components. This facility will feature workstations for technicians working on the project site, be air conditioned, and incorporate a functioning restroom. Internet service provisioning will require network management, billing, and service, which will all be based within the O&M facility.

APREC anticipates the need for two full-time staff members for repairing or replacing project components, general maintenance, and repairing access roads. Maintenance may also include emergency repair or vegetation management, such as mowing vegetation around the bases of the solar arrays.

As such, after construction, traffic would be limited to mostly light vehicles (e.g., pick-up trucks) based on the site for maintenance. Electric vehicles will be strongly preferred.

APREC expects the facility to operate for 40 years from the date on which commercial operation begins.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 provides descriptions of the existing environmental conditions of the areas that may be impacted by the proposed action and no action alternatives for the following resources: Land Use, Floodplains, Wetlands, Water Resources, Biological Resources, Aesthetics, Air Quality, Environmental Justice, Other Miscellaneous Resources, Health and Human Safety, and Cumulative Effects. Federal, state, and local regulations that apply to managing these resources are also discussed in the context of the existing environment.

3.1 LAND USE

3.1.1 General

3.1.1.1 AFFECTED ENVIRONMENT

The analysis area for assessing potential impacts to land use is the 44.92-acre project area. This analysis area is used because it comprises the land that would be directly affected by the proposed solar facility, electrical distribution grid, and associated support infrastructure. Almost all 44.92 acres of the project area would be disturbed during construction and all 44.92 acres would be affected as part of operations of the solar facility and electrical/internet distribution grid. Bear Valley Road, which is a Major Arterial Highway as shown on the San Bernardino Countywide Policy Plan (County of San Bernardino, 2018), runs east west along the northern border of the project area. Las Piedras Road, a dirt road which is not county maintained, runs east-west along the southern border of the project area.

The project area is generally located in the northeastern portion of Section 6, Township 4 North, Range 2 West and is depicted on the Apple Valley South U. S. Geological Survey's (USGS) 7.5-minute topographic map. The project site is specifically located on 24550/24543 Las Piedras Road, south of Bear Valley Road, and east of Circle 5 Ranch Road, in the unincorporated area of San Bernardino County. See Figure 3-1.

Table 3.1-1 lists the existing adjacent land uses and zoning districts within 300-foot:

Existing Land Use and Land Use Zoning		
Location	**Existing Land Use**	**Land Use Zoning District**
Project Site	AV/RL Apple Valley Rural Living 2.5	AV/RL Apple Valley Rural Living 5ac
North	Apple Valley Rural Living	AV/RL-5
South	Apple Valley Rural Living	AV/RL-5
East	Apple Valley Commercial General	AV/CG
West	Apple Valley Rural Living	AV/RL

Table 3.1-1 Existing Land Uses & Zoning

The San Bernardino County Policy Plan (County of San Bernardino, 2018) land use designations of the properties surrounding and immediately adjacent to the Project site are AV/RL to the north, AV/RL to the west and south and CG - Commercial General to the east, and all are predominately vacant.

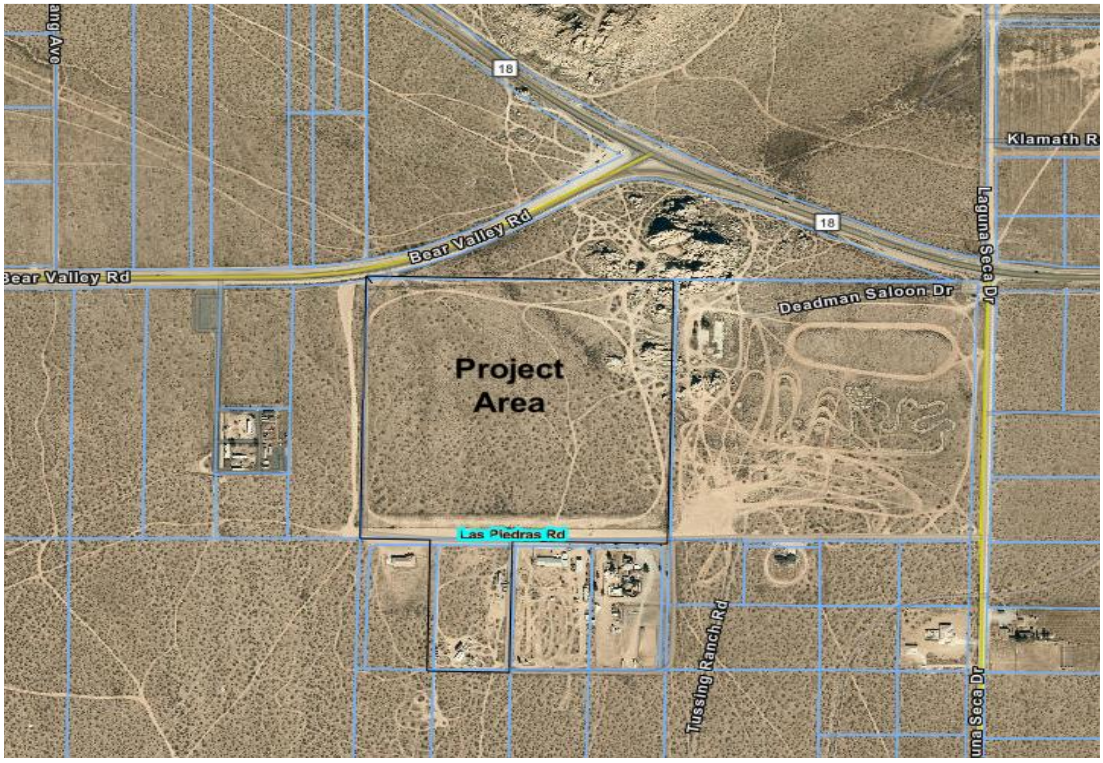


Figure 3.1-1 APREC Solar/Broadband Project Area

The 40.2 acre northern project area is currently vacant mildly undisturbed land. The 4.72-acre southern project site is located to the south of the 40.2 acre site and is vacant as well. According to the Geotechnical Report, most of the Site slopes gently downward to the north but small hills are situated within/adjacent to the northeast corner of the site. The site elevation ranges between 3025' and 3040' above msl. See Appendix A - Land Use.

3.1.1.2 Environmental Consequences

3.1.1.2.1 NO ACTION

The no action alternative would not impact land use. The existing land use in the analysis area (rural living) would continue.

3.1.1.2.2 PROPOSED ACTION

The project Site is designated AV/RL 5 by the County of San Bernardino General Plan which allows for the proposed Solar Power generation plant and service delivery to cooperative members with a Conditional Use Permit (CUP). The Cooperative Community (which is also a permitted use with a CUP) proposes incidental service uses of onsite First Aid Center, a Community Center, Park/detention basin, Pond for reclaimed water storage for fire suppression and landscaping irrigation, and Wellness Convenience Shop to serve the Cooperative. The Development Code provides for a Planned Development (PD) Permit for which APREC has applied.

The CUP and the requested PD is not anticipated to result in conflicts with applicable land use plans and therefore, no impacts are identified or are anticipated.

3.1.1.3 Mitigation

No mitigation measures are required or proposed for land use.

3.1.2 Important Farmland

3.1.2.1 Affected Environment

The analysis area for assessing potential impacts to important farmland is the 44.92-acre project area (See Figure 3.1-2). Areas that have been designated as "prime and unique farmland" or "farmland of statewide or local importance" by the California Department of Conservation (DOC), Division of Land Resource Protection (DLRP) and the Natural Resources Conservation Service (NRCS) are considered important farmland.

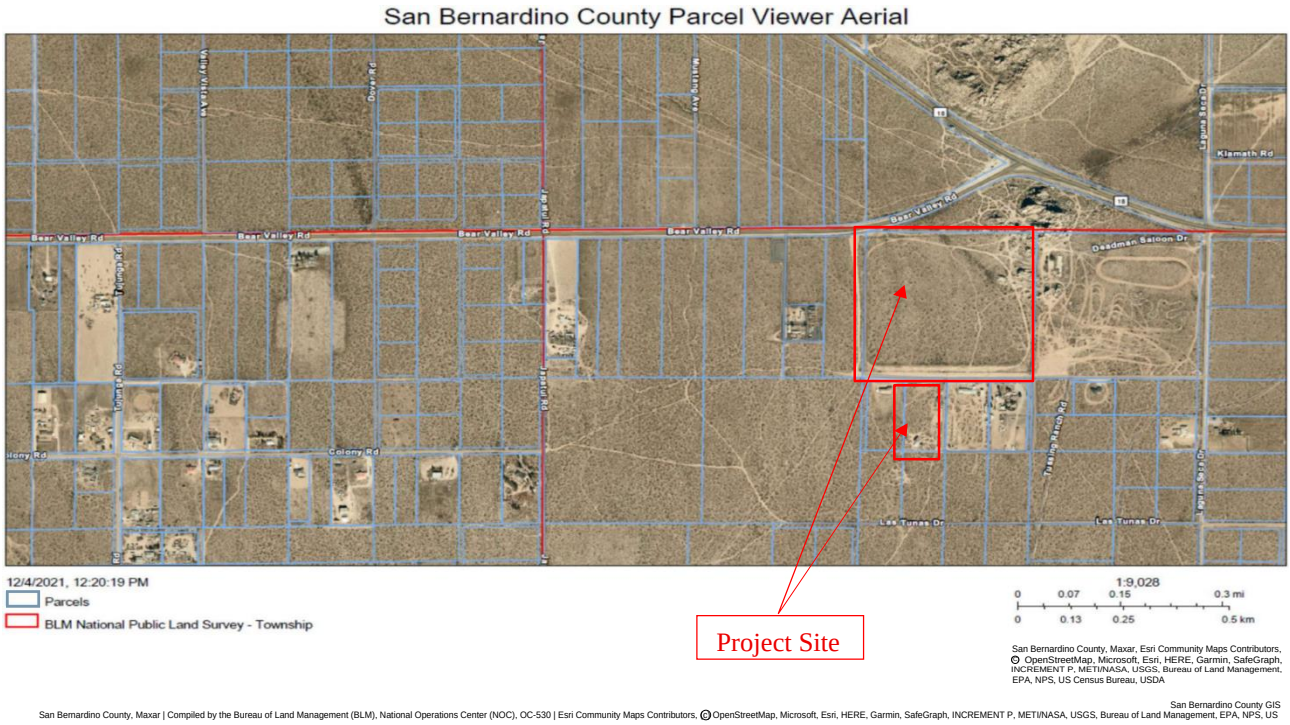


Figure 3.1-2 Project Analysis Area

The DLRP Web-based Important Farmland data survey tool integrates the NRCS's Gridded Soil Survey tool, SSURGO (SSURGO Web-based Soil Study tool, 2021), and was used to determine whether important farmland exists in the analysis area. No Important Farmland was located within the project area. The NRCS was also contacted directly during the public scoping process and no response was received from the NRCS regarding any project concerns.

According to the DOC Web Soil Survey tool, no portions of the analysis area are designated as important farmland (California Department of Conservation, Farmland Mapping & Monitoring Program, 2022). The entire 44.92 acres of the analysis area are marked as "Other Land," meaning that the DOC/NRCS classified the project area as "Land not included in any other mapping category". The San Bernardino County Map of Important Farmland (San Bernardino County Important Farmland 2018) classifies the project area as "Other Land".

No prime farmland, unique farmland, or farmland of statewide importance occurs at the project site or within the immediate vicinity. See Appendix A – Land Use for additional documentation.

3.1.2.2 Environmental Consequences

3.1.2.2.1 NO ACTION

The no action alternative would not impact any important farmland. No development would occur as the project would not be built.

3.1.2.2.2 PROPOSED ACTION

The proposed action would not result in the conversion of important farmland because the analysis area does not contain any designated important farmland. Therefore, no direct or indirect impacts to important farmland would occur.

3.1.2.3 Mitigation

No mitigation measures are proposed for important farmland.

3.1.3 Formally Classified Lands

3.1.3.1 Affected Environment

The analysis area for assessing potential impacts to formally classified lands is the 44.92-acre project area. Formally classified lands are areas that have received special protection through formal legislative designations and are administered by federal, state, or local agencies; Tribes; or private parties. Formally classified lands include national parks and monuments; national forests and grasslands; national historic landmarks; national wildlife refuges; wilderness areas; wild, scenic, and recreational rivers; state parks; and Native American–owned lands. The mapping systems of various federal and state agencies indicate that the analysis area does not contain any formally classified lands.

3.1.3.2 Environmental Consequences

3.1.3.2.1 NO ACTION

The no action alternative would not impact any formally classified lands.

3.1.3.2.2 PROPOSED ACTION

The proposed action would not directly or indirectly impact any formally classified lands because the analysis area does not contain any formally classified lands.

3.1.3.3 Mitigation

No mitigation measures are proposed for formally classified lands.

3.2 FLOODPLAINS

3.2.1 Affected Environment

A floodplain is defined as a low-lying area adjoining a river or body of water that is subject to periodic flooding. Floodplains provide risk reduction benefits such as storing flood water and slowing runoff as well as environmental value such as erosion control, groundwater recharge, and fish and wildlife habitat protection (Federal Emergency Management Agency [FEMA] 2020). A 100-year floodplain, or Special Flood Hazard Area, is defined as an area with a 1 percent probability of flooding in a given year, and a 500-year floodplain is an area with a 0.2 percent probability of flooding in a given year (FEMA 2020).

Compliance with Executive Order (EO) 11988 Floodplain Management requires project development evaluation to ensure that federal agencies "avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and avoid direct or indirect support of floodplain development wherever there is a practicable alternative". No rivers or bodies of water are located within 5 miles of the project area and no Critical Facilities will be located in the project area.

The analysis area for floodplains is the entire 44.92-acre project area. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel 06071C6510H effective August 28, 2008 (Figure 3.2-1), is the currently effective FIRM indicates no floodplains are mapped within or adjacent to the project area.

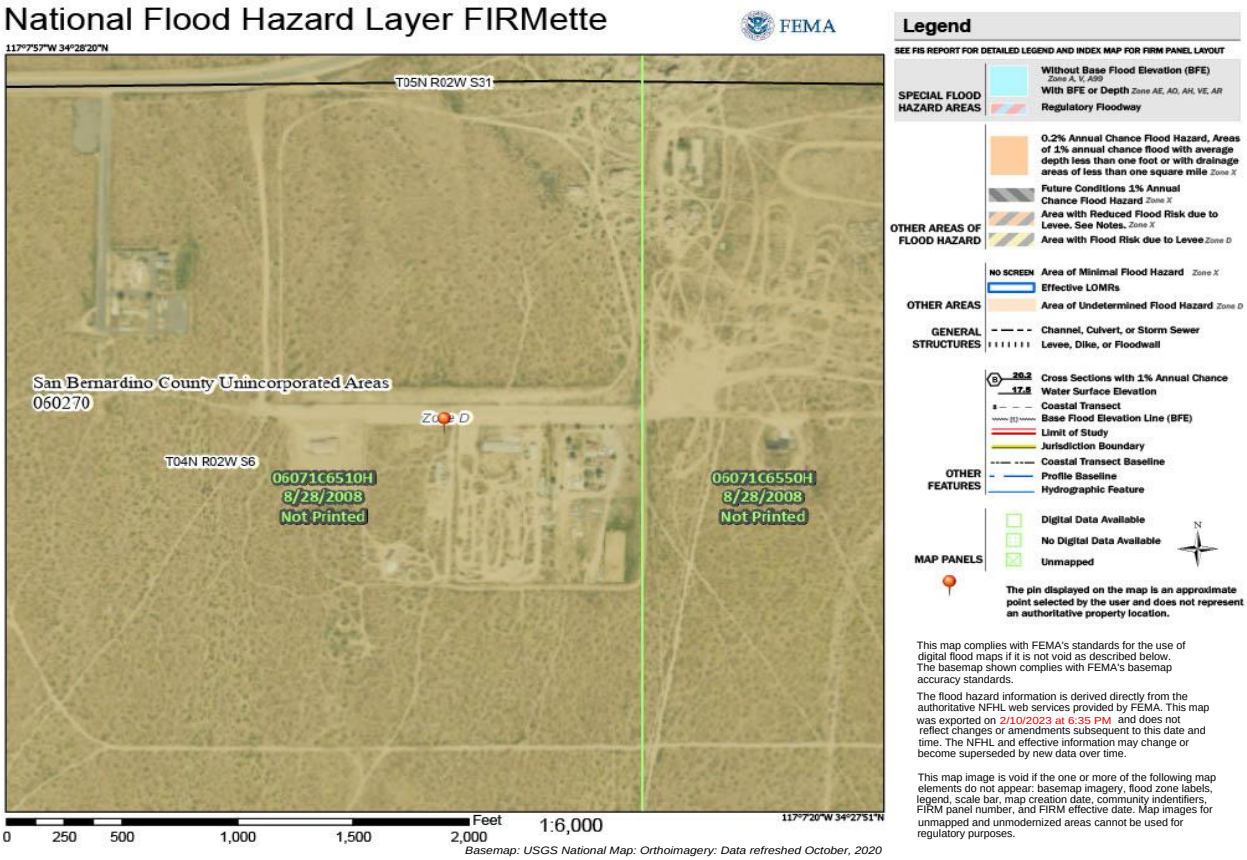


Figure 3.2-1 Project Area FEMA Flood Map

The project area is not located in a Special Flood Hazard Area or Other Area of Flood Hazard, but is designated as "Zone D", an area that is undetermined for flooding risk. Zone D does not indicate there is no risk. Rather, it means the risk of flooding is unknown. See Appendix A – Land Use.

3.2.2 Environmental Consequences

3.2.2.1 NO ACTION

The no action alternative would not impact any floodplains or affect any flood zones. No development would occur in the project area; therefore, there would be no activities that would impact floodplains or flood zones downstream of the analysis area.

3.2.2.2 PROPOSED ACTION

The proposed action would not take place within any FEMA-designated floodplain The analysis area is not directly connected to floodplains or floodway passages, and therefore the proposed action would result in no direct or indirect impacts to floodplains.

3.2.3 Mitigation

No mitigation is required for the project.

3.3 WETLANDS

3.3.1 Affected Environment

The analysis area for wetlands is the 44.92-acre project area. The wetlands and waters of the U.S. discussed in this EA are aquatic resources that are regulated by the U.S. Army Corps of Engineers (USACE) under the Clean Water Act. During the project's CEQA scoping period, the USACE was consulted about a nearby former installation and regarding any potential jurisdictional waters, including wetlands. No wetlands or hydric soils were identified during this process and no comments were given.

The U.S. Fish and Wildlife Service's (USFWS's) National Wetlands Inventory (NWI) indicates no areas of interest (USFWS National Wetlands Inventory Project Mapper, 2022), no USFWS-managed lands, nor any current or historic wetlands in the project area or surrounding areas.

On-site property inspection by RCA Associates confirmed the absence of wetlands and riparian habitat within the project area. See Appendix B – Biological Resources.

3.3.2 Environmental Consequences

3.3.2.1 NO ACTION

The no action alternative would not impact any wetlands.

3.3.2.2 PROPOSED ACTION

The proposed action alternative would not impact any wetlands because the analysis area does not contain any wetlands or other potential waters of the U.S.

3.3.3 Mitigation

No mitigation measures are proposed for wetlands.

3.4 WATER RESOURCES

3.4.1 Affected Environment

This section provides an overview of the water resources of the project area and addresses water quantity and quality issues related to discharges to or appropriations from surface or groundwater, groundwater protection programs (e.g., programs that protect sole source aquifers and recharge areas), and water quality degradation from temporary construction activities. Water quality and quantity changes can impact other environmental resources including groundwater and drinking water supplies, threatened and endangered species, other fish and wildlife species, and wetlands.

The project area straddles a ridge line that divides two off-site tributary watershed flows. Area A on the east consists of a 108.4-acre water shed that flows through the project site. Area B on the west consists of a smaller narrow 22.3-acre water shed that once entering the project site travels along the western edge eventually exiting west the site at the northwest corner. For the assessment of environmental consequences to water resources as a result of the proposed action, the analysis area is defined as both the Area A and B watersheds. Within the analysis area and in the surrounding areas there are no streams or waterways.

Although the project area is located at the extreme eastern boundary of the Golden State Water Company (Nearest water purveyor) service map no waterlines are currently deployed within 3 miles to service the property. No utility water is currently available within the project area and wells will be required to service fire suppression, maintenance, and consumption needs. See Appendix C – Water Resources.

3.4.1.1 Surface Water

No surface water exists within the project area or on adjacent properties.

3.4.1.2 Water Quality

The project area is located within the Upper Mojave River Valley Groundwater Basin (see Appendix C – Water Resources) which is managed by the Mojave Water Agency (MWA). All water consumed within the area is pumped from groundwater wells and treated to remove sediments and potential harmful components. Within this area, San Bernardino County Service Area 64 (CSA 64) delivers over 4,000-acre feet of water to over 10,000 service connections. Golden State Water Company, the local water purveyor, provides service to customers in more remote areas, which currently does not extend to the project area. No water purveyor currently services the project area.

3.4.1.3 Groundwater

The Mojave Groundwater basin covers approximately 2,100 square miles, is principally recharged by the Mojave River, and is divided into several subbasins. The project area lies within the Alto Subbasin. The project area is currently zoned RL-5 (Rural Living with 5-acre minimum parcel size), which includes a well as a permitted use. The project area does not contain any sole source aquifers, recharge zones, or groundwater protection areas.

3.4.2 Environmental Consequences

3.4.2.1 NO ACTION

3.4.2.1.1 Surface Water

The no action alternative would not impact any surface water. No intermittent drainages or natural drainage patterns would be disturbed as none exist within the project area.

3.4.2.1.2 Water Quality

The no action alternative would not impact water quality. Under the no action alternative, there would be no project-related changes that would impact water quality.

3.4.2.1.3 Groundwater

The no action alternative would not impact any groundwater. Groundwater conditions would remain unchanged and there would be no use of groundwater in the project area.

3.4.2.2 PROPOSED ACTION

3.4.2.2.1 Surface Water

Under the proposed action, an estimated 85,000 gallons of water would be required for dust control, soil compaction, and other development requirements during construction. Personnel would discharge such water slowly and over a large area to minimize any potential for accumulation of surface runoff.

Operation and Maintenance (O&M) of the solar facility and distribution grid, Broadband services infrastructure, fire suppression system, and associated infrastructure will require substantial water usage, 100% of which will be water recycled from the on-site wastewater treatment plant. O&M would require up to 200,000 gallons of water per year plus the fire control system will require maintaining at least 225,000 gallons of water at any time in the storage pond. Treated wastewater will be pumped into the storage pond providing constant aquifer recharge. All water treatment and discharge components, including the storage pond, will be permitted and operated under State Waste Resources Control Board Order WQ 2014-0153-DWQ. Personnel would use recycled water for vegetation management and cleaning the solar panels regularly. Best Management Practices including erosion, stormwater, and pollution control measures would be implemented in accordance with the project's Storm Water Pollution Protection Program (SWPPP) permit prior to ground disturbing activities.

Although no surface water is present within the project area or surrounding area, storm-related surface water will be routed to drainage channels via 8" curbs placed along Las Piedras Road and Jackie Jane Lane to a 53,302 cubic foot detention basin. No direct or indirect impacts are anticipated from the proposed action.

3.4.2.2.2 Water Quality

APREC has submitted a detailed Water Quality Management Plan (WQMP) to San Bernardino County Planning, Land Development Division that details the plan to implement environmental and water quality control standards based upon the National Pollutant Discharge Elimination System (NPDES) program. This stormwater management program is mandated by the Federal Clean Water Act and is implemented by the State Water Resources Control Board. The primary goal of the NPDES Program is to prevent pollutants from entering lakes, streams, rivers, and oceans through stormwater runoff.

The 10-month construction period will implement strict dust control, erosion, and construction best management practices to minimize any impacts caused by ground disturbing activities (e.g., grading trenching, burying, and installing infrastructure) as part of the proposed action in line with guidance and requirements of San Bernardino County's NPDES MS-4 permit.

Post-construction, the project WQMP details the operational aspects of APREC's SWPPP policies and procedures and ensures that on-site activities will prevent pollutants from existing within or being carried out of the project area to any distant surface water. The project WQMP establishes controls for post-development Hydrology based upon performance criteria specified in Section E.12.e.ii.c and Section E.12.f of the Phase II Small MS-4 permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), runoff volume, time of concentration, and peak runoff for protection from hydromodification. As a result of these controls, no direct or indirect impacts are anticipated because of the proposed action.

3.4.2.2.3 Groundwater

Under the proposed action APREC will drill a well and the water will be treated to provide potable water for maintenance, consumption, and to charge the fire suppression system within the project area. The well will be dug to a depth of approximately 350-375' and anticipates using an 8" reinforced cement casing, inline pump, and a protective well-head located in a small pump house. APREC will be required to participate in a state-regulated treatment and quality-control program.

To ensure the most judicious use of all water resources and to maintain the quality of the local aquifer all water produced and consumed on-site will be treated at and discharged by the on-site local agency-regulated wastewater treatment plant under State Water Resources Control Board General Order # WQ2014-0153-DWQ. As a result, no direct or indirect impacts are anticipated to groundwater resources because of the proposed action.

3.4.3 Mitigation

While no direct or indirect impacts are anticipated as a result of the project, APREC is required to prepare a Stormwater Pollution Prevention Plan (SWPPP) in part to meet County NPDES MS4 requirements. The plan would serve as an erosion, stormwater, and sediment control plan during construction and operation.

3.5 COASTAL RESOURCES

The Coastal Zone Management Act of 1972, as amended (CZMA), applies to all lands on the boundary of any ocean or tributary thereof, and the Great Lakes. The CZMA requires federal actions that are reasonably likely to affect any land or water use or natural resource in a coastal zone be consistent with the enforceable policies of a coastal state's or territory's federally approved coastal management program.

The project area is located in San Bernardino County and is not within the defined coastal zone boundary for California (California Coastal Commission 2022).

3.6 BIOLOGICAL RESOURCES

3.6.1 General Fish, Wildlife, and Vegetation Resources

3.6.1.1 Affected Environment

On January 5, 2021 RCA Associates, Inc., prepared a General Biological Resources Assessment for the Project. The report is included in Appendix B – Biological Resources and is summarized herein.

The 44.92-acre site supports a moderately disturbed desert scrub community that consists of native desert vegetation. The property supports a creosote bush desert scrub community consisting of creosote bush (*Larrea tridentata*), pencil cholla (*Cylindropuntia ramosissima*), rubber rabbitbrush (*Ericameria nauseosa*), paper bag plant (*Salazaria mexicana),* cliff goldenbush (*Ericameria cuneata*), Nevada joint-fir (*Ephedra nevadensis*), and one Joshua tree (*Yucca brevifolia*).

As part of the environmental process, California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) data sources were reviewed and an USFWS IPaC report was issued indicating that no critical habitats were located within the project area. See APREC Appendix J – IPaC Report. Following the data review, surveys were performed on the site on January 4, 2021, during which the biological resources on the site and in the surrounding areas were documented by biologists from RCA Associates, Inc. As part of the surveys, the property and adjoining areas were evaluated for the presence of native habitats which may support populations of sensitive wildlife species.

The property was also evaluated for the presence of sensitive habitats including wetlands, vernal pools, riparian habitats, and other waters of the U.S. Habitat assessments were also conducted for the desert tortoise, burrowing owl, and Mojave ground squirrel based upon data from USFWS, CDFW, and a search of the California Natural Diversity Database (CNDDB, 2021). Scientific nomenclature for this report is based on the following references: Hickman (1993), Munz (1974), Stebbins (2003), Sibley (2000) and Whitaker (1980).

Only a few wildlife species were observed during the field investigations. One mammal was seen during the survey, the antelope ground squirrel (*Ammospermophilus leucurus*), and although not seen, coyote (*Canis latrans*) scat was identified throughout the property.

Birds observed included common ravens (*Corvus corax*), house finch (*Carpodacus mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*), Says Phoebe (*Sayornis saya*), rock wren (*Salpinctes obsoletus*), black-throated sparrow (*Amphispiza bilineata*), and rock pigeon (*Columba livia*).

No reptiles were observed during the survey due to weather conditions, but those that may occur include desert spiny lizard (*Sceloporus magister*), side-blotched lizard (*Uta stansburiana*), and western whiptail lizard (*Cnemidophorus tigris*).

In addition, no sensitive habitats (e.g., sensitive species, critical habitats, etc.) have been documented in the immediate area according to the CNDDB (2020) and none were observed during the field investigations (CDFW CNCCP 2020). The Biological Assessment concluded that no distinct wildlife corridors were identified on the site or in the immediate area.

No sensitive habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations. There is no riparian vegetation on or in the adjacent habitats.

Other species which may be present according to CDFW include Desert Tortoise (see Section 3.6.2 for additional details), Mohave Ground Squirrel, Burrowing Owl, Le Conte's thrasher, and protected plants, specifically the Western Joshua Tree. No wildlife species were observed during the January 2021 site visit. The Biological Assessment reported that one Western Joshua Tree was observed onsite during RCA's January 4, 2021 field investigation located among the elevated rocky outcroppings to the northeast. The tree is located in an area within the project area that will be undisturbed and outside of the area of project operations.

The project area is located within documented burrowing owl habitat according to CNDDB (2021) and does support suitable habitat for the species. Several suitable (i.e., occupiable) burrows were located during the January 2021 field investigations, but no owls or owl sign (e.g., white wash, castings etc.) was observed at the mouth of the burrows or on the property during the survey.

Le Conte's thrashers have not been recently observed in the project area according to CNDDB (2021). Thrashers are not expected to occur on the site due to lack of critical vegetation used by the species, such as saltbush and catclaw acacia. Thrashers may be very infrequent in the area given the low population levels in the region as well as the lack of any recent sightings according to the CNDDB. No riparian vegetation (e.g., cottonwoods, willows, etc.) exist on the site or in the adjacent habitats.

3.6.1.2 Environmental Consequences

3.6.1.2.1 NO ACTION

The no action alternative would not impact general fish, wildlife, and vegetation resources. The habitat would not be altered, and current land use would continue.

3.6.1.2.2 PROPOSED ACTION

Development of the project area will have minimal impact on the general biological resources present. Wildlife may also be impacted by development activities and those species with limited mobility (i.e., small mammals and reptiles) will experience increases in mortality during the construction phase. However, more mobile species (i.e., birds, large mammals) will be displaced into adjacent areas and will likely experience minimal impacts. Therefore, loss of about 44.92-acres of heavily disturbed desert scrub vegetation is not expected to have impacts on the overall biological resources in the region given the presence of similar habitat throughout the surrounding area.

No sensitive habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations. No impacts are anticipated to the Western Joshua Tree as it is in an area that will be undisturbed and outside of the area of project operations.

3.6.1.3 Mitigation

No mitigation to General Fish, Wildlife, and Vegetation Resources are required.

3.6.2 Endangered Species Act-listed Threatened and Endangered Species

3.6.2.1 Affected Environment

The analysis area for ESA-listed species is the 44.92-acre project area. The following are the listed and special status species that have the ability to occur on the project site. This information has been taken from the California Natural Diversity Database (CNDDB) and the U.S. Fish and Wildlife Service IPaC database (see IPaC Report, Appendix B).

3.6.2.1.1 Federal Listed Species

Desert Tortoise
The desert tortoise (*Gopherus agassizii*) is a federally threatened species (USFWS, 1990. Final critical habitat has been identified for the species however the IPaC report indicates the project area does not overlap the critical habitat. However, the project area does support habitat for the desert tortoise based on the field investigations. No tortoises were observed anywhere within the property boundaries during the January 4, 2021 surveys. The protocol survey results are valid for one year as per CDFW and USFWS requirements.

Least Bell's Vireo
The Least Bell's Vireo (*Vireo bellii pusillus*) is a federally endangered species (USFWS, 1986). Final critical habitat has been identified for the species however the IPaC report indicates the project area does not overlap the critical habitat. No Vireos were observed anywhere within the property boundaries during the January 4, 2021 surveys.

Southwestern Willow Flycatcher
The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is a federally endangered species (USFWS, 1995). Final critical habitat has been identified for the species however the IPaC report indicates the project area does not overlap the critical habitat. No Flycatchers were observed anywhere within the property boundaries during the January 4, 2021 surveys.

Arroyo Toad
The Arroyo (=arroyo Southwestern) Toad (*Anaxyrus californicus*) is a federally endangered species (USFWS, 1994). Final habitat has been identified for the species however the IPaC report indicates the project area does not overlap the critical habitat. No Arroyo Toads were observed anywhere within the property boundaries during the January 4, 2021 surveys.

Monarch Butterfly
The Monarch Butterfly (*Danaus plexippus*) is a federally designated candidate species (USFWS, 2020). No critical habitat has been designated for this species.

3.6.2.2 Environmental Consequences

3.6.2.2.1 NO ACTION

The no action alternative would not impact listed threatened, endangered, candidate, or proposed species. The habitat would not be altered, and current management would continue.

3.6.2.2.2 PROPOSED ACTION

The project area is located within the documented Desert Tortoise habitat according to CNDDB (2021) and supports some habitat for the desert tortoise based on the field investigations. No tortoises were observed anywhere within the property boundaries during the January 4, 2021 surveys. The species is not expected to move onto the site in the near future based on the absence of any sign, absence of suitable burrows, absence of any recent observations in the immediate area, and the presence of busy roadways in the immediate area which may act as barriers to migration of the tortoises.

No Least Bell Vireo, Southwestern Willow Flycatcher, Arroyo Toad, or Monarch Butterfly is expected to move onto the site in the near future. The protocol survey results are valid for one year as per CDFW and USFWS requirements. See Appendix B – Biological Resources.

3.6.2.3 Mitigation

No mitigation measures are proposed.

3.6.3 Migratory Bird Treaty Act

3.6.3.1 Affected Environment

The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act. The Analysis Area is the project area and adjacent properties.

No migratory bird populations were observed within the Analysis Area and are not expected to nest in the Analysis Area due to a general lack of vegetation.

3.6.3.2 Environmental Consequences

3.6.3.2.1 NO ACTION

The no action alternative would not impact migratory birds. The site would maintain its current habitat and management, and no additional alteration would occur.

3.6.3.2.2 PROPOSED ACTION

The Proposed Action includes grading the property and removing the vegetation from the 44.92-acre parcel; however, impacts to the general biological resources (plants and animals) in the surrounding area are expected to be negligible. This assumption is based on the habitat containing similar vegetation to the surrounding areas in the region. No direct or indirect impacts to migratory birds are anticipated as a result of the proposed action.

3.6.3.3 MITIGATION

No mitigation measures are proposed.

3.6.4 Invasive Species

3.6.4.1 Affected Environment

The Analysis Area comprises the 44.92-acre project area and the adjoining properties. The Analysis Area supports a moderately disturbed desert scrub community that consists of native desert vegetation. The property supports a creosote bush desert scrub community consisting of creosote bush (*Larrea tridentata*), pencil cholla (*Cylindropuntia ramosissima*), rubber rabbitbrush (*Ericameria nauseosa*), paper bag plant (*Salazaria mexicana*), cliff goldenbush (*Ericameria cuneata*), Nevada joint-fir (Ephedra nevadensis), and one Joshua tree (*Yucca brevifolia*).

No listed Invasive Plant Species were observed within the Analysis Area nor are they likely to be supported due the lack of evidence in the surrounding area.

No invasive birds (Mute Swan, Brown-headed Cowbird), mammals (Nutria), reptiles (Watersnake, Red-eared Slider), or amphibians (Coqui, American Bullfrog, or African Clawed Frog) were observed or are likely to be supported. See Appendix B – Biological Resources.

3.6.4.2 Environmental Consequences

3.6.4.2.1 NO ACTION

The no action alternative would not impact invasive species. No invasive species were present with the Analysis area.

3.6.4.2.2 PROPOSED ACTION

The potential for invasive species introduction is low because no invasive species are currently present or supported in the project area.

There would be no potential for the introduction of aquatic invasive species under the proposed action alternative because the project area lacks aquatic habitat.

3.6.4.3 Mitigation

No invasive species mitigation procedures are proposed.

3.7 CULTURAL AND HISTORIC RESOURCES

3.7.1 Affected Environment

3.7.1.1 Regulatory Framework

This section addresses the evaluation and consideration of the proposal's potential effects on cultural resources and historic properties. NEPA mandates the integration of the NHPA (54 USC 300101 et seq) and its implementing regulations (36 CFR 800, specifically 36 CFR 800.8 (a)). Section 106 of the NHPA (54 USC 306108) requires any federal agency that has direct or indirect jurisdiction over an undertaking consider the effect of the undertaking on historic properties.

The objective of this section is to evaluate and document the project's potential impacts to cultural resources as required under NEPA and to consider the project's effects on historic properties under Section 106 of the NHPA. In addition, both NEPA and NHPA outline requirements for Native American consultation in relation to federal undertakings to address issues of potential effects on resources of Native American concern; accordingly, this section summarizes Tribal consultation efforts for the proposed project.

Cultural resources refer to historic, aesthetic, and cultural aspects of the human environment. APREC used California State Historic Preservation Office (SHPO) guidance to identify cultural resources in the project area. The NHPA defines historic properties as a subset of cultural resources that includes prehistoric or historic districts, sites, buildings, structures, or objects included in or eligible for the National Register of Historic Places (NRHP), which the U.S. Secretary of the Interior maintains.

Historic properties include properties of traditional religious and cultural importance to Native American Tribe or Native Hawaiian organization and that meet NRHP criteria.

A property is significant if it meets at least one of the following four criteria (36 CFR 60):

a) It is associated with events that have made a significant contribution to the broad patterns of our history.
b) It is associated with the lives of persons significant in our past
c) It 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.
d) It has yielded or may be likely to yield, information important in prehistory or history.

To convey its significance, a property must retain aspects of integrity that contribute to its eligibility. Aspects of integrity include location, setting, design, workmanship, materials, feeling, and association (36 CFR 60). The Area of Potential Effects (APE) is used as the area of analysis to assess potential impacts and effects of the proposed project on cultural resources and historic properties.

The APREC Solar/Broadband Project APE includes all project disturbance areas associated with construction and maintenance of solar arrays, an Operations building, electrical and internet distribution grid, and access roads for the project. Impacts that result from the undertaking at the same time and place (i.e., during construction) with no intervening causes are considered "direct" regardless of specific type (e.g., visual, physical, auditory, etc.).

"Indirect" effects to historic properties are those that are caused by the undertaking that occur later in time or farther removed from the project site but that are still reasonably foreseeable.

Based on this definition, the APE encompasses the physical area of disturbance, 44.92 acres, and a 0.25-mile area around the physical area of disturbance. For the analysis for this project, the following cultural resources issues were identified:

- How would proposed ground disturbance affect cultural resources and historic properties?
- How would visual intrusions from the project affect integrity for eligible or potentially eligible historic or prehistoric cultural resources?
- How would the disturbance areas and associated visual effects affect cultural resources of religious, cultural, and traditional concern to Tribes?

Based on these issues, the following cultural resources indicators were developed:

- Number of cultural resources and historic properties within the APE
- Number of properties eligible for the NRHP under Criterion A, B, or C with strong visual contrasts to their settings resulting from the project
- Number of resources of religious, cultural, and traditional concern identified by consulting Native American Tribes

3.7.1.2 Database Research of Historical Records

APREC initially conducted a records search with the South-Central Coastal Information Center (SCCIC) to identify any previously recorded archaeological and historic-era resources within the Area of Potential Effect (APE) and to determine the types of resources that might occur. The records search provided by the SCCIC revealed that 10 investigations have been previously conducted within a one-mile radius of the project APE. None of the previous investigations involve the APE.

The records search indicated that eight cultural resources or historic properties have been previously identified within one-mile radius of the APE. One unknown property type and seven historic period resources, all roads or structures, were identified in the records search. None of the previously recorded resources were recorded within the APE.

3.7.1.3 Archaeological Survey

Tierra Environmental (APRECs Cultural Resources Consultant) conducted an intensive archaeological survey of the APE by walking in 10-meter transverse intervals throughout the entire Project Area. The property is considered somewhat largely representative of the southern Mojave Desert, with open, sandy areas and instances of desert scrub type habitat which are dominated by shrubby species of creosote (Larrea tridentata) and instances of Rubber Rabbitbrush (*Ericameria nauseosa*).

The APE has been largely disturbed since the 1950s by extensive off-road vehicle access and, with the exception of dirt access trails appearing in APN-0435-015-13 in the 1970's and 1980's, both parcels remained undeveloped until circa 2005 when two metal structures were installed on APN-0435-015-35.

In the northeast portion of the APN-0435-015-13, recent efforts were made to grow pine trees; numerous abandoned trees, hoses and faucets exist on the property. Scattered throughout the parcels are modern blocks of concrete, bricks, roofing materials and floor tiles, cans, glass, plywood, lumber, other wood, and barbed wire.

The intensive archaeological survey did not result in the identification or recordation of any cultural resources or historic properties within the APE. Due to disturbances and a lack of food or shelter resources or parent lithic material conducive for tool production, intact cultural deposits are unlikely.

Careful review of available archival information and the preliminary assessments of the APE and vicinity suggests that intact buried cultural resources or historic properties would be very unlikely, and due to the disturbances observed, any resources would lack integrity to be considered significant. Cultural Resources documentation is on file at RUS.

3.7.1.4 Consulting Party Consultation

As part of the background data search, the Native American Heritage Commission (NAHC) was contacted in January 2021 to request a review of their Sacred Lands File as well as a list of Native American representatives to be contacted for information regarding resources. The response received from the NAHC requested that the Chemehuevi Indian Tribe be contacted for additional information.

In addition, NAHC suggested contacting the Twenty-Nine Palms Band of Mission Indians, Serrano Nation of Mission Indians, San Manuel Band of Mission Indians, San Fernando Band of Mission Indians, Quechan Tribe of the Fort Yuma Reservation, and the Morongo Band of Mission Indians.

Each of the Native American groups identified by NAHC were contacted concerning the project. Responses were received from the San Manuel Band of Mission Indians, Fort Yuma Quechan Indian Tribe and the Chemehuevi Indian Tribe. Through coordination with these Native American groups, it was determined that a Tribal Monitor should be present during initial ground disturbing activities.

A determination of "No historic properties affected" was provided to the California State Historic Preservation Officer (SHPO) and interested Native American groups on August 4, 2022. The SHPO provided concurrence on September 8, 2022 and no further responses were received from the interested Native American groups. Correspondence between RUS and the SHPO and Native American groups are on file at the RUS.

3.7.2 Environmental Consequences

3.7.2.1 NO ACTION

As there are no known historic properties in the project area, the no action alternative would not result in adverse effects to historic properties.

3.7.2.2 PROPOSED ACTION

There are no known historic properties within the APE and, as such, it is anticipated that there will be no historic properties affected by the proposed action.

3.7.3 Mitigation

A Tribal Monitor will be present to observe initial ground-disturbance activities to monitor for any sensitive cultural material.

3.8 AESTHETICS

3.8.1 Affected Environment

The 44.92-acre project area occurs within a non-urbanized, unincorporated area of San Bernardino County within the sphere of the incorporated town of Apple Valley. It is surrounded by Bear Valley Road and State Route 18 to the north, scattered residential development to the south, vacant land to the west, and vacant land with commercial-zoning designation to the east. Bear Valley Road is designated as a Major Arterial Highway on the San Bernardino Countywide Plan Policy Plan, Policy Map TM-1C Roadway Network North Desert Region (County of San Bernardino, 2018). Primary access to the project area would be provided by Bear Valley Road on the north and Las Piedras on the south. See Appendix D – Aesthetics.

The project area is moderately disturbed with native desert vegetation dominating the area and multiple dirt roads of varying width transecting the property, mainly along the boundaries. The property supports a relatively flat topography, with the exception of the northeast corner where there are elevated rocky outcroppings.

The County Policy Plan does not identify a scenic vista or scenic highway view corridor within the vicinity of the project area, and the project area does not contain any formally classified lands (See Section 3.1.3) that would be considered visually sensitive areas or areas of high scenic value.

3.8.1.1 Visual character and Key Observation Points (KOPs)

KOPs have been designated as a point along the centerline of Bear Valley Road approximately 1,500 feet due north of the Solar Installation area (Point 1) and along the centerline of Las Piedras Road approximately 30 feet due north of the Solar Installation area (Point 2). No additional KOPs have been selected because the area due south of the project area consists of many square miles of vacant land extending southward approximately 10 miles to the base of the San Bernardino mountain range. Areas to the east and west are similarly vacant with few houses on predominantly undeveloped land. See Appendix D - Aesthetics

3.8.1.1.2 Post-Construction Landscape Change

Post-construction the project area will consist of an underground electrical/internet distribution grid that will span the northern 40.2-acre parcel and an installed array of approximately 5,000 matte-black bi-focal photovoltaic panels mounted on low-profile ground mounts located on the southern 4.72-acre parcel. A 6’ sand colored privacy/security wall will be erected along the perimeter boundary lines of the 4.72-acre parcel, as will an entrance gate along the northeast border of the property.

A Caretakers cottage will be built along the northern property line which will further block the panel installation area, as well as providing the look and feel of a single-family residence at the location.

The entire 40.2-acre northern parcel will similarly be surrounded on all sides by a 6' earth-toned privacy/security wall for additional obscuration of any project infrastructure components.

From Point 1, passersby would be unable to see the top of the 6' block wall but will be able to see the top of the Caretaker residence. The PV array will not be able to be seen from the KOP. From Point 2, passersby will see a 6' privacy wall and the Caretaker residence but will not see the PV installation.

The solar installation will not be seen from either KOP. None of the subterranean electrical/internet distribution grid will be visible from any viewpoint.

3.8.2 Environmental Consequences

3.8.2.1 NO ACTION

The no action alternative would not impact the aesthetics of the surrounding landscape and would therefore have no short- or long-term impacts on the existing visual environment.

3.8.2.2 PROPOSED ACTION

As part of the proposed action approximately 5,000 Bi-facial solar panels will be placed on ground-support mounts on the 4.72-acre parcel which is approximately 0.25 miles south of Bear Valley Road. The entire 4.72-acre parcel will be enclosed by a 6' privacy/security wall which will shield the panels from view by neighboring homes or by travelers along Bear Valley Road.

The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings as proposed given the foregoing location as described. The project area will be designed in accordance with the San Bernardino County Development Code and all electrical distribution will be placed underground for additional safety, reliability, and aesthetic value.

Light sources would be oriented towards the property and boxed. Consistent with San Bernardino County Development Codes new permitted lighting for new construction, will be shielded to preclude light pollution. In accordance with the Development Code the maximum allowed residential pole lighting shall not exceed 12 feet in height.

The proposed photovoltaic arrays and associated infrastructure will be almost completely shielded from view from all sides and will have little or no impact on the surrounding areas. The underground electrical distribution and Broadband distribution grids will remain unseen by virtue of being placed underground and by the 6' privacy/security wall encircling the entire project area.

As such, no direct or indirect effects are anticipated.

3.8.3 Mitigation

No mitigation is required or proposed.

3.9 AIR QUALITY

3.9.1 Affected Environment

3.9.1.1 Regulatory Framework

Potential air quality effects can be short-term (construction-related) or long-term (facility emissions, increased traffic). Under the Clean Air Act, USEPA was required to set National Ambient Air Quality Standards (NAAQS) for "criteria" pollutants: ozone, particulate matter (PM 2.5 and PM 10), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and lead (Pb). In addition, USEPA is responsible for designating areas as meeting (attaining) or not meeting (non-attainment) the NAAQS.

Each state is required to establish a State Implementation Plan (SIP) for areas which exceed the NAAQS standards. SIPs are comprehensive plans that describe how an area will achieve compliance with the NAAQS

In accordance with the Clean Air Act, Section 176(c)(1), RUS is responsible for ensuring that its actions conform to applicable implementation plans for achieving and maintaining NAAQS. Per RD Instruction 1970-O, "if the action occurs within the boundaries of a nonattainment or maintenance area, the General Conformity Rule applies," and "if the action occurs in an attainment area, the General Conformity Rule does not apply, and no conformity determination is necessary."

The project area is EPA-designated as severe non-attainment for ozone and moderate non-attainment for PM10; it is in attainment or unclassified/attainment for the remaining criteria pollutants (PM2.5, CO, NO_x, SO_2, and Pb). Air quality in the project area is managed under the Western Mojave Desert Air Quality Plans because it is in San Bernardino County.

In order to conform with the applicable implementation plan, the proposal must not contribute to new violations of standards for ambient air quality, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area affected by the proposal.

3.9.2 Environmental Consequences

3.9.2.1 NO ACTION

Under the no action alternative, the Project would not be constructed, and air quality would not be affected.

3.9.2.2 PROPOSED ACTION

National Ambient Air Quality Conformity
The Mojave Desert Air Quality Management District (MDAQMD) is the California State Agency chartered with administrating and enforcing the National Ambient Air Quality Standards (NAAQS).

Under 40 CFR 93.153(b) USEPA has set *de minimis* emissions thresholds that determine whether a project requires a general conformity determination. A general conformity analysis is not required for project's whose emissions fall below the *de minimis* thresholds.

The project is in a non-attainment area for PM10 and ozone, therefore impacts of the project on these criteria pollutants must be considered. As shown in Table 3.9-1, the emissions of criteria pollutants for the project fall below NAAQS *de minimis* thresholds. Therefore, project emissions would not cause new violations or exacerbate an existing violation of NAAQS standards, and the project does not require a general conformity analysis. Further, the project does not conflict with the SIP. See Appendix E – Air Quality.

Table 3.9-1: Comparison of National Ambient Air Quality Standards *de minimis* Emissions Thresholds and Anticipated Project Emissions for Criteria Pollutants in a Non-Attainment Area

Criteria Pollutants	Annual Thresholds (tons/year)	Project Emissions (tons/year)
Non-attainment		
Ozone	25	0.50
Coarse Particulates (PM_{10})	100	0.90

Source: 40 CFR 93.153(b).

Table 3.9-1 National Ambient Air Quality Standards De Minimis Emissions Thresholds

Construction Emissions

Construction associated with the proposed project would generate short-term emissions of criteria air pollutants. The criteria pollutants of primary concern within the project area include ozone precursor pollutants (i.e., reactive organic gases (ROG) and NO_X), PM10, and PM2.5. Construction-generated emissions are short term and of temporary duration, lasting only as long as construction activities occur.

Construction results in the temporary generation of emissions resulting from, site preparation, grading, construction, road creation, motor vehicle exhaust associated with construction equipment and worker trips, and the movement of construction equipment, especially on unpaved surfaces. Emissions of airborne particulate matter are largely dependent on the amount of ground disturbance associated with site preparation activities as well as weather conditions and the appropriate application of water.

The duration of construction activities for the project is estimated to be approximately 10 months. Construction will likely occur in 2023 and potentially 2024. Construction-generated emissions associated with the proposed project were calculated using the CARB-approved California Emissions Estimator Model version 2022 (CalEEMod), which is designed to model emissions for land use development projects, based on typical construction requirements.

See Appendix E – Air Quality for more information regarding the construction assumptions used in this analysis. Predicted maximum daily construction-generated emissions for the proposed project are identified in Table 3.9-2: Project Construction Emissions.

Table 3.9-2: Project Construction Emissions (Pounds per day)

Construction Year	Emissions (pounds per day)[1]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2023 (150 days)	4.51	46.30	60.1	0.06	10.00	5.97
2024 (50 days)	85.2	21.00	49.01	0.04	7.39	2.26
MDAQMD Threshold	n/a	137	548	137	82	65
MDAQMD Threshold Exceeded?	**n/a**	**No**	**No**	**No**	**No**	**No**

Notes:

1. MDAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; replace ground cover of area disturbed; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the South Coast Air Quality Management District (SCAQMD) CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.

Source: CalEEMod version 2020.4.0. Refer to Appendix A for model outputs.

Table 3.9-2 Project Construction Emissions (Pounds/day)

Table 3.9-3: Project Construction Emissions (Tons per year)						
Construction Year	**Emissions (tons per year)[1]**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2023 (150 days)	0.34	3.47	4.51	0.005	0.75	0.45
2024 (50 days)	2.13	0.53	1.23	0.001	0.18	0.06
MDAQMD Threshold	n/a	137	548	137	82	65
MDAQMD Threshold Exceeded?	**n/a**	**No**	**No**	**No**	**No**	**No**
Notes: 1. MDAQMD Rule 403 Fugitive Dust applied. The Rule 403 reduction/credits include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; replace ground cover of area disturbed; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the South Coast Air Quality Management District (SCAQMD) CEQA Handbook (Tables XI-A through XI-E) were applied. No mitigation was applied to construction equipment. Refer to Appendix A for Model Data Outputs.						
Source: CalEEMod version 2020.4.0. Refer to Appendix A for model outputs.						

Table 3.9-3 Project Construction Emissions (Tons/year)

Table 3.9-3 shows that construction pollutant emissions would remain below their respective thresholds with implementation of required MDAQMD Rule 403.2. The project would also be required to comply with MDAQMD Rules 402 and 1113, which prohibit nuisances and limit VOC content in paints, respectively.

Operational Emissions

Operational emissions are typically associated with mobile sources (i.e., motor vehicle use) and area sources (such as the use of landscape and facility maintenance equipment, potable and non-potable water sourcing, transport, treatment, and storage, lighting, and broadband service provisioning). Energy source emissions would be generated from electricity usage.

Table 3.9-4: Operational Emissions summarizes the operational emissions attributable to the proposed project.

Table 3.9-4: Operational Emissions						
Source	**Emissions (tons per year)[1]**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Project Emissions						
Area	0.65	0.06	0.59	<0.01	<0.01	<0.01
Energy[2]	0	0	0	0	0	0
Mobile	0.02	0.18	1.15	0.16	0.90	0.18
Total	0.67	0.24	1.74	0.17	4.94	0.19
MDAQMD Threshold	N/A	137	548	137	82	65
NAAQS Threshold	25	25	N/A	N/A	100	N/A
MDAQMD Threshold Exceeded?[3]	**N/A**	**No**	**No**	**No**	**No**	**No**
NAAQS Threshold Exceeded?[4]	**No**	**No**	**N/A**	**N/A**	**No**	**N/A**
Notes: 1. Emissions were calculated using the California Emissions Estimator Model version 2022 (CalEEMod), as recommended by the County. Worst-case seasonal maximum daily emissions are reported. 2. The project would generate and supply 100 percent of the required energy through the proposed solar power station 3. CalEEMod version 2020.4.0. Refer to Appendix A for model outputs. 4. *40 CFR 93.153(b)*						

Table 3.9-4 Operational Emissions

As shown in **Table 3.9-4**, the project's emissions would not exceed MDAQMD significance or NAAQS di minimis thresholds. Therefore, operational criteria pollutant emissions would not require mitigation.

Greenhouse Gas (GHG) Emissions

The project would include direct and indirect GHG emissions from project construction and operations. Construction is considered a direct source since these emissions occur at the site. Direct operational-related GHG emissions for the proposed project would include emissions from area and mobile sources.

Construction of the project would result in direct emissions of CO2, N2O, and CH4 from construction equipment and the transport of materials and construction workers to and from the project site. Construction GHG emissions are typically summed and amortized over the lifetime of the project (project lifetime will be 40 years then added to the operational emissions. Total GHG emissions generated during all phases of construction were combined and are presented in Table 3.9-5: Construction Greenhouse Gas Emissions. The CalEEMod outputs are contained within Appendix E—Air Quality.

Table 3.9-5: Construction Greenhouse Gas Emissions

Construction	$MTCO_2e$ per Year
2023 Construction	689
2024 Construction	302
Total Construction Emissions	991
40-Year Amortized Construction	25

Source: CalEEMod version 2022 Refer to Appendix A of Appendix I—Air Quality for model data outputs.

Table 3.9-5 Construction Greenhouse Gas Emissions

As shown in Table 3.9-5, the project construction would result in 991 metric tons of CO2-equivalent (approximately 25 MTCO2e/year when amortized over 40 years).

Projects that do not exceed 3,000 MTCO2e per year are consistent with the County's GHG Plan and those that do not exceed 100,000 MTCO2e per year are below the permitting threshold and as such do not require mitigation.

3.9.3 Mitigation

No Air Quality mitigation measures are proposed.

3.10 SOCIAL IMPACT ASSESSMENT AND ENVIRONMENTAL JUSTICE

3.10.1 Affected Environment

As part of RUS's mission to support sound development of rural communities and provide economic opportunities for rural residents, the agency considers the positive or negative socioeconomic status of the areas being served, often focusing on population or income changes or effects on local institutions such as schools, health care facilities, and housing.

Other factors for consideration include tax revenues, community cohesion and/or growth, property values, displacement of people or land, transportation, health and public safety, and public services or facilities.

RUS loan applicants are required to determine whether their proposals have or may have a disproportionately high and adverse human health or environmental effect on minority or low-income populations under EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and USDA Departmental Regulation 5600-2 *Environmental Justice*.

The most representative analysis area for socioeconomics and environmental justice is the census tract because it defines the population and economics of the local community. Indicators for socioeconomic impacts include potential increase in population, potential increase in employment, potential increase in revenue, potential increase in traffic, potential impacts on infrastructure and public services, potential increase in emissions, potential increase in noise, and other impacts that may affect quality of life.

As defined by environmental justice guidance under NEPA (Council on Environmental Quality, 1997), "minority populations" include persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, Black (not of Hispanic origin), or Hispanic. Race refers to census respondents' self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceeds 50% or is meaningfully greater than in the general population. Low-income populations are identified using the U.S. Census Bureau's statistical poverty threshold, which is based on income and family size.

3.10.1.1 POPULATION

A census tract is a small geographic subdivision of a county and typically contains between 1,200 and 8,000 persons. APREC used San Bernardino County as the general population reference area and used the census tracts in the county to identify potential environmental justice communities.

The project area lies within California Census Tract 97.08, a large geographic area consisting of 84.1 square miles and a population of 5,341. Tract 97.08 is situated within an unincorporated area of San Bernardino County and according to 2020 U.S. Census Data maintains the following demographic composition:

2020 U.S. Census Data for Census Tract 97.08: (U.S. Census, 2020)

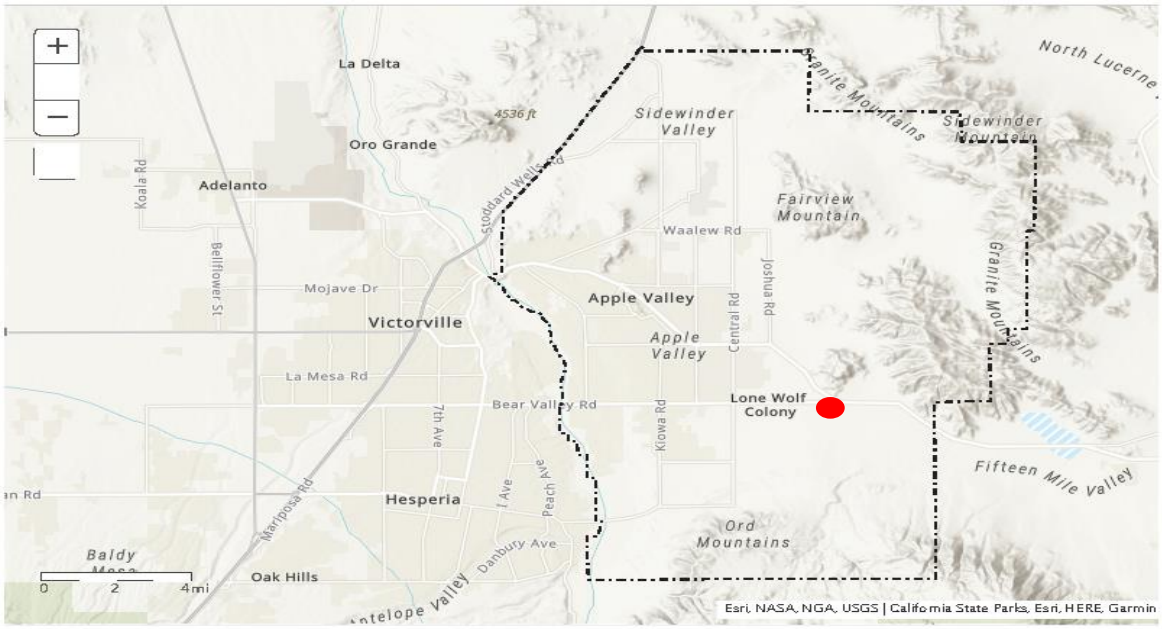
- White 70.00%
- Hispanic 25.00%
- Black 03.00%
- Asian 01.00%
- Two+ 02.00%

The percentage of the population identified as belonging to a minority group in Census Tract 97.08 is not equal to or greater than 50 percent, therefore, no minority environmental justice populations exist in the analysis area.

3.10.1.2 EMPLOYMENT AND INCOME

Economically, California Census Tract 97.08 maintains the following income and employment data (2020 U.S. Census NOTE – Margin of Error is at least 10%):

- Per Capita Income $22,664
- Median Household Income $56,996
- Persons Below Poverty Line 20.1%
- Working Age Persons 3,151



Source ArcGIS – Apple Valley Sphere of Influence

Figure 3.10-1 Apple Valley Sphere of Influence

The project area is situated within an unincorporated area of San Bernardino County but lies within the "sphere of influence" of Apple Valley. The most recent U.S. Census data indicates the following (U.S. Census Bureau, 2020) includes the employment and income data for Apple Valley:

- Employed population 26,011 (of the total 76,224 residents)
- Median Household Income $54,929
- Poverty Rate 17.6%

Apple Valley's civilian labor force represents approximately 38,000 people and the per capita income is $25,655. The poverty rate is approximately 17.6%. The Poverty rate in the communities adjacent to the project area are higher than the overall SB County poverty rate of 13.6%, which better highlights local conditions.

Neither Apple Valley nor Census tract 97.08 is a low-income area. The US Census Bureau (US Census Bureau 2021) defines a "low-income" area where households earn less than 80% of the area median income. The local area (Apple Valley) median income is $54,929. In Census Tract 97.08 median income is $56,996, slightly higher than the area average. No low-income environmental justice populations exist in the analysis area. See Appendix F – Census Tract 97.08 Profile Data.

3.10.2 Environmental Consequences

3.10.2.1 NO ACTION

Under the no action alternative, RUS would not provide financial assistance to APREC for the proposed project and no related socioeconomic impacts would occur. Population, employment, and income trends in San Bernardino County would be expected to follow existing trends under the no action alternative. No environmental justice impacts would occur under the no action alternative.

3.10.2.2 PROPOSED ACTION

Under the proposed action Alternative construction of the proposed Solar facility, Distribution grid, associated infrastructure, and Broadband Internet service network will provide both temporary and permanent employment opportunities drawn from the local community. In addition, the entire Avellana cooperative community project will provide desperately needed affordable housing, service and maintenance jobs, and critical tax revenue for the local community.

APREC anticipates that approximately 80 personnel will be employed as temporary construction staff for a period of approximately one year, followed by a smaller construction crew of 20 for an additional 18 months. Once construction and installation activities have tapered off APREC anticipates 12 full time staff within the community.

During construction, the project would likely result in a temporary increase in traffic on public roads in the vicinity of the project area. This traffic would include travel by the approximately 30-80 employees needed for the project, which would include preconstruction survey crews, subcontractors, laborers, supervisors, and engineers. Work force during this period would peak at approximately 80 personnel.

Because no environmental justice communities exist in the analysis area, no disproportionately high or adverse effects to environmental justice communities would occur as a result of the proposed action.

3.10.3 Mitigation

No mitigation measures are proposed for social resources or environmental justice.

3.11 MISCELLANEOUS RESOURCES

3.11.1 Noise

3.11.1.1 Affected Environment

Noise is a subjective reaction to different types of sounds. Noise is typically defined as airborne sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. A typical noise environment consists of a base of steady "background" noise that is the sum of many distant and indistinguishable noise sources.

Superimposed on this background noise is the sound from individual local sources.

These sources can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity.

The A-weighted decibel scale (dBA) performs this compensation by differentiating among frequencies in a manner approximating the sensitivity of the human ear.

The dBA approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds.

Examples of typical noise from outdoor and indoor activities are listed below in Table 3.11-1 Typical Noise Levels.

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

Source: Caltrans 2013

Table 3.11-1: Typical Noise Levels

The Department of Housing and Urban Development (HUD) considers an acceptable noise level to be 65 dBA or below for residential exteriors (HUD, 24 CFR 51, Subpart B).

The project area is in a rural unincorporated area outside Apple Valley in San Bernardino County. The site is undeveloped. The proposed project area is located in a rural area with three residences inside the analysis area. The analysis area for noise extends 500 feet in all directions from the project area. The closest sensitive receptors to the project area are three residences directly adjacent to the project area. A few residences lie outside the analysis area. There are no other sensitive noise receptors (e.g., schools, daycare facilities, etc.) in the noise analysis area.

Ambient noise surrounding the project area consists predominantly of rural or natural sounds and vehicle traffic on Bear Valley Road and State Highway 18. As identified in the APREC Final Acoustical Analysis (See Appendix G – Acoustical Analysis) measured road noise along Bear Valley Road is 71 dBA.

3.11.1.2 Environmental Consequences

3.11.1.2.1 NO ACTION

Under the no action alternative, the project would not be developed. No new noise would occur, and current noise levels would not be affected.

3.11.1.2.2 PROPOSED ACTION

The proposed action would result a direct, short-term increase in noise related to construction activities. This impact would be temporary, occurring only during daylight hours (between 0700-1900) presumably during an 8 to 10- hour workday within the construction period.

Noise levels generated by construction would vary daily and hourly, depending on the construction activity and the type, age, and numbers of equipment in operation.

Most construction noise is in the 80 to 90 dBA range (American National Standards Institute 2018). Additionally, noise resulting from construction would vary with the type of work being done, the distance between the work and the receptor, and meteorological conditions.

Generally, sound levels are expected to be quieter for areas where activities occur at distances greater than 50 feet from the property line.

Noise resulting from increased construction vehicle traffic would also occur. Workers would make approximately 300 heavy truck trips to deliver equipment and materials to the project area during the 10-month construction period. Worker and material delivery commutes would result in short-term noise that would have little effect on hourly average noise levels within the analysis area.

Although construction would result in an increase in ambient noise levels, the increase would be temporary and would be limited to daytime hours when residential land uses are typically less sensitive to noise intrusion. The closest sensitive receptor to the project area is approximately 100 feet outside the project area, so construction noise will be audible.

San Bernardino County's Development Code (Division 3, Countywide Development Standards; Chapter 83.01, General Performance Standards, Section 83.01.080, Noise) exempts noise from construction noise, provided that construction is limited to the hours between 7 a.m. and 7 p.m., except on Sundays or federal holidays, when construction is not allowed. All construction activities will take place within these hours.

Post-construction, the ambient sound environment in the immediate project area would be reduced from existing levels of 71-78 dBA to 45 dBA as a result of constructing a 6'-tall masonry block wall around the perimeter of the entire project area.

Noise associated with operation of a solar farm comes from the use of inverters which convert direct current (DC) produced by the solar panels into alternating-current (AC) power.

Under normal operating conditions the inverters will generate 53.7 dBA at the center of the solar farm and 19.2 dBA at the perimeter walls abutting sensitive receptors. Therefore, impacts from solar farm operation would be negligible beyond the fenced project area, and no permanent noise impacts would be associated with operation. No noise would result from the buried electrical distribution lines, or broadband infrastructure. APREC would use no specialized equipment that would generate loud noises. No long-term noise pollution is expected as a result of the proposed project. See Appendix G – Acoustical Analysis.

3.11.1.3 MITIGATION

No mitigation measures are proposed for noise.

3.11.2 Transportation

3.11.2.1 Affected Environment

The project area is located in the unincorporated area of San Bernardino County approximately 5 miles west of Apple Valley. Land uses outside the project are rural residential and large tracts of vacant land. The analysis area consists of the immediate roadways surrounding the project area that workers would use to access the project area and the county landfill, which is approximately 17 miles from the project area; these roads are described below.

The project area is located along Bear Valley Road, a major arterial road with a speed limit of 55 mph. Bear Valley Road turns into state Highway 18 to the east and leads into the towns of Apple Valley, Victorville, Hesperia, and Adelanto to the west. State Highway 18 is a major arterial highway and had an annual average daily traffic (AADT) of 11,500 near its intersection with Bear Valley Road (Town of Apple Valley Engineering Department, 2010-2016).

Bear Valley Road had an AADT of 8,500 near the same intersection. Within the project area Las Piedras Road, an unpaved and unmaintained county road divides the contiguous northern and southern project parcels. Las Piedras Road has an estimated AADT of 40.

3.11.2.2 Environmental Consequences

3.11.2.2.1 NO ACTION

The no action alternative would not impact transportation or associated facilities, as there would not be additional development or activities to generate additional traffic beyond current levels along Bear Valley Road and Las Piedras Road.

3.11.2.2.2 PROPOSED ACTION

Construction Phase

The project area will be accessed at two points, Bear Valley Road at a point approximately ½ mile west of State Highway 18 and at Las Piedras Road. Because of project area's proximity to Apple Valley, which is 5 miles to the west, it is anticipated that construction workers accessing the project area from Bear Valley Road would primarily come from the west. As the project area directly abuts Bear Valley Road very little impact to other roads in the immediate vicinity would result from project construction.

Heavy trucks frequently traverse Bear Valley Road along the project area with most of them originating in Apple Valley or Victorville delivering materials to points east of the project area. AADT along Bear Valley Road passing the entrance point to the project is 8,500 (Town of Apple Valley Engineering Dept, 2016) with an estimated 4% being heavy trucks. An estimated 340 heavy trucks pass by the project area daily.

A typical Project construction day would include the transportation of workers, movement of heavy equipment, and transportation of materials during peak construction. An increase of road traffic would result from construction-related movement of people, materials, and equipment; this increase would vary depending on the phase of construction. Project construction is planned to last no more than 10 months. Over the construction period, workers would make approximately 300 heavy truck trips to deliver equipment and materials to the project area or approximately 1.5 heavy trucks per workday (Mon-Fri). The proposed temporary increase in heavy truck trips is estimated to represent an increase in heavy truck traffic past the project area of approximately $4/10^{th}$ of 1% daily during the week and by 0% on weekends.

The APREC Jan 2022 Traffic Impact Analysis (TIA) (See Appendix H - Traffic Impact Analysis) actual heavy truck (Trucks with 3 or more axles) counts passing the project site were 11.9% during the morning rush (0700-0900) and 5.4% during the evening rush (1600-1800).

Construction would require the employment of up to 80 workers per day during the peak construction period. It is assumed workers would carpool to the project area, with 2 to 4 workers per vehicle for an estimated 20 to 40 daily trips during peak construction. Most of these workers would likely commute from the local area or region. The most conservative estimate would be 80 separate vehicle trips (no carpooling) to the site per day, which would represent an increase in the AADT of less than 1% during the week and 0% on weekends.

These estimates would represent a very minor increase in heavy truck trips and worker vehicle trips over the 2016 AADT of 8,500. As part of the proposed action, APREC would construct temporary roads and permanent access roads within the project area to support construction and O&M as well as internal site access roads. These roads would be private, located within the project area, and only accessible by APREC. The internal site access roads would consist of unpaved access roads with a width of 16 to 20 feet and graveled/compacted roads with a width of 20 to 25 feet and a depth of 3 to 6 inches.

These roads would provide access between array rows and to each array during construction and O&M. From the internal access roads, access aisles would provide access to other areas among the solar arrays. These aisles would not be roads but rather clear spaces between the individual rows of solar panels that consist of unimproved native material; the spaces would allow access to all areas of the site via foot or by use of 4×4 vehicles for maintenance and emergency response.

The TIA shows negligible conflicts with traffic are anticipated to occur during project construction phase. Any increase in traffic as a result of construction activities will be temporary in nature; no long-lasting effects are anticipated.

Operational Phase

The operational phase of the project will require two full-time personnel operating on-site daily. The majority of their work will take place within the project area conducting maintenance and repair work. Operational traffic impacts from the APREC Solar/Broadband project will be minimal.

Additional consideration and traffic analysis has been conducted to assess the impact of the proposed cooperative community and associated amenities within the project area to assess their total effect more completely on local traffic patterns. The TIA incorporates these assumptions and has modeled current and future traffic flows for all reasonably foreseen development within the project area. Further discussion of these impacts is detailed in Cumulative Effects Section 4.

Operation of the APREC Solar/Broadband installation and other associated infrastructure is not expected to cause or create any changes in traffic patterns; no new external roadways, intersections, upgrades, or traffic signals would be required. As such, no impacts are anticipated as a result of the Proposed Action. See Appendix H – Traffic Impact Analysis.

3.11.2.2.3 Mitigation

No transportation mitigation measures are proposed.

3.12 HUMAN HEALTH AND SAFETY

The analysis area for human health and safety is the proposed project footprint and the lands immediately adjacent. The impact indicators for human health safety include a potential increase in electromagnetic field radiation in comparison to recommended exposure limits, proximity to areas containing potentially hazardous materials, and a potential increase in production, storage, and disposal of hazardous materials.

3.12.1 Electromagnetic Fields and Interference

3.12.1.1 Affected Environment

Electromagnetic fields (EMFs) are invisible areas of energy associated with the use of electrical power and various forms of natural and man-made lighting (often referred to as radiation). EMFs are typically grouped into one of two categories by their frequency:

- Non-ionizing: low-level radiation that is generally perceived as harmless to humans. Sources of non-ionizing radiation include microwave ovens, computers, cell phones, power lines, and magnetic resonance imaging (National Institute of Environmental Health Sciences [NIEHS] 2020).
- Ionizing: high-level radiation that has the potential to cause cellular and DNA damage. Sources of ionizing radiation include sunlight, x-rays, and some gamma rays (NIEHS 2020).

In the United States, electricity is usually delivered as alternating current that oscillates at 60 cycles per second (Hz), putting fields generated by this electrical energy in the extremely low frequency range (NIEHS 1999). The NIEHS has concluded that the scientific evidence suggesting that extremely low frequency EMF exposures pose any health risk is weak and does not warrant aggressive regulatory concern (NIEHS 1999).

A 2015 study characterized magnetic and electric fields between the frequencies of 0 Hz and 3 gigahertz at two solar facilities operated by the Southern California Edison Company, one in Porterville, California, the other in San Bernardino, California (Tell et al. 2015). Static magnetic fields at the facilities were very small compared to exposure limits established by the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) (ICNIRP 2020). The highest-frequency magnetic fields were measured adjacent to transformers and inverters, and radiofrequency fields from 5 to 100 kilohertz were associated with the inverters. Every field measured complied with IEEE controlled limits and ICNIRP occupational exposure limits. The frequencies of the electric fields were negligible compared to IEEE and ICNIRP limits across the spectrum and when compared to Federal Communications Commission limits (≥0.3 megahertz) (Tell et al. 2015).

As the Project area is currently undeveloped there are no existing sources of EMFs.

3.12.1.2 Environmental Consequences

3.12.1.2.1 NO ACTION

The no action alternative would not impact electromagnetic fields and interference.

3.12.1.2.2 PROPOSED ACTION

Under the proposed action, EMF radiation would increase slightly in the project area as a result of the operation of the proposed solar facility. Further, as part of the proposed action, APREC will deploy Broadband Internet services via FCC-approved satellite downlink devices that will be routed to individual homes via secure, underground data connections. Electromagnetic radiation will be negligible and far below any thresholds for human effect. The project will have no impact on electromagnetic fields and interference.

3.12.1.3 Mitigation

No mitigation measures are proposed for electromagnetic fields and interference.

3.12.2 Environmental Risk Management

3.12.2.1 Affected Environment

A search of the California Department of Toxic Substances Control's EnviroStor (2022) data management system found no hazardous materials sites located within or in the vicinity of the project area. EnviroStor tracks cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known or suspected contamination issues.

EnviroStor lists one site identified located approximately one-half mile to the south of the site as Victorville Precision Bombing Range (PBR) No. 4 FUDS Project No J09CA06890, an inactive and former military range. Details about the range can be found in Appendix I – Hazards and Hazardous Materials. No other known hazardous waste sites have been documented.

3.12.2.2 Environmental Consequences

3.12.2.2.1 NO ACTION

The no action alternative would not result in impacts from hazardous waste or other related environmental conditions.

3.12.2.2.2 PROPOSED ACTION

While the photovoltaic panels used in solar facilities are not classified as hazardous waste, photovoltaic panels waste can include heavy metals such as silver, lead, arsenic, and cadmium, which may be classified as hazardous waste. Under the proposed action, the photovoltaic panels used would not include any hazardous materials. The specific type of panels used would be determined during final engineering and design. The panels would likely be recycled or repurposed at the conclusion of the 40 year project lifespan. No other hazardous materials would be generated by the proposed action and no impacts are anticipated.

3.12.2.3 Mitigation

No mitigation measures are proposed for environmental risk management.

3.13 CUMULATIVE EFFECTS

The cumulative effects analysis evaluates the effects of the proposed project and considers the effects of past, present, and reasonably foreseeable future actions occurring in the area that the proposed project would affect (i.e., the cumulative impact analysis area [CIAA]). The CIAA for each resource is the same as the analysis area for its direct and indirect environmental effects, unless noted otherwise. The Affected Environment sections of Chapter 3 provide information about past and present environmental conditions associated with each resource. Section 4.1 describes reasonably foreseeable projects in the CIAA that may contribute to cumulative effects, and Section 4.2 assesses the cumulative impacts of the proposed action and reasonably foreseeable actions on the human environment. Construction of the project is anticipated to last 10 months. After construction, the project is expected to operate for 40 years. The temporal scale for cumulative impacts is 42 years to account for the construction and operation periods.

3.13.1 Projects Contributing to Cumulative Effects

Because the APREC cooperative community is completely self-contained within 44.92-acres the CIAA and associated effects is very precisely defined. Reasonably foreseeable future actions include the development of a residential community, which would include the construction and maintenance of 400 energy efficient single-family homes, a closed-loop wastewater treatment plant, medical/dental clinic, and community center. Further projects within the CIAA are not planned or foreseen, but potential effects may result from development within the surrounding areas, to include commercial and residential construction in the vicinity, future environmental and air quality standards, highway modifications and improvements, etc.

3.13.2 Cumulative Effects Analysis

The cumulative effects analysis includes actions that meet the following criteria:

- The action impacts a resource potentially affected by the proposed action.
- The action causes impacts within all or parts of the same geographic scope of the proposed action.
- The action causes impacts within all or part of the temporal scope for the potential impacts from the proposed action.

Per RD Instruction 1970-O if the proposed action and alternatives would have no direct or indirect effects on a resource, the cumulative effects on that resource do not have to be analyzed. The proposed action is not expected to have meaningful directs or indirect impacts to the following resources: land use, farmlands, formally classified lands, floodplains, wetlands, water resources, coastal resources, biological resources, cultural and historic resources, aesthetics, socioeconomics/environmental justice, or health and safety, and environmental risk management. The impacts of projects that comprise the cumulative scenario combined with the proposed action could contribute to cumulative effects on certain resources, as discussed below. This analysis is limited to miscellaneous resources, specifically noise, and transportation, despite the lack of long-term direct transportation impacts.

3.13.2.1 Air Quality

The spatial CIAA for air quality is the 5-mile area surrounding the project area. Impacts to air quality from the proposed action would be limited to the construction phase of the proposed action and would be temporary, localized, and minor, as discussed in Section 3.9.

Air quality impacts associated with additional development within the project areas include the operational emissions from the cooperative community proposed to be co-developed within the project area.

Operational emissions are typically associated with mobile sources (i.e., motor vehicle use) and area sources (such as the use of landscape and facility maintenance equipment, potable and non-potable water sourcing, transport, treatment, and storage, lighting, and broadband service provisioning). Energy source emissions would be generated from electricity usage. Table 3.13-1: Operational Emissions summarizes the operational emissions attributable to the proposed project. See Appendix E – Air Quality for additional details.

Table 3.13-1: Operational Emissions

Source	Emissions (tons per year)[1]					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Project Emissions						
Area	0.65	0.06	0.59	<0.01	<0.01	<0.01
Energy[2]	0	0	0	0	0	0
Mobile	0.02	0.18	1.15	0.16	0.90	0.18
Total	0.67	0.24	1.74	0.17	4.94	0.19
MDAQMD Threshold	N/A	137	548	137	82	65
NAAQS Threshold	25	25	N/A	N/A	100	N/A
MDAQMD Threshold Exceeded?[3]	**N/A**	**No**	**No**	**No**	**No**	**No**
NAAQS Threshold Exceeded?[4]	**No**	**No**	**N/A**	**N/A**	**No**	**N/A**

Notes:

5. Emissions were calculated using the California Emissions Estimator Model version 2022 (CalEEMod), as recommended by the County. Worst-case seasonal maximum daily emissions are reported.
6. The project would generate and supply 100 percent of the required energy through the proposed solar power station
7. CalEEMod version 2020.4.0. Refer to Appendix A for model outputs.
8. *40 CFR 93.153(b)*

Table 3.13-1 Operational Emissions

As shown in Table 3.13-1, the Project's emissions would not exceed MDAQMD significance or NAAQS *de minimis* thresholds. No mitigation is required.

3.13.2.2 Miscellaneous Resources

Noise

The spatial CIAA for noise is the 1-mile area surrounding the project area. Impacts to noise would be temporary and minor, lasting only during construction, as discussed in Section 3.11.1. Noise impacts from construction activities are generally localized where they occur. The cumulative effects on noise from the proposed action and projects listed in Section 4.1 would likely result from the increase in highway traffic noise as a result of an increase in the number of daily trips made by residents and commercial employees associated with the new planned residential/commercial development. As traffic volumes (see below) are not predicted to increase substantially, the cumulative impacts of noise are likewise likely negligible.

Transportation

The spatial CIAA for transportation is the 5-mile area surrounding the project area. Impacts to transportation because of past, present, and reasonably foreseeable actions would be associated with the development of a planned master community with up to 400 homes and associated service facilities. These new residences would generate an increase in daily trips to and from town. Currently, the AADT passing by the entrance to the community is 8,500. Future traffic increases as a result of cumulative actions will not exceed a 2% increase over existing conditions, and intersection performance will not experience any changes in operational performance. The project is not expected to cause or create any changes in traffic patterns; no new external roadways, intersections, upgrades, or traffic signals would be required. See Appendix H – Traffic Impact Analysis

3.13.3 Summary of Impacts

Resource	Cumulative Impacts	Contribution of Proposed Project to Cumulative Effects	Impacts of No Action
Land Use	Establishment of utility infrastructure	Minimal localized impacts from conversion of undeveloped land to utility infrastructure	None
Floodplains	None	None anticipated	None
Wetlands	None	None anticipated	None
Water Resources	Establishment of water wells and aquifer recharge infrastructure	Minimal with the implementation of BMP's and mitigation	None
Coastal Resources	None	None	None
Biological resources vegetation/invasive species	None	None anticipated with the implementation of BMP's and mitigation	None
Biological resources fish, wildlife, and migratory birds	Potential loss of habitat and localized impacts	Minimal impacts resulting from the small amount of habitat loss relative to the available habitat, which is unlikely to cause impacts to the viability of any wildlife populations	None
Biological resources ESA-threatened and endangered species	None	None anticipated	None
Cultural and historic resources	None	None	None
Aesthetics	None	Minor	None
Air Quality	Potential localized emissions from construction and fugitive dust	Short-term, localized, and minor	None
Social impact analysis	Minimal impacts from temporary increase in population, traffic, utilities, and public services during construction. Potential benefits from increased electrical power generation, consumer spending, and tax revenue	Negligible increases in population, traffic, and demand on infrastructure, utilities, and public services during construction. Minor beneficial impacts from increased electrical power generation	No increase in renewable electric power generation, consumer spending, or tax revenues
Environmental justice	None	None	No increase in affordable housing
Noise	Potential temporary increase in noise levels during construction	Short term, minor to moderate, and localized	None
Transportation	Negligible increase in traffic to and from the site. Potential benefit from decrease in VMT due to on-site facilities for the cooperative community	Short term, minor, and localized	None
Human health and safety	Potential temporary increase in health and safety impacts from construction activities. Potential benefit from onsite medical/dental clinic and lower VMT	Minor and short term	None
Corridor analysis	None	None	None

Table 3.13-2. Summary of Cumulative Impacts Assessment

4 SUMMARY OF MITIGATION

Table 4-1 summarizes the mitigation measures identified in the various resource sections of this EA. APREC would be the responsible party for carrying out these measures, unless otherwise noted.

Table 4-1. Mitigation for the Proposed Action

Resource	Mitigation Measure
Land use	None
Floodplains	None
Wetlands	None
Water resources	None
Coastal resources	None
Biological resources	None
Cultural and historic resources	An Indian tribal monitor will be present during initial ground disturbance activities to monitor for any sensitive cultural materials uncovered during construction
Aesthetics	None
Air quality	None
Social impact/environmental justice	None
Noise	None
Transportation	None
Human health and safety	None
Corridor analysis	None

Table 4-1 Mitigation for the Proposed Action

5.0 COORDINATION, CONSULTATION, AND CORRESPONDENCE

5.1 PUBLIC SCOPING PROCESS

The goal of public involvement is to gain public understanding and participation in the analysis and decision-making process for the proposed action.

APREC and its consultants compiled a mailing list of potentially interested parties, including government agencies, stakeholders, and Tribes in December 2020.

Over the course of the next several months APREC consultants coordinated with many local, state, and federal agencies as part of the CEQA/NEPA scoping process. See Table 5-1.

In October 2021 the Land Use section of San Bernardino County circulated detailed information on the project to 34 stakeholders, including several other agencies and the community at large. Feedback that was received and several modifications were incorporated into the project design.

In April 2022 APREC formally submitted a CEQA Initial Study draft to the County of San Bernardino recommending a Negative Declaration.

In July 2022, APREC conducted public scoping to fulfill federal NEPA requirements for this Environmental Assessment. A list of agencies and tribes contacted as part of the CEQA/NEPA scoping process, and any responses received are included in Table 5-1.

Table 5-1 lists the 20 organizations APREC contacted during the public scoping process and identifies the ones that responded with comments (a total of seven organizations). APREC has evaluated comments submitted by September 19, 2022 and has incorporated them into this document as appropriate.

The process did not involve the preparation of a separate scoping report. All correspondence is documented in Appendix I.

Organization Name	Type	Responded to Scoping Letter	
		CEQA	NEPA
Town of Apple Valley:			
Traffic Section	Local	Yes	No
Town Manager	Local	No	No
Fire Dept	Local	Yes	No
Building & Safety	Local	No	No
Mojave Desert AQMD	Local	Yes	No
Mojave Water Board	Local	Yes	Yes
Indian Tribes:			
Chemehuevi Indian Tribe	Tribe	Yes	Yes
Morongo Mission Indians	Tribe	No	No
Quechan Tribe of Fort Yuma	Tribe	Yes	Yes
San Fernando Mission Indians	Tribe	No	No
San Manuel Mission Indians	Tribe	Yes	No
Serrano Mission Indians	Tribe	No	No
Twenty-Nine Palms Mission Indians	Tribe	No	No
California Agencies			
CA DFW	State	No	Yes
State Historic Preservation Office	State	Yes	Yes
Caltrans	State	No	Yes
U.S. Government Agencies			
U.S. FWS	Federal	No	Yes
U.S. Army Corps of Engineers	Federal	No	Yes
USDA	Federal	No	Yes
BLM	Federal	No	No

Table 5-1 Agencies, Tribes, and Other Stakeholders Contacted During the Public Scoping Process

5.2 TRIBAL CONSULTATION

In January 2021, as part of the CEQA and NEPA process, the Native American Heritage Commission was contacted and they provided contact information for Indian tribes with interest in the study area. In March 2021, an email and a letter was sent to each interested tribe. Two responses (San Manuel and Quechan) were received and neither group requested further participation in the project.

In July 2022, additional NEPA-Scoping letters were sent to each tribe with a copy of the cultural resources study and a request if the recipient had concerns with the project. One response was received from the Quechan THPO indicating that the project had no impact on their interests.

On July 22, 2022, the Chemehuevi tribe was contacted and they indicated there was no need to engage in further Section 106 consultation, but they requested that a tribal monitor be present during initial ground disturbing activities.

On August 4, 2022, APREC sent a letter with a recommendation of no historic properties affected to all 9 Indian tribes No other responses have been received from the Tribes. Due to the interest in the project and area, consulting parties will be solicited in development and implementation of an inadvertent discovery plan.

5.3 ADDITIONAL PUBLIC INVOLVEMENT

This EA will be made available to the public for a 14-day public review and comment period. The availability of this document for review and comment will occur when this document is published in the Apple Valley News. A copy of the EA will also be available at the Apple Valley Public Library at 14901 Dale Evans Pkwy, Apple Valley, CA 92307, and will be posted on the RUS project website: https://www.rd.usda.gov/resources/environmentalstudies/assessments. Once RUS has reviewed and evaluated public comments on the project, the agency will issue its environmental decision related to the project.

If RUS issues a FONSI for the EA, a notice will be published in the Apple Valley News informing the public of RUS's finding and the availability of the final EA and FONSI. The notice will be prepared in accordance with RUS guidance. RUS is using its NEPA procedures to meet its responsibilities to solicit and consider the views of the public during review under Section 106 of the NHPA and its implementing regulation. Accordingly, public comments submitted during NEPA scoping will inform RUS decision-making in Section 106 review.

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7.0 LIST OF PREPARERS

Table 7-1. RUS Staff and Consultants Involved in the Preparation of the EA:

Name	Organization	Role
Elisa Sims Albury	Rural Utilities Service	Environmental Protection Specialist
Jeffrey D. Larson, MSc, RPA	Rural Utilities Service	Archaeologist & Historian
David Weisman	APREC	Document Coordination
David Larson, PE	Redbrick Solutions	Civil Engineering
Toby Waxman	Entitlement Strategies	Regulatory Compliance, Hazardous Materials, Mineral Resources
Michael Baksch, PhD	Tierra Environmental	Cultural & Tribal Resources
Randall Arnold	RCA Associates	Biological Resources
Ace Malisos	Kimley-Horn & Assoc.	Greenhouse Gas Emissions/Air Quality
Edward Lamont, CEG	GeoTek	Geology & Soils
Christopher Jean, INCE	Christopher Jean & Assoc.	Noise/Acoustics
Thomas Wheat, PE, TE	TJW Engineering	Traffic