Mitigated Negative Declaration

Adelanto Solar Power Project
Adelanto, California

Los Angeles Department of Water and Power
111 North Hope Street
Los Angeles, California 90012

May 2010

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ABBREVIATIONS AND ACRONYMS

AAQS	Ambient air quality standards
AC	alternating current
AMSL	above mean sea level
ARB	Air Resources Board
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute
ASPP	Adelanto Solar Power Project
BMPs	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALUP	Comprehensive Airport Land Use Plan
CAPCOA	California Air Pollution Control Officers Association
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CH_4	Methane
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
dBA	A-weighted decibels
DC	direct current
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
GCC	Global Climate Change
GHG	Greenhouse gas
GWP	Global warming potential
HFC	Hydrofluorocarbon
HI	Hazard Index
IPA	Intermountain Power Agency
IPCC	United Nations Intergovernmental Panel on Climate Change
IS	Initial Study
kV	Kilovolt
LABC	Los Angeles Building Code
LADWP	Los Angeles Department of Water and Power
LORS	Laws, ordinances, regulations, and standards
LOS	Levels of service
MDAQMD	Mojave Desert Air Quality Management District
MI	Manufacturing and industrial use
MMRP	Mitigation Monitoring and Reporting Program

MND	Mitigated Negative Declaration
MW	Megawatt
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEC	National Electrical Code
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
OHP	Office of Historic Preservation
PCE	Passenger car equivalent
PFC	perfluorocarbons
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PV	Photovoltaic
RPS	Renewable Portfolio Standard
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCLA	Southern California Logistics Airport
SIP	State Implementation Plan
SF_6	Sulfur hexafluoride
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminants
TIA	Traffic Impact Analysis
UL	Underwriter Laboratories
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1.0 INTRODUCTION

1.1 PROPOSED PROJECT

The Los Angeles Department of Water and Power (LADWP) proposes to construct and operate the Adelanto Solar Power Project (ASPP) to help the City of Los Angeles meet its renewable energy goals. The ASPP would be a 10-megawatt (MW) solar photovoltaic (PV) power project located on LADWP-owned land within the existing, fenced Adelanto Switching Station and DC Converter Station (Adelanto Station), which is located in the City of Adelanto, San Bernardino County, California (see *Figure 1: Project Vicinity Map*, and *Figure 2:Adelanto Switching Station and D.C. Converter Station*). The area identified for development of the ASPP includes approximately 42.5 acres of land in the southwest portion of the Adelanto Station. However, the actual PV panels and the ancillary facilities necessary for project operations (including roads, transformers, inverters, and electrical cables) may occupy less than the total acres available. It is anticipated that construction for the project would begin in the summer of 2010 and be completed by the end of 2010.

1.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed ASPP constitutes a project as defined by CEQA (California Public Resources Code §§21000 et seq.). LADWP, as a municipal utility, will fund, implement, and operate the proposed project and will therefore act as the CEQA lead agency. This Mitigated Negative Declaration (MND) has been prepared in accordance with CEQA guidelines to determine the potential environmental effects of the project and identify feasible mitigation measures required to reduce any effects that are determined to be significant to a less than significant level.

1.3 PROJECT NEED AND BACKGROUND

The California Global Warming Solutions Act (Assembly Bill 32) was passed by the Legislature in 2006, establishing a statewide goal of reducing greenhouse gas emissions to 1990 levels by the year 2020 and to 80 percent below 1990 levels by 2050. The City of Los Angeles has further established the goal of reducing greenhouse gas emissions to 35 percent below 1990 levels by 2030. A primary source of greenhouse gases, particularly carbon dioxide (CO_2), is the combustion of fossil fuels for electrical generation. In response, the California Legislature passed Senate Bill 1078 (2002), which implemented a Renewable Portfolio Standard (RPS) program for the state. The goal of the RPS program, as modified by Senate Bill 107 (2006), required attaining 20 percent aggregate annual retail energy sales from eligible renewable resources by 2010. Municipal utilities, such as LADWP, were exempted from the specific provisions set forth in the bills, which applied only to investor-owned utilities; however, in 2005, LADWP nonetheless adopted an RPS to provide 20 percent of its energy sales to retail customers from renewable resources by 2010. In addition, through Executive Orders S-14-08 (2008) and S-21-09 (2009), the Governor of California has established a target RPS for the state of 33 percent by 2020 and has included publically-owned as well as investor-owned utilities under this mandate. LADWP has furthermore established an RPS aimed at achieving 35 percent of its energy sales from renewable power resources by 2020.

Against the backdrop of this need to reduce the combustion of fossil fuels for energy production, demand for energy continues to increase in the LADWP service area. Despite considerable progress in conservation in the City of Los Angeles through both energy efficiency and load management programs, the overall demand for electricity has continued to grow at a moderate pace since the early 1990s, driven primarily by increases in population. Population in Los Angeles is projected to expand by approximately

25 percent between 2000 and 2025. As a result, the annual growth in demand for electricity in the City is expected to increase at an average annual rate of about 0.6 percent over the next 20 years, regardless of increasingly aggressive conservation efforts. It is estimated that between the years 2009 and 2030, growth in peak demand will necessitate an average increase of 62 MW in generation capacity per year. This would represent a 1,300 MW, or approximately 23 percent, increase in capacity (from approximately 5,650 MW in 2009 to 6,950 MW in 2030).

In the face of this increasing energy demand and the need to reduce its dependence on fossil fuels, LADWP has embarked on an aggressive renewable power program that includes solar, wind, geothermal, biomass, and small hydroelectric power sources. The Department's Solar Incentive Program has encouraged the development of over 19 MW of solar power through both residential and commercial rooftop installations since 1999. In addition, the Department is currently developing a program to significantly increase solar installations on large commercial and government building rooftops as well as on City-owned property within the Los Angeles City limits. However, in order to achieve its aggressive RPS goals and provide for increasing peak energy demand, LADWP must also implement larger-scale renewable power projects, including solar power generation facilities.

Among the key factors that influence the feasibility of implementing large-scale solar projects are solar radiation potential, land ownership, and available transmission facilities and capacity. The ASPP responds to these factors based on its location in the high-solar resource Mojave Desert and on the generally level terrain and lack of vertical obstructions at and surrounding the project site. The project would also utilize LADWP-owned property and existing transmission facilities that possess adequate capacity to deliver the energy generated by the project to load centers.

1.4 ENVIRONMENTAL DOCUMENT FORMAT AND CONTENT

This MND contains an introduction, a project description, a CEQA environmental checklist, and impacts analysis and other pertinent information about study preparers, references, and monitoring plans. The document is comprised of six sections and appendices.

The introduction provides an overview (Section 1) of the project and review requirements. A description of the proposed project in Section 2 provides a discussion of project components. The Environmental Evaluation and CEQA Checklist is included as Section 3 and provides the analysis of environment impacts that could occur from project implementation. When the proposed project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the proposed project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts and any mitigation measures that would reduce those impacts to a less than significant. A Mitigation Monitoring and Reporting Program is provided in Section 4. A list of references and a list of the Lead Agency staff and consultants participating in the study are provided in Sections 5 and 6, respectively. Technical studies prepared in association with this MND are included as appendices.

FIGURE 1 PROJECT VICINITY MAP.

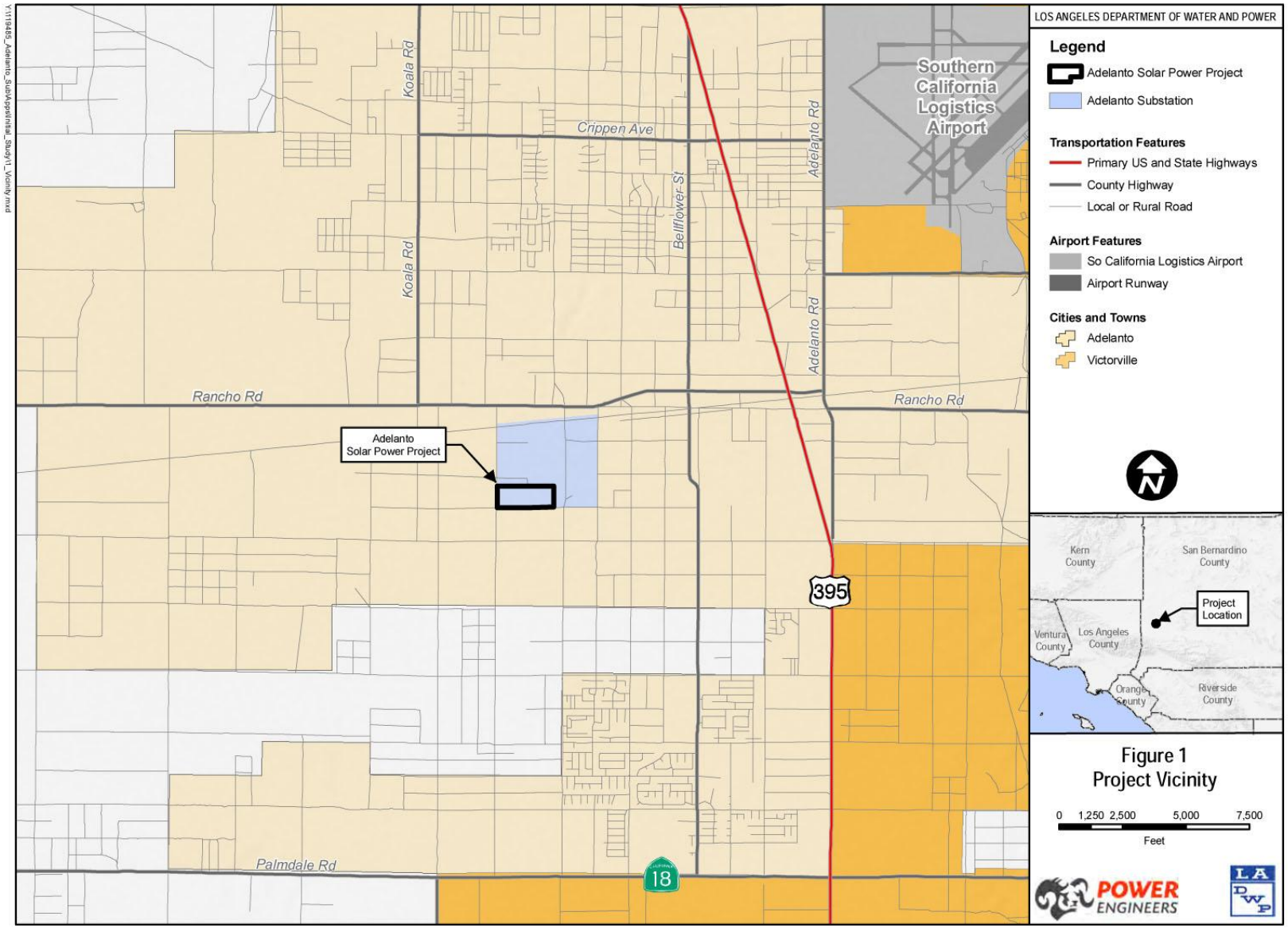
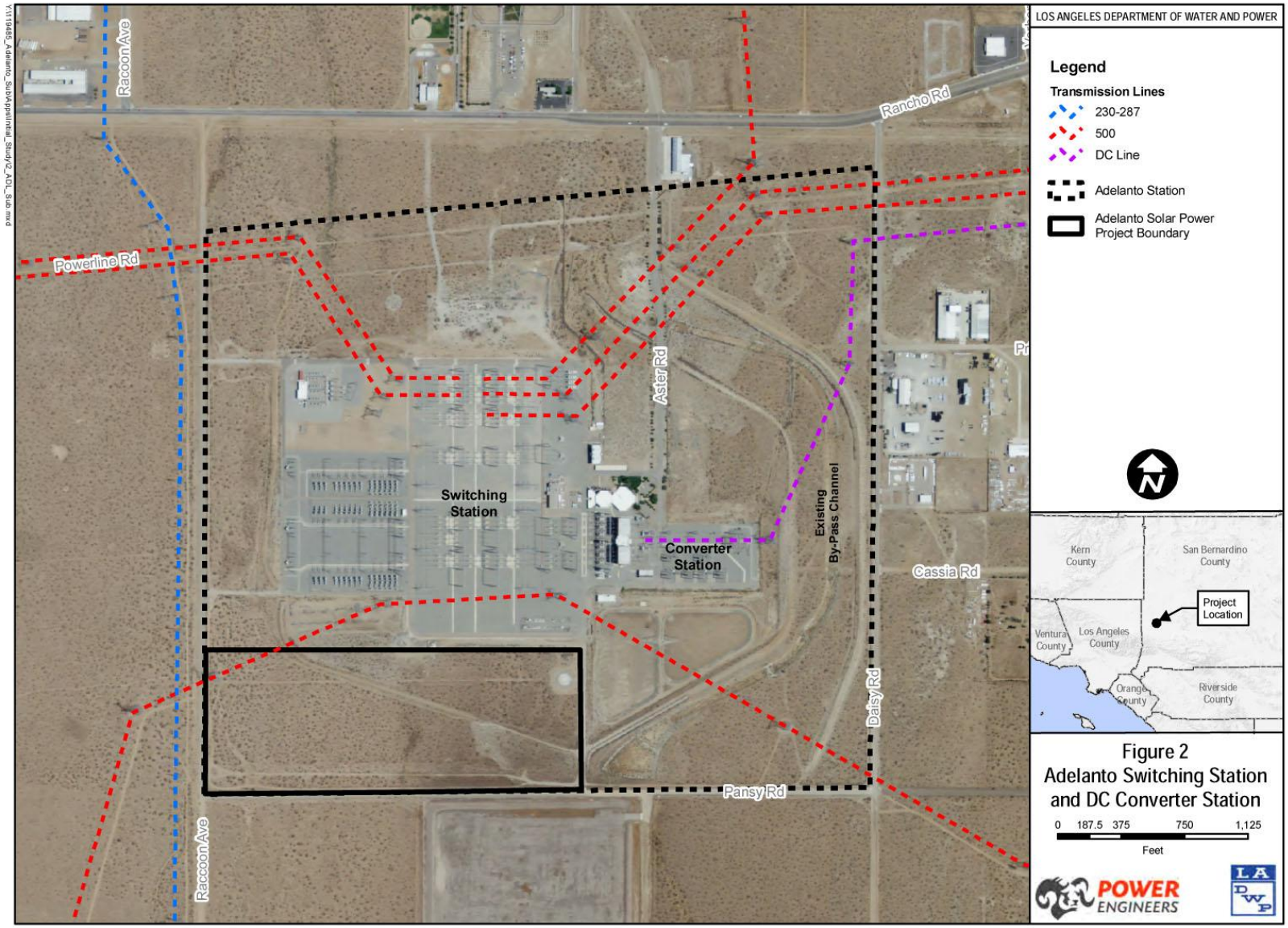


FIGURE 2 ADELANTO SWITCHING STATION AND DC CONVERTER STATION.



2.0 DESCRIPTION OF THE PROPOSED PROJECT

2.1 EXISTING ADELANTO STATION

The Adelanto Station first began operations in 1986. It consists of approximately 300 acres and includes both the Adelanto Converter Station, owned and operated by the Intermountain Power Agency (IPA), and the Adelanto Switching Station, owned and operated by LADWP. At the converter station, power delivered over the 500-mile high-voltage direct current (DC) Southern Transmission System from the Intermountain Generating Station in Utah is changed from DC power to alternating current (AC) power to be transmitted to load centers throughout Southern California. The Adelanto Switching Station is the interface between the converter station and a regional AC transmission network that consists of five separate 500-kilovolt (kV) transmission lines.

The Adelanto Station is located in a sparsely developed section of the city zoned for manufacturing and industrial use (MI).[1] The station property is surrounded primarily by paved roads, which receive minimal traffic on the west, south, and east, and light traffic on the north. Adjacent uses include vacant property to the west, southwest, south, and southeast; vacant property and a pipe manufacturing facility to the east; vacant property, a San Bernardino County fire station, the Adelanto Community Correctional Facility, and a California Department of Corrections and Rehabilitation facility to the north; and industrial facilities to the northeast (see *Figure 3: Surrounding Land Uses*). A few isolated residences are located approximately 0.5 miles to the east of the Adelanto Station; otherwise, the nearest residential developments to the station lie over a mile to the north, southeast, and south.

The converter and switching facilities are located in the central part of the Adelanto Station, occupying approximately 100 acres of paved or graveled surfaces. These include towers and other large-scale switching equipment, operations and maintenance buildings, and two large converter equipment buildings. These facilities are located a minimum of 500 feet from the property boundary. The area between the facilities and the fence line of the entire Adelanto Station is generally undeveloped except for several transmission towers and site drainage control structures consisting of earthen berms and free-standing gabion walls. Some ancillary uses, such as materials storage, evaporation ponds, and a helipad, are also located within the Adelanto Station.

2.2 PROJECT SITE

The proposed project site is located in the southwestern portion of the Adelanto Station property on currently undeveloped land between the switching station facilities and the perimeter fence line (see *Figure 4: Project Site*). Similar to the entire station property, this area is generally level, sloping downward to the north at an approximate 1.0 to 1.5 percent grade. The project site contains an earthen berm that diverts storm water flowing from the south and west around the switching station facilities. Two minor drainage courses originating at two separate road culverts located at the southwest corner of the station also transmit water northward along the western side of the property and through a portion of the project site. Vegetative cover in the project site consists of sparse desert scrub, characterized by creosote bush, but there are also a number of Joshua trees located within the limits of the site. The site is in the range of the desert tortoise, which is protected as a threatened species under both the United States and California Endangered Species Acts. The site has been classified as a low-density habitat area for tortoise in the City of Adelanto General Plan[2], and it is not located within critical tortoise habitat areas as defined by United States Fish and Wildlife Service, nor is it located within the boundaries of a designated

[1] City of Adelanto. *General Plan Land Use/Zoning Map*. 2007. Website: http://www.ci.adelanto.ca.us/vertical/Sites/%7BB5D4A1FE-8A01-4BEF-B964-5A44B9339C72%7D/uploads/%7BEA5ECBAA-2728-42F5-A9B0-2AE72BC22CA1%7D.PDF

[2] City of Adelanto. *Figure VII-2, Desert Tortoise Density, Conservation/Open Space Element of the Adelanto General Plan*. 1994.

Desert Wildlife Management Area created under the Desert Tortoise Recovery Plan intended to restore self-sustaining populations of tortoise in the Mojave Desert. The project site is also within the range of the Mohave ground squirrel, which is protected as a threatened species under the California Endangered Species Act (CESA). However, the site is not located within the Mohave Ground Squirrel Conservation Area established by the United States Bureau of Land Management under the West Mojave Plan.[3]

2.3 PROJECT FACILITIES

The project would utilize crystalline silicon solar PV panel modules that would be ground-mounted on a lightweight steel or aluminum structural framework (see *Figure 5: Pile Supported Solar Panel Framework*). The project would require approximately 50,000 individual panel modules that would be rated at about 200 watts capacity each. The panels would be mounted at an angle of up to 20 degrees from horizontal to efficiently absorb solar radiation. The mounted panels would have a low profile, with the high end of the tilted panel less than eight feet above the ground and the low end two to three feet above the ground. The structural framework would rest on aluminum or steel anchors that would be screwed or vibrated into the ground to a depth of six to eight feet, depending on geotechnical conditions. This method would minimize disturbance to the existing ground. The area beneath the panels would remain essentially permeable surface. Panels would be assembled into rows on the support framework, and the individual rows would be arranged into larger arrays that together would form a power block ranging from 0.5 MW to 1 MW in capacity, depending on the exact type and layout of equipment used (see *Figure 6: Typical PV Solar Block Configuration*). The exact arrangement of the arrays would not be established until detailed project design was completed. However, the project would remain within the boundaries of 42.5-acre area designated in the southwestern portion of the station, except for ancillary elements, such as underground cabling and switchgear required to connect the solar generation facilities to the existing converter station.

Each solar array power block would include one to two DC to AC inverter units and a transformer unit. The inverter units would be pre-assembled with the transformer and ancillary equipment onto a single steel framework skid, which would be either pad-mounted or supported by drilled concrete piers. The pre-assembled power block skid would be approximately 8.5 feet tall, 9 feet wide, and 32 feet long. The transformer would step up the power from each array to 4160 volts. Wiring from the solar PV modules would be organized into series DC circuits, and the circuits would be combined and connected to each inverter. The cabling system interconnecting the solar modules would be accomplished according to standards established by the National Electrical Code, including PV-solar rated wiring. The cabling would be either direct burial underground feeders or conduit-encased electrical cable, minimizing shading on the panels. The energy would be transmitted to IPA's converter station to be further stepped up to 500 kV and delivered to the LADWP's existing high-voltage AC transmission network connected to the station.

Because the project site is located in a seismically active region and has the potential to be subjected to strong ground shaking associated with earthquake events, all proposed project structures, including the PV modules, module supports, structural frames, electrical equipment racks, equipment enclosures, equipment anchorages, and foundations, including nonstructural components that are permanently attached to structures and their supports and attachments, will be designed and fabricated to resist the effects of earthquake motions in accordance with the requirements of ASCE/SEI (American Society of Civil Engineers/Structural Engineering Institute) 7-05, *Minimum Design Loads for Buildings and Other Structures*, and the 2008 edition of the *City of Los Angeles Building Code* (LABC). Structures that require special consideration of their response characteristics and environment that are not addressed by ASCE/SEI 7-05 or the 2008 LABC, such as buried utility lines and other structures that may be subject to other regulations, will be evaluated using special design criteria. Structural components supporting or

[3] Leitner, Philip. *Figure 1, Current Status of the Mohave Ground Squirrel*. Transactions of the Western Section of the Wildlife Society 44:11-29. 2008. Website: http://www.tws-west.org/transactions/2008/Leitner_low%20res.pdf

enclosing electrical equipment will be designed with a Category IV Importance Factor of 1.5, as indicated in Table 11.5-1 of ASCE/SEI 7-05. All other structural components will be designed with a Category III Importance Factor of 1.25, as indicated in Table 11.5-1 of ASCE/SEI 7-05. Differential movement between structures will be accommodated by the use of expansion joints, flexible cabling, and other devices as necessary to accommodate seismic motion. Non-building structures will conform to the requirements of ASCE/SEI 7-05, Chapter 15, *Seismic Design Requirements for Non-Building Structures*.

Due to the possibility of differential settlement or surface displacement from ground failure, including liquefaction or lateral spreading as a result of strong seismic shaking, the Seismic Design Category for the project facilities will be determined by geotechnical investigation that will be prepared during final project design in accordance with the provisions of ASCE/SEI 7-05 Section 11.8.2, *Geotechnical Investigation Report for Seismic Design Categories C through F*.

In addition, all project facilities will meet wind load requirements specified in Section 1609 of the 2008 LABC, and will be designed for Exposure Category D, defined in Section 1609.4 of the 2008 LABC. The Basic Wind Speed will not be less than the Basic Wind Speed acceptable to the City of Adelanto Department of Building and Safety, but in any case will not be less than 90 miles per hour.

2.4 PROJECT CONSTRUCTION

Construction of the proposed project would take approximately five months to complete, from mid-summer 2010 to the end of 2010. Construction activities would be limited to Mondays through Fridays from 7:00 a.m. to dusk. No nighttime, weekend, or holiday work is anticipated, but LADWP security personnel would be available during construction. Construction of the solar facilities would consist of several tasks, including mobilization; clearing, grading, and trenching; construction of the framework foundations and frameworks; installation of the panels and system wiring; installation of the inverters and transformers; and cabling and connection to the switching station. While these tasks are generally sequential in that some must precede others at a given location, a certain amount of overlap would likely occur in different locations within the project site as construction proceeds. It is anticipated that during the peak of construction activity, up to 60 workers may be present on site on a given day. This would generally occur during the last three months of the projected five-month construction schedule, when up to 10 five-person crews and 10 additional construction or supervisory personnel would be required. During the initial two months of construction, it is anticipated that approximately 30 personnel would be on site on a given day (See Table 1).

TABLE 1
CONSTRUCTION WORKER VEHICLE COMMUTE TRIPS

	Aug 2010	Sep 2010	Oct 2010	Nov 2010	Dec 2010
Daily Total (Round-trip)	30	30	60	60	60
Monthly Total (Round-trip)	630	630	1260	1260	1260

FIGURE 3 SURROUNDING LAND USES

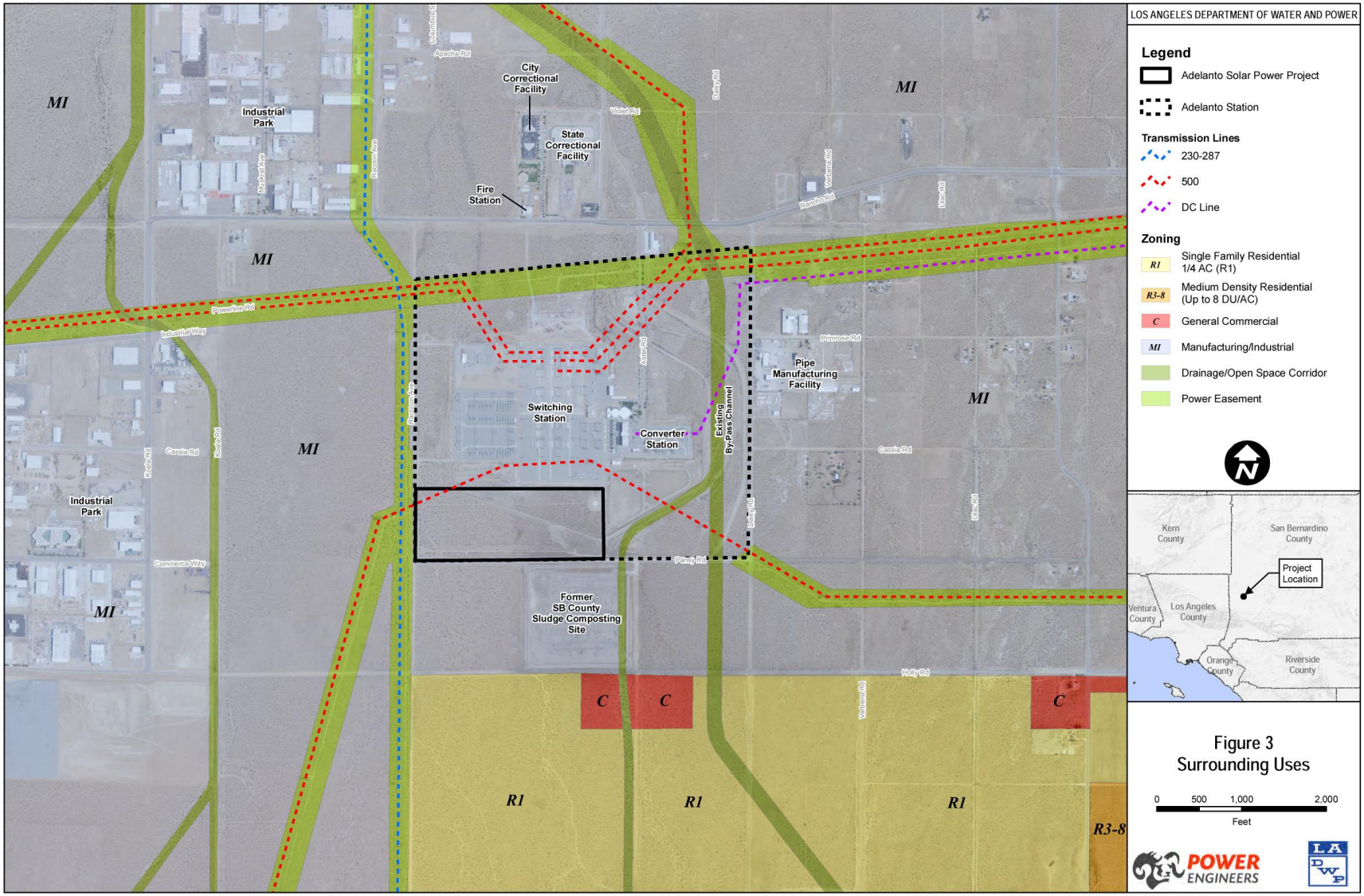


FIGURE 4 PROJECT SITE

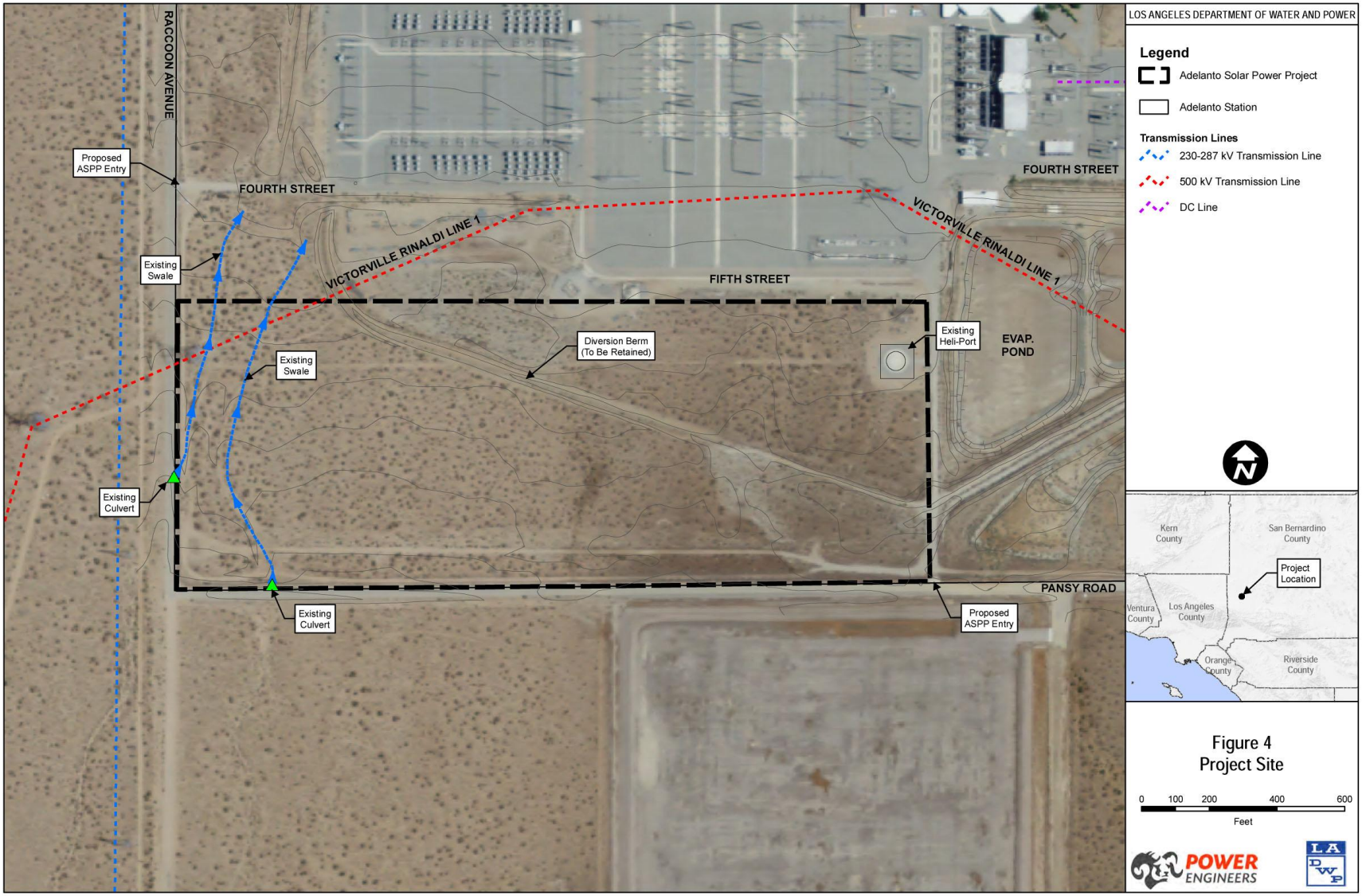
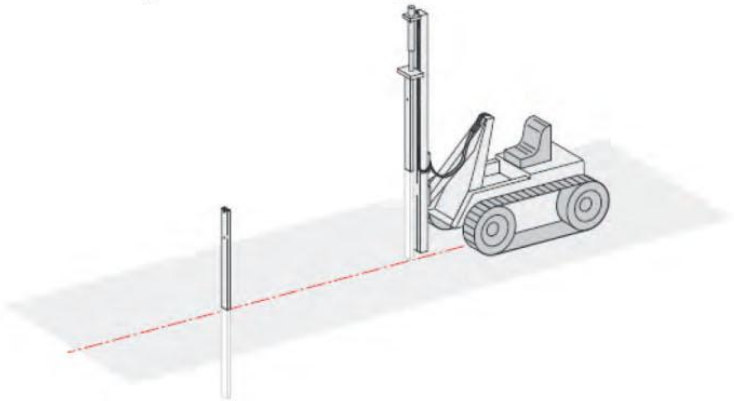


FIGURE 5 PILE SUPPORTED SOLAR PANEL STRUCTURE

Typical solar panel frame with piles

Piles would be pressed or screwed into the ground



LOS ANGELES DEPARTMENT OF WATER AND POWER

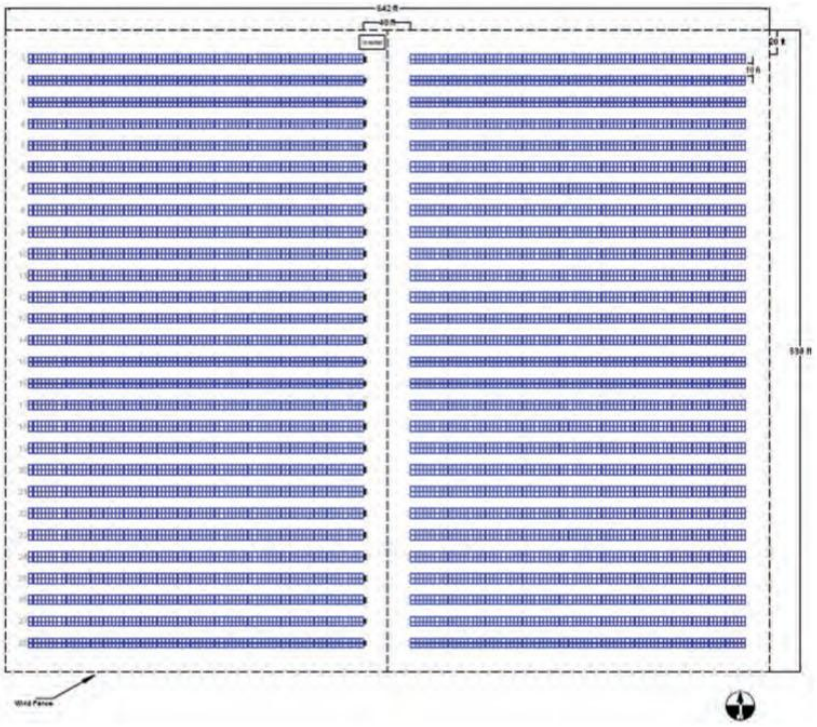
Figure 5
Typical Pile Supported Solar Panel Framework

POWER ENGINEERS

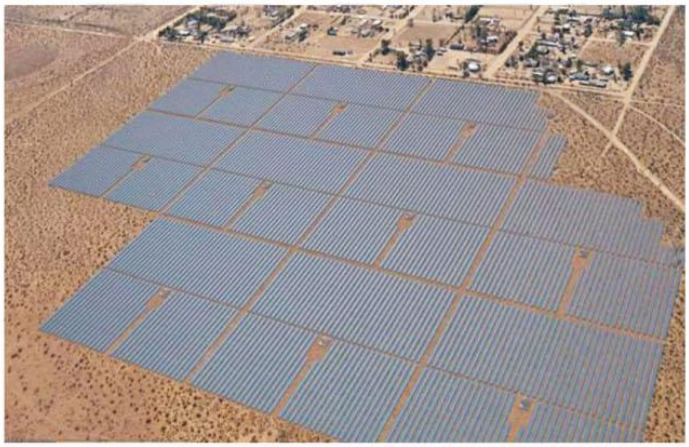
LA DWP

FIGURE 6 TYPICAL PV SOLAR BLOCK CONFIGURATION

Typical 0.5 MW PV Block



Typical solar project layout showing assembly of power blocks.



LOS ANGELES DEPARTMENT OF WATER AND POWER

Figure 6
Typical PV
Solar Block Configuration

POWER ENGINEERS

LA DWP

Other than the delivery of materials and supplies to the site, all construction activities, including supplies laydown, soil excavation and stockpiling, equipment storage, and worker parking, would be confined within the project site or other already disturbed areas of the Adelanto Station. The general truck route during construction would be via Rancho Road (the east-west road north of the station) from Highway 395, which is located approximately 1.5 miles east of the station (see *Figure 1: Project Vicinity*). No road closures are anticipated during construction. Direct access to the project site would be from existing gates off Pansy Road (the southern boundary of the station) and/or Raccoon Avenue (the western boundary of the station). A very limited number of oversize loads may be required to deliver large equipment to the site at the outset of construction and remove the equipment after construction is completed. However, most deliveries would be made with standard three-axle flatbed trucks. Construction materials and supplies would be delivered to the site in a staged manner to minimize the land area required for the laydown. Delivery of materials is expected to be made on flatbed trailers in palletized form and unloaded at the site. During months two through four, approximately 100 total truck trips would be required to deliver materials and supplies to the project site, which would result in an average of about eight truck round-trips per week. To ensure that adequate materials and supplies are available when needed, most of these deliveries may occur early in a given week, resulting in a daily peak of up to four truck round-trips. During months one through four, an average of less than one concrete truck delivery per day would be made to the site for the foundations of the inverters and transformers. During month two only, 24 dump truck trips would be required to provide gravel for project site roadbeds (see Table 2).

Various types of construction equipment would be required during project construction, including graders, bulldozers, backhoes, dump trucks, water trucks, and pickup trucks. Construction equipment that may be used at various times on the project is listed with estimated hours of operation in Table 3.

TABLE 2
CONSTRUCTION TRUCK ROUND-TRIPS

Truck Description	Total Trips	Peak Trips/Month	Peak Trips/Week	Peak Trips/Day
Flatbed Trucks (months 2-4)	99	33	8	4
Concrete Trucks (months 1-4)	60	15	4	2
Dump Trucks (month 2 only)	24	24	20	4
Total	**183**	**72**	**32**	**10**

TABLE 3
ON-SITE CONSTRUCTION EQUIPMENT

Equipment Description	Quantity	Operating Days	Operating Hours/Day	Hours of Operation per Month				
				Aug	Sep	Oct	Nov	Dec
3/4 Ton Pickup	6	105	2	252	252	252	252	252
1 Ton Pickup	4	105	2	168	168	168	168	168
CAT D8 Dozer	2	42	4	168	168	0	0	0
CAT 14H Motor Grader	1	42	2	42	42	0	0	0
CAT 563 Roller	1	42	4	84	84	0	0	0
Compact Excavator	2	63	4	168	168	168	0	0
4000-Gallon Water Truck	1	63	4	84	84	84	0	0
Cable Trencher	1	63	8	168	168	168	0	0
CAT 416 Rubber Tire Backhoe	2	105	4	168	168	168	168	168
Pitman Truck Crane	4	63	4	0	0	336	336	336
Total	**24**			**1302**	**1302**	**1344**	**924**	**924**

As discussed above, the project site is relatively level within the designated solar array field area, and minimal site grading is anticipated. Storm water is currently directed on the surface to the northwest corner of the proposed project site, from which it is conducted along the western side of the switching station property. Existing site drainage structures include an earthen berm, which was installed at the time that the switching station was built to redirect natural sheet flow around the switchyard. The solar panel arrays would be accommodated with minimal modification to the existing site topography and drainage pattern. In addition, most of the area involved in the project, including the solar array field, would remain as permeable surface. A minimum 0.5 percent slope would be required throughout the site to maintaining positive drainage and avoid standing water. It is anticipated that site drainage would continue to be handled primarily above grade and that minimal, if any, sub-grade structures would be required.

Existing site roads, which consist of unimproved dirt surfaces, run generally along the southern and western perimeter. These roads would be improved to accommodate equipment and trucks for project construction and for periodic maintenance during project operations. Some additional roads would also be required within the site to provide direct access to the solar panel arrays. The project roads would generally consist of a crushed aggregate base, but an asphalt surface road would be constructed along the south perimeter fence and along the west perimeter fence to facilitate periodic maintenance.

2.5 PROJECT OPERATIONS

No additional personnel would be required at the Adelanto Station on a daily basis to maintain and operate the project. A small number of personnel may be required during brief periods when certain maintenance operations must be performed. Routine maintenance is expected to occur during daylight hours only. The project would be monitored by automated methods to ensure that it is generating electricity to the specified capacity. Static PV arrays generate electricity without moving parts, and general maintenance requirements are characteristically low. Maintenance activities, such as troubleshooting, repairing, replacing, or optimizing system components, would occur on an event-driven basis. Occasional washing of the solar panels may be required in order to restore generation efficiency. However, such washing would be performed only as needed to maintain system performance and

manufacturers' warranties on electrical equipment. The tilted design of the solar panels will minimize the need to wash the panels.

Roadway maintenance would be minimal, since roadways are required only for periodic traffic from maintenance equipment over the life of the project. Maintenance equipment is expected to consist of light- to medium-duty utility pickup trucks and may include a towed trailer with 500 gallon water tank for PV module washing (estimated to be required once annually if necessary).

Although there is little potential for wildfires in the vicinity of the project, fire prevention would be achieved by the use of non-combustible materials, Underwriter Laboratories (UL)-rated components, and National Electric Code (NEC)-compliant installation. In addition, project components would be constructed to maintain proper clearances from other switching station structures, and site vegetation would be maintained to provide proper clearances from electrical equipment.

2.6 PERMITS AND APPROVALS

Although LADWP is exempt from obtaining approvals for project construction from local agencies, it commonly coordinates with such agencies during construction relative to:

- Grading permits and drainage control
- Water Use permit
- Roadway encroachment permits for work done in City rights-of-way
- Native vegetation removal permit (Joshua Trees)
- Observance of local truck routes
- Water Quality Management Plan

Other agencies that may review or grant permits for the proposed project potential include:

- U.S. Fish and Wildlife Service (confirmation of desert tortoise surveys)
- California Department of Fish and Game (confirmation of desert tortoise, Mohave ground squirrel, and burrowing owl evaluations)
- Regional Water Quality Control Board (RWQCB) Storm Water Pollution Prevention Plan (SWPPP) applicable to construction and post-construction
- National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB to ensure that construction site drainage velocities are equal to or less than the pre-construction conditions and downstream water quality is not worsened

3.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

3.1 AESTHETICS

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. Aesthetics. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

DISCUSSION

Would the Project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The proposed project would be entirely contained within the existing 300-acre Adelanto Switching Station and D.C. Converter Station, the perimeter of which is entirely fenced. As discussed in Section 2.0, the actual station facilities, which occupy approximately 100 acres in the central portion of the station, include large buildings as well as towers and other large-scale switching equipment. The station is located in a sparsely developed section of Adelanto zoned for manufacturing and industrial use. The station property is surrounded by paved roads, which receive minimal traffic on the west, south, and east, and light traffic on the north. Adjacent uses include vacant property to the west, southwest, south, and southeast; vacant property and a pipe manufacturing facility to the east; vacant property, a San Bernardino County fire station, the Adelanto Community Correctional Facility, and a California Department of Corrections and Rehabilitation facility to the north; and industrial facilities to the northeast. A few isolated residences are located approximately 0.5 miles to the east of the Adelanto Station; otherwise, the nearest residential developments to the station lie over a mile to the north, southeast, and south.

Scenic vistas are the panoramic public views of natural features, including views of the mountains, striking or unusual natural terrain, or historic features. Based on the scale of the project facilities, their location within an existing switching/converter station, the minimal views that would generally be available of the project site, and the general setting in the vicinity of the switching station, no substantial adverse effect on a scenic vista would occur.

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

No Impact. The proposed project would be entirely contained within the existing 300-acre Adelanto Switching Station and D.C. Converter Station. The closest officially designated scenic highway, State

Route 2 in Los Angeles County, is located approximately 18 miles to the southwest of the project site; the closest eligible state scenic highways, State Routes 58, 138, and 247 in San Bernardino County, are located approximately 14 miles to the southwest, 26 miles to the northeast, and 27 miles to the east, respectively, of the project site.[4] Therefore, the project would not damage scenic resources within a state scenic highway.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

No Impact. The proposed project would be entirely contained within the existing 300-acre Adelanto Switching Station and DC Converter Station, the perimeter of which is entirely fenced. The actual station facilities, which occupy approximately 100 acres in the central portion of the station, include large buildings as well as towers and other large-scale switching equipment. The station is located in a sparsely developed section of Adelanto zoned for manufacturing and industrial use. The station property is surrounded by paved roads, which receive minimal traffic on the west, south, and east, and light traffic on the north. Adjacent uses include vacant property to the west, southwest, south, and southeast; vacant property and a pipe manufacturing facility to the east; vacant property, a San Bernardino County fire station, the Adelanto Community Correctional Facility, and a California Department of Corrections and Rehabilitation facility to the north; and industrial facilities to the northeast. The project would be located in the southwestern portion of the property. A few isolated residences are located approximately 0.5 miles to the east of the Adelanto Station; otherwise, the nearest residential developments to the station lie over a mile to the north, southeast, and south. Based on the scale of the project facilities, their location within an existing switching/converter station, the minimal views that would generally be available of the project site, and the general setting and land use designation in the vicinity of the switching station, the project would not substantially degrade the existing visual character or quality of the site and its surroundings.

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

Less Than Significant Impact. To keep the PV cells clean and protect them from damage but still allow for the collection of sunlight that is converted into energy, the surface of solar panels are covered with a pane of glass, which can normally be a reflective material. However, solar panels employ a low-iron content glass that is specifically designed to provide high transparency to increase light transmission to the PV cells and reduce the absorption, refraction, and reflection of light by the glass. In addition, the glass used on the proposed project panels would be treated with an anti-reflective coating to further decrease reflection and increase the transmission of light through the glass to the cells. While these characteristics of the solar panel glass, intended to increase light absorption and, therefore, energy production, do not entirely eliminate reflection, the general appearance of the panels would be a dark field. Based on these properties, the reflectivity of the panels would be about 30%, which is generally similar to or less reflective than the sandy soils and many building surfaces found in the area of the project.

The proposed panels would be mounted on the support framework at an angle of approximately 10 to 20 degrees from horizontal and oriented to the south. Based on this orientation and angle, the percentage of the sunlight that would not be absorbed by the panels would be reflected at a relatively steep angle upward (ranging from approximately 60 to 70 degrees throughout the year at noon) and would not generally be visible at any distance from the panels. The greatest potential for glare from the panels to be visible at ground level would occur in the early morning and late evening when the sun is at a lower angle in the sky but when the intensity of the reflected light is also less. The low profile of

[4] California Department of Transportation. *California Scenic Highway Mapping System.* Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

the panels (less than eight feet above ground level at the upper end) would also tend to limit visible glare from the project site. Any reflection would also be momentary, based on the shifting position of the sun in the sky.

Furthermore, as discussed above, the project site is surrounded on the southwest, south, and southeast (the areas that might be most affected by glare) by undeveloped land and minimally traveled roadways. The closest developments to the south are residential areas located approximately 1.25 miles from the project site, well beyond the impact of potential glare from the panels.

Some night lighting may be installed for safety, security, and maintenance purposes at the proposed solar facilities. The level of lighting that would be required would be no greater than currently utilized at the station. The lighting would also consist of cutoff fixtures to direct light only where needed and to prevent light spillover upward and to the sides.

Based on the location of the project in relation to adjacent uses and more distant uses and on the nature of project facilities, including low-glare solar panels and cutoff night lighting fixtures, the proposed project would not create new sources of substantial light or glare that would result in a significant adverse effect to day or nighttime views in the area.

3.2 AGRICULTURAL AND FOREST RESOURCES

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

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

DISCUSSION

Would the Project:

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

No Impact. The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. The project would be located within an existing 300-acre electrical switching/converter station. The project site does not contain land that is designated as Prime, Unique Farmland, or Farmland of Statewide Importance as mapped by the Farmland Mapping and Monitoring Program.[5]

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The proposed project site is located in an area zoned for manufacturing and industrial uses (MI).[6] The proposed project site is not currently and never has been used for agricultural uses, and is not subject to a Williamson Act contract.

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

No Impact. The project would be located within an existing 300-acre electrical switching/converter station. The site and surrounding properties are zoned for manufacturing and industrial uses and are currently either used for such purposes or vacant. The site does not support native tree cover or timber resources and is therefore not considered forest land, timberland, or a timberland production zone as defined in the California Public Resources Code or Government Code.

[5] State of California, Division of Land Resource Protection. *Farmland Mapping and Monitoring Program*. Website: http://www.consrv.ca.gov/DLRP/fmmp/index.htm,

[6] Op. cit., City of Adelanto.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. See discussion under Item 3.2(c).

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

No Impact. The project would be located within an existing 300-acre electrical switching/converter station. The site and surrounding properties are zoned for manufacturing and industrial uses and are currently either used for such purposes or vacant. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on or in the vicinity of the proposed project site. Therefore, there would be no potential for construction or operation of the proposed project to convert farmland, either directly or indirectly, to non-agricultural use.

3.3 AIR QUALITY

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. Air Quality. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentration?	☐	☐	☒	☐
e) Create objectionable odors that would affect a substantial amount of people?	☐	☐	☐	☒

DISCUSSION

The principal air quality issue stemming from the proposed project is related to air pollutant emissions generated during construction of the proposed facility. The firm of Scientific Resources Associated was retained to evaluate emission and air pollutant impacts generated by the ASPP. Greenhouse Gas

emissions are addressed in Section 3.7 of this MND. The Air Quality Technical Report[7] that provides the basis of the conclusions presented in this section is contained in Appendix 2.

The Federal Clean Air Act (CAA) and its subsequent amendments establish air quality regulations and the National Ambient Air Quality Standards (NAAQS) and delegate the enforcement of these standards to the states. In California, the Air Resources Board (ARB) is responsible for enforcing air pollution regulations. The ARB has in turn delegated the responsibility of regulating stationary emission sources to regional air agencies. In the Adelanto area, which is located in the Western Mojave Desert Area, the Mojave Desert Air Quality Management District (MDAQMD) has this responsibility. The CAA establishes air quality planning processes and requires areas in nonattainment of an NAAQS to develop a State Implementation Plan (SIP) that details how the state will attain the standard within mandated time frames. The requirements and compliance dates for attainment are based on the severity of the nonattainment classification of the area. In California, the ARB is responsible for enforcing both the federal and state air pollution standards.

Areas that do not meet the NAAQS or California Ambient Air Quality Standards (CAAQS) for a given criteria pollutant are designated as "nonattainment areas" by the US Environmental Protection Agency (EPA) and/or the ARB. Further classifications are given to nonattainment areas to identify the severity and number of violations experienced, and the year in which attainment is anticipated based on implementation of attainment plans. The Western Mojave Desert Area is considered a moderate nonattainment area for the 8-hour ozone (O_3) NAAQS; however, a large portion of O_3 exceedances in the Western Mojave Desert Area are attributable to O_3 transport from the South Coast Air Basin. The area is also designated as a moderate nonattainment area for the NAAQS for respirable particulate matter (PM_{10}). The Western Mojave Desert Area is also considered a nonattainment area for the CAAQS for O_3, fine particulate matter ($PM_{2.5}$), and PM_{10}. The area is considered unclassified or in attainment for all other NAAQS and CAAQS criteria pollutants.

The ARB and the MDAQMD operate a series of ambient air quality monitoring stations throughout the Western Mojave Desert Area. The closest monitoring site to the ASPP is located at 14306 Park Avenue in Victorville. The Victorville monitoring station measures O_3, PM_{10}, $PM_{2.5}$, carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Table 4 provides a summary of background air quality representative of the project region.[8]

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. A project would conflict with the air quality management plan if any of the following were to occur (based on MDAQMD CEQA guidelines and Federal Conformity guidelines):

1. Generates total emissions (direct and indirect) in excess of the MDAQMD numerical thresholds;
2. Generates a violation of any ambient air quality standard when added to the local background;
3. Does not conform with the applicable attainment or maintenance plan;
4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1.

[7] Scientific Resources Associated, 2010, *Air Quality Technical Report Adelanto Solar Power Project*, Appendix 2
[8] California Air Resources Board website; http://www.arb.ca.gov/adam/php_files/aqdphp/topfourdisplay.php

The proposed project's air quality impacts are mainly attributable to the construction activity for the 10 MW solar power plant, including mobilization; clearing, grading, and trenching; construction of the framework foundations and frameworks; installation of the panels and system wiring; installation of the inverters and transformers; and cabling and connection to the switching station. Operational impacts may include inspection and maintenance operations, which would be minor.

TABLE 4
REPRESENTATIVE AIR QUALITY DATA
ADELANTO SOLAR POWER PROJECT AREA (2004-2008)

Air Quality Indicator	2004	2005	2006	2007	2008
Ozone (O_3)(1)					
Peak 1-hour value (ppm)	0.111	0.131	0.136	0.107	0.109
Days above state standard (0.09 ppm)	8	16	9	7	16
Peak 8-hour value (ppm)	0.090	0.107	0.105	0.090	0.098
Days above state standard (0.070 ppm)	39	53	47	45	59
Days above federal standard (0.075 ppm)(1,3)	19	33	28	27	30
Particulate matter less than or equal to 10 microns in diameter (PM_{10})					
Peak 24-hour value (µg/m3)	56	61	62	358	77
Days above state standard (50 µg/m3)	1	1	2	4	2
Days above federal standard (150 µg/m3)	0	0	0	1	0
Annual Average value (ppm)	28.0	26.1	30.4	35.9	27.0
Particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)(2)					
Peak 24-hour value (µg/m3)	34	27	22	28	19
Days above federal standard (35 µg/m3)	0	0	0	0	0
Annual Average value (ppm)	10.7	9.6	10.3	9.7	*
Carbon Monoxide					
Peak 8-hour value (µg/m3)	1.70	1.63	1.56	1.61	1.04
Days above federal standard (9 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
Peak 1-hour value (ppm)	0.080	0.077	0.079	0.071	0.074
Days above state standard (0.18 ppm)	0	0	0	0	0
Annual Average value (ppm)	0.021	0.019	0.020	0.018	0.016
Sulfur Dioxide (SO_2)					
Peak 24-hour value (ppm)	0.003	0.003	0.005	0.005	0.002
Days above state standard (0.04 ppm)	0	0	0	0	0
Days above federal standard (0.14 ppm)	0	0	0	0	0
Annual Average value (ppm)	0.000	0.000	0.000	0.000	0.000

Notes: (1) The federal O3 standard was revised downward in 2008 to 0.075 ppm.
(2) The federal PM2.5 standard was revised downward in 2007 to 35 µg/m3.
(3) The federal eight-hour ozone standard was previously defined as 0.08 ppm (1 significant digit). Measurements were rounded up or down to determine compliance with the standard; therefore, a measurement of 0.084 ppm is rounded to 0.08 ppm. The 8-hour ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to the standard.
ppm = parts per million; µg/m3 = micrograms per cubic meter; * = not available
Source: http://www.arb.ca.gov/adam/php_files/aqdphp/topfourdisplay.php

Construction. Emissions of pollutants such as fugitive dust and heavy equipment exhaust that are generated during construction are generally highest near the construction site. Emissions associated with construction would include the following:

- Emissions of fugitive dust from surface disturbance activities
- Emissions of combustion pollutants from heavy construction equipment

- Emissions of combustion pollutants from worker vehicles
- Emissions of combustion pollutants from heavy-duty vehicles transporting construction materials and equipment to the site

Using information provided in the project description about construction worker traffic, materials deliveries, and onsite construction equipment, emissions from heavy equipment used in construction of the ASPP were estimated based on emission factors for the South Coast Air Basin from the ARB's OFFROAD2007 Model[9], as published on the South Coast Air Quality Management District's (SCAQMD) website. Emission factors for 2010 represent the average fleet emissions throughout the South Coast Air Basin and were considered representative of construction equipment that would be used during construction of the project. Emissions from worker travel and truck traffic were calculated using the ARB's EMFAC2007 Model for on-road vehicles. Emissions of fugitive dust were estimated based on SCAQMD and EPA emission factors. Unmitigated construction emissions may have the potential to result in a temporary significant impact on the air quality. Under the MDAQMD Rules and Regulations, all projects must comply with Rule 403, which prohibits fugitive dust from construction activities that results in emissions that are visible in the atmosphere beyond the property line where construction is occurring. Through the implementation of Rule 403, fugitive dust control measures must be utilized to reduce emissions of particulate matter during construction. Dust emissions from construction, therefore, would be less than significant and would not conflict with or obstruct implementation of the applicable air quality management plan.

Table 5 presents a summary of the daily construction emissions for the project for each month during construction, in comparison with the MDAQMD significance thresholds. As shown in Table 5, emissions would be below the significance threshold for all pollutants for each month of construction. Impacts from construction would therefore be less than significant.

Operational Emissions. Operational emissions would be confined to inspection and maintenance activities. No additional personnel would be required at the Adelanto Station on a daily basis to maintain and operate the project. A small number of personnel may be required during brief periods when certain maintenance operations must be performed. Routine maintenance is expected to occur during daylight hours only. Emissions associated with these activities would include on-road vehicle emissions, and fugitive dust generated from inspection and maintenance vehicles traveling on unpaved surfaces at the site. Maintenance equipment is expected to consist of light- to medium-duty utility pickup trucks and may include a towed trailer with 500 gallon water tank for PV module washing.

Emissions were estimated to be the same as those for light- to medium-duty pickup trucks used during construction activities. Table 6 provides an estimate of emissions from maintenance activities. As shown in Table 6, emissions would be below the MDAQMD's significance thresholds, and no significant impacts would result from operation of the ASPP.

b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact. See response to 3.3(a). The proposed project would have less than significant impact for both construction and operations since air pollutant emissions would be below MDAQMD significance thresholds.

[9] California Air Resources Board, 2007, *EMFAC2007 Emissions Model*

TABLE 5
ESTIMATED CONSTRUCTION EMISSIONS
ADELANTO SOLAR POWER PROJECT

Emission Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Construction Emissions, lbs/day						
August						
Heavy Construction Equipment	6.77	24.05	50.56	0.05	2.76	2.46
Worker Vehicles	1.05	26.22	2.93	0.02	0.44	0.16
Construction Truck Trips	0.32	2.91	5.13	0.01	3.23	0.74
Fugitive Dust	-	-	-	-	33.15	6.96
TOTAL	**8.14**	**53.18**	**58.62**	**0.08**	**39.58**	**10.32**
Significance Thresholds	137	137	548	137	82	82
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
September						
Heavy Construction Equipment	11.69	36.95	99.01	0.11	4.48	3.99
Worker Vehicles	1.05	26.22	2.93	0.02	0.44	0.16
Construction Truck Trips	0.47	3.83	6.22	0.01	3.74	0.89
Fugitive Dust	-	-	-	-	33.15	6.96
TOTAL	**13.20**	**67.01**	**108.16**	**0.14**	**41.82**	**12.00**
Significance Thresholds	137	137	548	137	82	82
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
October						
Heavy Construction Equipment	6.41	21.61	48.72	0.05	2.58	2.30
Worker Vehicles	2.10	52.45	5.85	0.04	0.88	0.32
Construction Truck Trips	0.47	3.83	6.22	0.01	3.74	0.89
Fugitive Dust	-	-	-	-	33.15	6.96
TOTAL	**8.98**	**77.89**	**60.80**	**0.10**	**40.36**	**10.47**
Significance Thresholds	137	137	548	137	82	82
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
November						
Heavy Construction Equipment	3.64	13.50	32.89	0.03	1.51	1.34
Worker Vehicles	2.10	52.45	5.85	0.04	0.88	0.32
Construction Truck Trips	0.47	3.83	6.22	0.01	3.74	0.89
Fugitive Dust	-	-	-	-	33.15	6.96
TOTAL	**6.21**	**69.78**	**44.96**	**0.09**	**39.28**	**9.51**
Significance Thresholds	137	137	548	137	82	82
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*
December						
Heavy Construction Equipment	3.64	13.50	32.89	0.03	1.51	1.34
Worker Vehicles	2.10	52.45	5.85	0.04	0.88	0.32
Fugitive Dust	-	-	-	-	33.15	6.96
TOTAL	**5.74**	**65.95**	**38.74**	**0.08**	**35.54**	**8.63**
Significance Thresholds	137	137	548	137	82	82
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

Source: Scientific Resources Associated, 2010, *Air Quality Technical Report Adelanto Solar Power Project*, Appendix 2, Table 8.

TABLE 6
ESTIMATED OPERATIONAL EMISSIONS – MAINTENANCE ACTIVITIES
ADELANTO SOLAR POWER PROJECT

Emission Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Operational Emissions, lbs/day						
Construction Truck Trips	0.22	1.50	1.93	0.00	0.95	0.23
TOTAL	**0.22**	**1.50**	**1.93**	**0.00**	**0.95**	**0.23**
Significance Thresholds	137	137	548	137	82	82
Above Significance Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

Source: Scientific Resources Associated, 2010, *Air Quality Technical Report Adelanto Solar Power Project*, Appendix 2, Table 9.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. In analyzing cumulative impacts from a proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the project area is listed as "non-attainment" for the federal or state ambient air quality standards (AAQS). In the event direct impacts from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of screening levels identified above, and the project's contribution accounts for more than an insignificant proportion of the cumulative total emissions.

As discussed in 3.3(a), the Western Mojave Desert Area is considered a moderate nonattainment area for the 8-hour O_3 NAAQS; however, a large portion of O_3 exceedances in Western Mojave Desert Area are attributable to O_3 transport from the South Coast Air Basin. The area is also designated as a moderate nonattainment area for the NAAQS for PM_{10}. The Western Mojave Desert Area is considered a nonattainment area for the CAAQS for O_3, $PM_{2.5}$, and PM_{10}. Because the project's emissions of O_3 precursors are mainly attributable to temporary construction activities, and because the project's direct emissions are below the MDAQMD's significance thresholds, the project would not result in a cumulatively considerable increase in nonattainment pollutants. Because the project would also provide renewable energy to the South Coast Air Basin, the project would reduce emissions within the South Coast Air Basin, thus lessening the amount of pollution available for transport to the Western Mojave Desert Area.

PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. Project construction emissions should be evaluated in consideration with other projects in the vicinity of the project (i.e., within one mile) to assess the potential for cumulative impacts due to PM_{10} emissions during construction. However, no additional projects have been identified that are likely to be under construction during the same timeframe as the ASPP that would result in cumulatively significant impacts due to particulate matter.

d) Expose sensitive receptors to substantial pollutant concentration?

Less Than Significant Impact. Sensitive receptors are defined by MDAQMD as residences, schools, daycare centers, playgrounds and medical facilities. The project site is co-located with the Adelanto Switching Station in the MI zoning district of the City of Adelanto.[10] No sensitive receptors are

[10] Op. cit., City of Adelanto.

adjacent to the project site, although residential dwellings are located sporadically in the MI zone area, the closest of which are about 3,000 feet east of the project site. The Adelanto City Correctional Facility, which houses approximately 70 inmates that could be considered residents, is located about 3,000 feet north of the project site.

The project's criteria air pollutant emissions have been shown to be less than significant (refer to Sections 3.3(a) through (c)). Toxic air contaminants (TAC) would also be generated by the proposed project. Construction activities would result in emissions of diesel particulate matter from heavy construction equipment used on site and truck traffic to and from the site, as well as minor amounts of TAC emissions from motor vehicles (such as benzene, 1,3-butadiene, toluene, and xylenes). Health effects attributable to exposure to diesel particulate matter are long-term effects based on chronic (i.e., long-term) exposure to emissions. Health effects are generally evaluated based on a lifetime (70 years) of exposure. Due to the short-term nature of construction at the site, no adverse health effects would result from the short-term diesel particulate emissions. Motor vehicle emissions would not be concentrated in any one area, but would be dispersed along travel routes and would not be anticipated to pose a significant health risk to sensitive receptors.

e) Create objectionable odors that would affect a substantial amount of people?

No Impact. Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust; however, because the construction equipment would be operating at various locations throughout the construction site, and because any operations near existing receptors would be temporary, impacts associated with odors during construction would not be significant. Solar facilities would not be a source of odors during project operations.

3.4 BIOLOGICAL RESOURCES

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. Biological Resources. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

DISCUSSION

General reconnaissance-level biological field surveys have been conducted at the proposed solar site by POWER Engineers, Inc. with assistance from Garcia and Associates, Inc. A field survey to identify and evaluate on-site vegetation and habitats was conducted on April 15, 2010, by Botanist Melissa Lippincott. The survey was conducted to verify general site conditions, including vegetation and habitat type/cover and presence of special-status plants (see Appendix 3 for complete report). A wildlife survey was subsequently undertaken on April 27, 2010, by Wildlife Biologists Tom Herzog and Debbie Beckett to determine presence/absence of sensitive wildlife, including a focused protocol survey for desert tortoise (see Appendix 3).

The proposed project would be subject to the following laws, ordinances, regulations, and standards (LORS) relating to wildlife.

The Federal Endangered Species Act (16 U.S.C. §1531 et seq. [FESA]) provides provisions for the protection of species listed as threatened or endangered as well as their designated critical habitats. It prohibits the "take" of listed species; however, "incidental take" as the result of otherwise legal project activities may be authorized pursuant to FESA Section 7 (with federal project nexus) or Section 10. Section 10 provides provisions for the development of habitat conservation plans.

The Migratory Bird Treaty Act (16 U.S.C. § 703 - 711) affords protection to 836 species of migratory birds, including waterfowl, shorebirds, seabirds, wading birds, non-migratory upland game birds, raptors and passerines (including crows and ravens), their eggs, and occupied nests. The Migratory Bird Treaty Act is administered by U.S. Fish and Wildlife Service (USFWS).

The Bald and Golden Eagle Protection Act (16 U.S.C. § 668) specifically protects bald and golden eagles from harm or trade of nests, eggs, and body parts of these species. The Bald and Golden Eagle Protection Act is administered by USFWS.

The California Endangered Species Act (Fish and Game Code Section 2050 et seq. [CESA]) and implementing regulations in the Fish and Game Code, §2050 through §2098, include provisions for the protection and management of plant and animal species listed as endangered or threatened, or designated as candidates for such listing. CESA includes a consultation requirement "to ensure that any action authorized by a state lead agency is not likely to jeopardize the continued existence of any endangered or threatened species…or result in the destruction or adverse modification of habitat essential to the continued existence of the species" (§2090). Plants of California declared to be endangered, threatened, or rare are listed at 14 CCR §670.2. Animals of California declared to be endangered or threatened are listed at 14 CCR §670.5. Section §15000 *et seq.* of 14 CCR describes the types and extent of information required to evaluate the effects of a proposed project on the biological resources of a project site.

Fish and Game Code Sections 3511, 4700, 5050, and 5515 describe fish, amphibian, reptile, bird and mammal species that are "fully protected." Fully protected birds may not be taken or possessed, except under specific permit requirements. Administration of the code is through the California Department of Fish and Game (CDFG).

Fish and Game Code Section 3503 makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird. Administration of the code is through CDFG.

Fish and Game Code Section 3513 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Administration of the code is through CDFG.

Fish and Game Code Sections 1900 et seq., the California Native Plant Protection Act of 1977, protects plants listed as threatened, endangered, and rare. It defines specific protection measures for identified populations. Administration of the code is through CDFG.

Title 14, California Code of Regulations (Sections 670.2 and 670.5) lists animals designated as threatened or endangered in California. Administration of the code is through CDFG.

California Fish and Game Code Sections 1601–1607 prohibit alteration of any stream, including intermittent and seasonal channels and many artificial channels, without a Streambed Alteration Agreement from CDFG. This applies to any channel modifications that would be required to meet drainage, transportation, or flood control objectives of a project. Administration of the code is through CDFG.

The California Environmental Quality Act (CEQA) (Public Resources Code Section 15380) defines "rare" in a broader sense than CESA and CDFG definitions of threatened, endangered, or species of special concern. Under this definition, CDFG can request additional consideration of species not otherwise protected. CEQA requires that the effects of a project on environmental resources must be analyzed and assessed using criteria determined by the lead agency.

Joshua tree (*Yucca Brevifolia*) is a conserved plant within California's desert areas, and there are Joshua trees on the project site. Various protection ordinances and regulations are established at several levels of government requiring permits for removal and/or transplantation of Joshua trees, including the City of Adelanto (Native Vegetation Removal Permit), County of San Bernardino (San Bernardino County Code, Title 8, Division 8, Section 88.01.050), and State of California (Food and Agriculture Code, Division 23, Chapter 5, Section 80001). As a government agency and municipal utility, LADWP is exempt from obtaining permits for Joshua tree removal. The exemption is explicitly stated in both San Bernardino and State of California codes relating to Joshua tree removal.

There are no Habitat Conservation Plans or other specific local LORS that apply to the project.

Would the Project:

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

Less Than Significant With Mitigation Incorporated. The proposed ASPP will remove vegetation and habitat on up to 42.5 acres of the existing Adelanto Switching Station site. Though no desert tortoises were found during the site survey, and habitat reduction in and of itself is not a significant adverse impact, mitigation is proposed requiring preconstruction surveys for tortoise and sensitive bird species to ensure that animals will not have entered the site subsequent to the reconnaissance survey. The following paragraphs provide an explanation of this conclusion.

Vegetation and Habitat

Vegetation at the ASPP site supports Joshua Tree Woodland and Mojave Creosote Bush Scrub (Holland 1986), equivalent to the *Yucca Brevifolia* Woodland Alliance and the *Larrea tridentata-Ambrosia dumosa* Shrubland Alliance described by Sawyer, Keeler-Wolf, and Evans (2009). The shrub layer at the ASPP site was dominated by Creosote bush (*Larrea tridentata*) with burweed (*Ambrosia dumosa*), winterfat (*Krascheninnikovia lanata*), spiny hopsage (*Grayia spinosa*), burro brush (*Hymenoclea salsola*), and scattered Joshua trees. The herbaceous layer was a species-rich mix of native wildflowers, including sand blossoms (*Linanthus parryae*), hairy-leaved comb-bur (*Pectocarya penicillata*), purple mat (*Nama demissum*), Pringle's woolly sunflower (*Eriophyllum pringlei*), Wallace eriophyllum (*Eriophyllum wallacei*), desert dandelion (*Malacothrix glabrata*), and coreopsis (*Coreopsis bigelovii*), and non-native species common in the herbaceous layer throughout the Mojave Desert including storksbill (*Erodium spp.*), foxtail brome (*Bromus madritensis*), and Mediterranean grass (*Schismus barbatus*). Sea muilla (*Muilla maritima*) and desert mariposa lily (*Calochortus kennedyi* var. *kennedyi*) were infrequently scattered around the site; neither species has special status but are infrequently observed in the Mojave Desert and should be noted.

A number of areas within the project footprint were disturbed due to use for material storage, construction of flood control berms, and access roads. Overall, vegetation in much of the site is good quality Creosote Scrub with a diverse native plant component. The site conditions, while disturbed, have limited access due to the facility fencing and limited operations activity beyond the switching yard and transmission line footprint limits.

A total of 29 Joshua Trees of various ages and sizes, ranging from large multi-branched individuals to juvenile trees less than two feet high, were scattered throughout the 42.5 acre survey area. The locations have been noted by coordinate (see Appendix 3). A total of 58 vascular plant species belonging to 22 plant families were observed on site. Fifty three species were native and the remaining five were non native.

Special-Status Plant Species. Based on a review of the California Natural Diversity Database (CNDDB) (2010) and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (2010), five special-status species have potential to occur at the ASPP site as follows:

- **Small-flowered androstephium** – This species has moderate potential to occur. Not observed in the current survey conducted within the appropriate blooming period. Known locations in the project vicinity within the town of Adelanto.

- **Booth's evening-primrose** – This species has low potential to occur. Site contained Mojavean Desert Scrub with scattered Joshua trees and did not qualify as Joshua Tree Woodland. The subspecies was not observed in the current survey conducted in mid April.
- **Sagebrush loeflingia** – This species is believed absent from the site due to lack of suitable habitat.
- **Mojave monkeyflower** – This species has moderate potential to occur. Mohave monkeyflower was not observed in the current focused surveys conducted at the beginning of the blooming period. Suitable habitat and soils occurred onsite.
- **Short-joint beavertail** – This species is believed absent from the site, since the species was not observed during the survey conducted within the flowering period and the plant is a conspicuous perennial succulent.

Botanical Impacts

Direct Impacts. The project area has the potential to support sensitive plant species but, based on the survey results, site conditions, and habitat requirements, the species with potential to occur in the region were not found within the project footprint. Therefore, no direct impact to sensitive plant species would occur as a result of the implementation of the proposed project.

Approximately 29 Joshua trees of various sizes are within the ASPP footprint (see Figure 7). Although removal of Joshua trees sometimes requires a permit from local and state agencies, the removal by a municipal government or public utility when acting in the performance of its obligations to provide service to the public would not be subject to the ordinances. Removal of the Joshua trees, nonetheless, would be considered a significant impact that could be mitigated by relocating suitable trees. LADWP will evaluate Joshua trees within the construction footprint for feasibility of relocating them to another location on the project site, and relocate suitable trees (BIO-1).

Indirect Impacts. No significant impact to local air quality or deposition of pollutants on nearby vegetation or aquatic environments would occur with implementation of the proposed project. No significant indirect impacts to sensitive plants would occur.

Cumulative Impacts. Although the ASPP would remove native creosote scrub habitat, the impact is not cumulatively considerable in this case because the site is already committed to use as an electrical substation and is fully enclosed with chain-link fence. Notwithstanding the ongoing urbanization in Adelanto that has resulted in the conversion of hundreds of acres of native habitat to commercial and residential use with associated increase in traffic and population, the project site with its existing use and limitations does not represent valuable habitat and is not well suited to habitat preservation. Cumulative botanical impacts are less than significant.

Wildlife Resources

General Wildlife. Due to the native and disturbed aspects of the project area and site, common native wildlife is present but in possibly lower densities than may occur in other locations of the desert during seasonal and periodic rainfall. Wildlife species typical of the area and common include whiptail lizard (*Cnemidophorus tigris)*, rock dove (*Columba livia)*, red-tailed hawk (*Buteo jamaicensis)*, California quail (*Lophortyx californicus*), pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), cottontail (*Sylvilagus audubonii*), and coyote (*Canis latrans*).

Of note, one desert iguana (large adult) was observed on the north side of the parcel. This vegetarian lizard has not been commonly observed in the project vicinity in recent years (personnel observation from other surveys). The site supports black-tailed jackrabbit, a California sensitive species. These

species may have some predation advantage because of the perimeter fencing and limited access points for predators such as coyote.

One potential desert kit fox (*Vulpes macrotis*) burrow is located to the east of the proposed project footprint and shown on Figure 7. The burrow included a fresh apron and new debris in the entry that indicated recent activity.

Special-Status Wildlife. Based on a review of the CNDDB (2010), five special-status species of wildlife have potential to occur at the ASPP site (see Appendix 3). These species and their potential to occur are as follows:

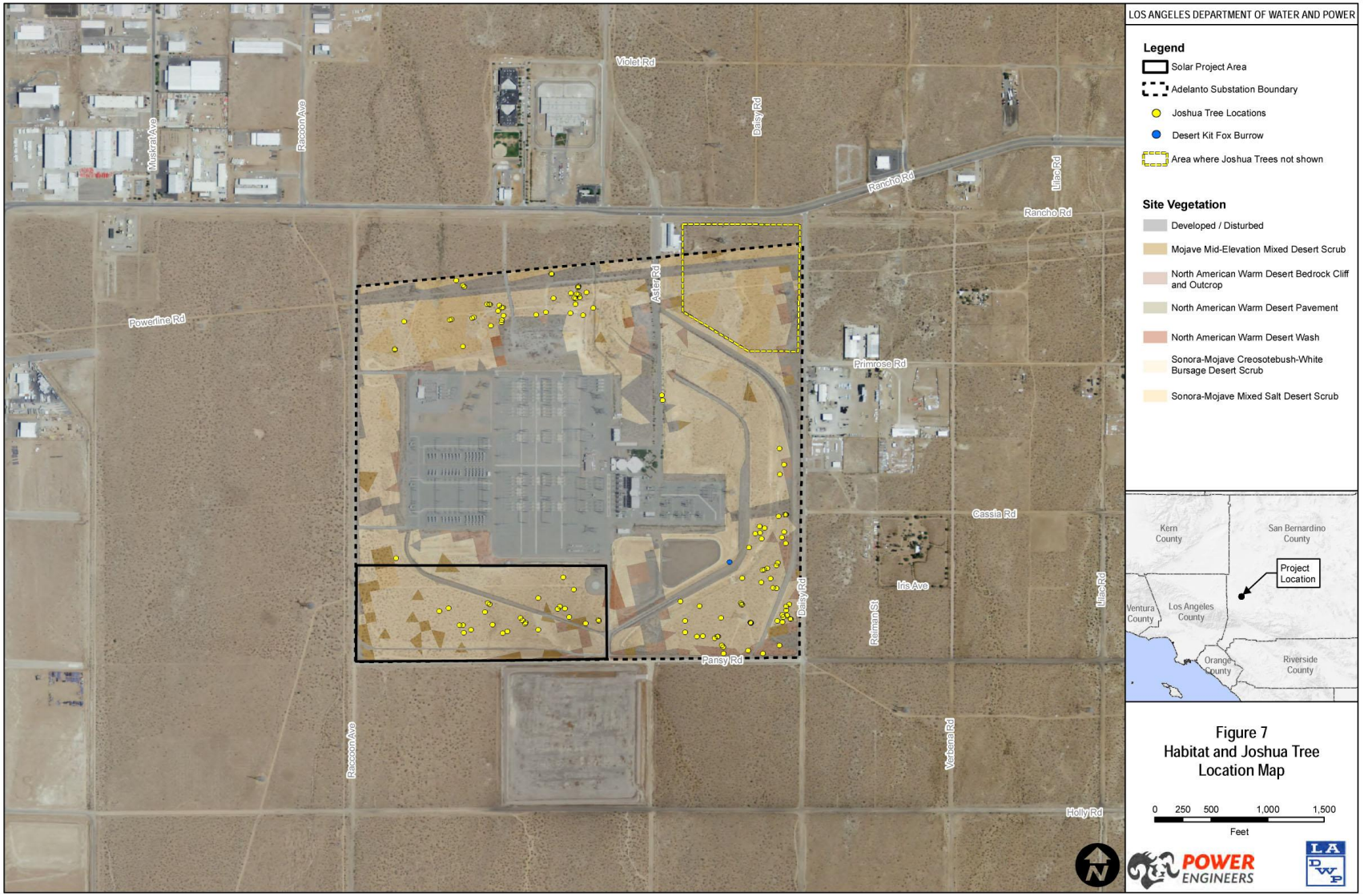
- **Desert tortoise** – This species has low potential to occur due to habitat reduction and fragmentation in the general area. The protocol survey was negative and no tortoises or tortoise sign were present.
- **Mohave ground squirrel** – This species has low potential to occur in spite of suitable habitat. Mohave ground squirrel has not been recorded in recent years within 10 miles of the project limits. Antelope ground squirrel is present on site and is identified to outcompete Mohave ground squirrel.
- **American badger** – This species is thought to be absent from the site due to loss of suitable habitat and is no longer present due to urbanization and fragmentation of native habitat.
- **Burrowing owl** – This species has moderate potential to occur onsite and occurs elsewhere in the Adelanto area. No burrows, potential burrows, or individual birds were observed within the project footprint, though suitable potential burrows are present in the project area.
- **Laconte's thrasher** – This species has moderate potential to occur onsite but is less likely due to fragmentation of habitat, urban disturbances, and existing site conditions.

Wildlife Impacts

Direct Impacts. Impacts to desert tortoise, Mohave ground squirrel, and burrowing owl are possible at the site since these species either occur in the general area or have historically occurred. However, site surveys did not discover any of these species on site, although Mohave ground squirrel would not necessarily be visible during the site survey and no trapping surveys were performed. Impacts for each species are as follows:

Desert Tortoise - The ASPP is within the recent historic range of the desert tortoise, a federal and state threatened species, and supports suitable habitat for this species. No desert tortoise or sign of desert tortoise were found during the protocol survey. The region has undergone recent and rapid urbanization and patchwork conversion of native habitat to heavy industrial, light industrial, warehouse, commercial, and residential use. This has significantly fragmented and degraded the quality of the remaining native habitat in the vicinity of the project limits. The adjacent areas are disturbed by vehicle use, domestic dog packs, and illegal dumping. Therefore, the proposed project has only a low historic potential to support desert tortoise. This potential effect would be reduced to a less than significant level by best construction practices and pre-construction survey to avoid incidental take of desert tortoise (BIO-3). The ASPP would not result in the extinction of this species or directly contribute to or hasten its demise. Potential to affect is subject to confirmation by USFWS and CDFG.

FIGURE 7 BIOLOGICAL RESOURCES



Mohave Ground Squirrel - Mohave ground squirrel, a state threatened species, has a potential to occur based on historic range. This potential to occur is reduced (low) based on the extent of existing and adjacent disturbance and lack of recorded sightings in the project vicinity during the past 20 years, even with ongoing recent surveys for other projects. If present, then direct impact may result during construction of the project and its operation. These potential effects are expected to be reduced to a less than significant level by implementing best construction practices during project construction (BIO-4). Based on available information, it is not expected that this species occurs within or adjacent to the project site, although its existence cannot be ruled out. The loss of habitat on site would not significantly contribute to the extinction of this species, or directly or indirectly hasten its demise.

Burrowing owl -Burrowing owl, a state species of concern, has moderate potential to occur, but no potential burrows or owls were observed during the site assessment surveys. Direct impact from active nest abandonment during construction and indirect impacts from permanent and temporary loss of foraging habitat and disruption of nesting and foraging could occur if this species inhabits the site prior to construction. These potential effects would be reduced to a less than significant level by implementing best construction practices and a preconstruction survey to reduce potential impacts during project construction (BIO-2). The proposed project is not expected to result in the extinction of this species or directly contribute to or hasten its demise, or result in an increased likelihood of the species being listed as a State or Federal protected species in other than its current status.

Indirect Impacts. Indirect impacts to adjacent habitats from temporary construction-related noise and human presence in the case of the proposed project would affect sensitive wildlife to a less than significant degree.

Cumulative Impacts. Loss of habitat associated with the proposed project is not cumulatively considerable and is not important to sensitive wildlife, since none were observed to use the site. No impact would occur.

Wildlife and Habitat Mitigation Measures

BIO-1. Joshua trees suitable for removal will be relocated within the existing Adelanto Switching Station parcel by a qualified landscape contractor with previous successful (greater than 50% survivorship after two years) transplant experience.

BIO-2. A preconstruction survey within the project area will be conducted prior to ground disturbance and construction activities that occur between March 15 and August 31. The survey will be conducted no more than two weeks prior to mobilization or construction activities and should be conducted by a qualified biologist familiar with Western burrowing owl, raptors, and other avian species of the region. If nesting bird species are detected, then mitigation will be incorporated to establish a work restriction limit around the active nest until chicks are fledged or the nest naturally fails.

BIO-3. Comply with and implement best practice measures, consistent with USFWS and CDFG determination and guidance, to protect low probability of occurrence of encountering desert tortoise during project construction. Conduct a pre-construction clearance survey prior to mobilization or construction that would result in vegetation or soil disturbance to confirm absence of desert tortoise within the facility parcel (the fenced parcel limits supporting native vegetation or open habitat).

BIO-4. Provide construction personnel with a Worker Environmental Awareness Program (WEAP) to inform them of Best Management Practices for limiting impact to wildlife and native vegetation inside and outside the construction limits.

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

Less Than Significant Impact. In the general vicinity of the project site, storm water is carried primarily via streets, small drainages, and sheet flow. Sheet flow and other drainage in the area is generally toward the north. Sheet flows approaching the Adelanto Switching Station site are diverted around the existing switching and converter station facilities via a sizeable low-flow drainage swale located on the eastern portion of the Station property and two small drainage swales on the west portion of the site that cross the proposed solar site. The larger drainage on the east portion of the site will not be modified or affected by the proposed project and no impacts would occur. The two small ephemeral drainages originate on the southwestern corner of the site and are fed by under-road culverts. The drainages do not appear to carry all of the drainage that comes through the culverts; drainage can spread out and still sheet flow across the solar site.

The drainages do not contain wash adapted plants or other riparian vegetation. Species such as desert willow or smoke tree are absent. No change in density of predominant vegetation occurs within the drainage areas. Consequently, minor changes in these drainages due to construction of the solar panels would not have a substantial impact on riparian habitat. No other sensitive communities have been identified on the site (see also Item 3.4 (f)).

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. See response to Item 3.4 (b) regarding drainage conditions in the project vicinity. Minor site grading for solar panels may encroach into the area of existing drainages on the southwestern portion of the site; however, no impacts would occur relative to wetlands or jurisdictional areas. The site is very flat and the drainages are not well developed, do not have specific features such as high water marks or defined "banks," and do not contain riparian vegetation or wetlands. Although the solar panels represent an impermeable surface, the area beneath the panels will consist of permeable earth or gravel that allows infiltration. Very little change in overall storm water flow direction or runoff quantity would occur with the proposed project. Based on these factors, the two small drainages do not represent jurisdictional features subject to permitting under Section 404 of the Clean Water Act or Section 1602 of the California Fish and Game Code. Therefore, minor alterations to these drainages would have no impact. Further, these drainages are part of the overall site drainage control that includes gabion diversion barriers, detention basins, and excavated ditches and channels to divert surface flows from south to north around the existing switching yard facility.

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

No Impact. The project site exists within an industrial installation that is completely surrounded by a six-foot high chain link fence. Although migratory opportunities on the site are hindered due to the fence, some use by wildlife occurs within the vegetated portions of the site. The biological survey found no substantial evidence of use by wildlife for migration or for wildlife nursery purposes. There

are no fish resources on the site. Based on the biological survey, the proposed project would not substantially interfere with the movement of any native resident or migratory wildlife species, or with established native resident or migratory wildlife corridors, nor would the project impede the use of a wildlife nursery site. No impact would occur.

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

Less Than Significant Impact. See discussion in Section 3.4(a) Botanical Impacts. Removal of Joshua trees is considered a less than significant impact; however, LADWP will relocate suitable trees.

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

No Impact. There are no Habitat Conservation Plans, Natural Communities Conservation Plans, or other approved local, regional, or state habitat conservation plans that are applicable to the project site or general area. The project is not critical habitat for any of the listed species potentially affected by the proposed project. Consequently, no conflicts with any adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan would occur. There is no impact.

3.5 CULTURAL RESOURCES

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. Cultural Resources. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

DISCUSSION

The LADWP contracted POWER Engineers, Inc. to conduct a cultural resources inventory of the proposed ASPP development area within the Adelanto Substation site. A records search for the project was conducted at the San Bernardino Archaeological Information Center for a one-mile radius around the exterior boundary of the project site. The records search identified 18 previous Class III cultural resource inventories conducted within one mile of the project site. Four previously identified archaeological sites

were found within one mile of the project area, all four of which are historical in age. None of the four sites have been evaluated for eligibility to the National Register of Historic Places (NRHP).[11]

A 100% pedestrian cultural resources inventory of the 42.5 acre solar site was conducted on March 10 and 11, 2010. The inventory was conducted by three archaeologists spaced no more than 15 m (50 ft) apart. Ground visibility was 80 percent or better in all areas. Sites and isolates were recorded on the appropriate California Office of Historic Preservation (OHP) DPR 523 inventory forms. Whenever possible, subsurface exposures in erosional cut banks, road cuts, rodent burrow entrances, and ant hills were inspected for buried cultural deposits. When cultural material was encountered, more closely spaced transects were walked and artifacts were marked with pin flags to define the extent of the cultural material and make observations, such as artifact frequency and distributions. Sites were photographed digitally in color. Four new sites were discovered during the site survey, three of which were historic and one of unknown age association. No artifacts were removed from the field.

The results of survey are provided below, with additional information provided in Appendix 3 of this document.

Would the Project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?

Less Than Significant Impact. The cultural resource inventory of the Adelanto Solar Power Project area resulted in discovery of two archaeological sites (temporary numbers ADL-03 and ADL-04) and two archaeological isolated finds (temporary numbers ADL-01 and ADL-02).

Isolated Find ADL-01: Temporary isolate number ADL-01 consists of one historical hole-in-top can, probably dating from the early 20th century.[12] The can measured 4 5/16 inches tall by 3 inches in diameter with two punch-style openings on the top. The can has two ice pick openings on the top, indicating that it contained a liquid, probably evaporated milk. As an isolate, this find does not qualify as a unique archaeological resource since it does not contribute to answering important cultural resource questions, is not particularly unique, and is not associated with any particular important historic event or person. No other measures in addition to recordation are needed. Consequently, disturbance of this site during construction would have less than significant impact.

Isolated Find ADL-02: Temporary isolate ADL-02 consists of one metal cone-top can with a screw cap. It also has a small metal rod bent approximately 90 degrees from the top and welded to the screw cap; it resembles a twist pin. The can is slightly crushed. The can measures approximately 4 7/16 inches tall by 2 7/16 inches in diameter. While the can resembles a soda or beer can, the stamped, rather than crimped, ends suggest that it did not contain a carbonated beverage. As an isolate, this find does not qualify as a unique archaeological resource since it does not contribute to answering important cultural resource questions, is not particularly unique, and is not associated with any particular important historic event or person. No other measures in addition to recordation are needed. Consequently, disturbance of this site during construction would have less than significant impact.

ADL-03: Site ADL-03 consists of a single rock ring, measuring 23 inches by 18 inches. The interior dimensions of the ring are approximately 15 inches by 10 inches. The oval-shaped ring was formed from eight igneous and metamorphic cobbles with maximum dimensions ranging from 4 to 8 inches. The ring is slightly embedded in the ground surface. The ring is of a size typical of a fire ring, but

[11] POWER Engineers, Inc. 2010, *Cultural Resources Technical Report*, Appendix 3
[12] Rock, James T. 1984. *Cans in the Countryside*. Historical Archaeology 18(2)97-111

there is no charcoal, burned rocks, or other evidence of burning. No other artifacts were associated with the ring. The ring is probably relatively recent in age, since the rocks show no signs of weathering or patination. Also, historic sites are much more common than prehistoric sites in the general vicinity.[13]

As an archaeological resource, there is no evidence that the simple stone ring at ADL-03: 1) contains information needed to answer important scientific research questions; 2) is the best available example of its type; or 3) is associated with an important historic event or person. Therefore, ADL-03 does not qualify as a unique archaeological resource. Also, ADL-03 does not meet any of the four criteria for California Register eligibility. Consequently, disturbance of this site during construction would have less than significant impact and no further mitigation recommendations beyond site recordation are necessary.

ADL 04: Temporary site ADL-04 is a can scatter. The scatter consists of a concentration of hole-in-top cans, sanitary cans, key-opened processed fish cans, and a variety of other cans in various sizes and shapes. Also included within the site are one ceramic plate fragment, three fragments of ceramic crockery, an exhaust system tail pipe, and one large 40-gallon drum. The exhaust pipe and drum are modern. The can scatter may date from the early 20th century, based on the presence of the hole-in-top cans, to the modern era. Sanitary cans date from 1910 to the present.[14]

The can scatter is roughly triangular in shape, measuring 80 meters from north to south and 50 meters from east to west. All items were on the surface; no evidence was seen of subsurface deposits or features, although no shovel test pits were excavated.

As an archaeological resource, there is no evidence that the can scatter at ADL-04: 1) contains information needed to answer important scientific research questions; 2) is the best available example of its type; or 3) is associated with an important historic event or person. Therefore, ADL-04 does not qualify as a unique archaeological resource. ADL-04 does not meet any of the four criteria for California Register eligibility. Thus, disturbance of this site during construction would have less than significant impact and no further recommendations beyond site recordation are necessary.

As noted above, potential disturbance of the four historic sites during construction would have less than significant impact. The sites have been recorded. No other mitigation measures are necessary.

b) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?

No Impact. The cultural resources inventory did not identify any potential sites of prehistoric age on the property. No impacts to prehistoric resources would occur.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Less Than Significant With Mitigation Incorporated. Several recent projects in the general vicinity of the proposed project site conducted surveys and literature reviews relative to the potential for encountering paleontological resources during construction activities (Metro Towne Center[15] and Adelanto Correctional Facility[16]). For the Adelanto Correctional Facility project, located about 3,000

[13] G. Austerman, personal communication 2010
[14] Rock, James T. 1984. *Cans in the Countryside*. Historical Archaeology 18(2)110
[15] City of Adelanto, 2007, *Metro Towne Center Draft Environmental Impact Report*, Appendix C
[16] City of Adelanto, 2009, *Geo Group, Inc. Facility, Mitigated Negative Declaration*

feet north of the proposed ASPP, a literature search revealed that no known paleontological resources had been discovered within one mile of the correctional facility site. Resource data indicate that the soils at the ASPP site are likely derived primarily from older Pleistocene sediments associated with the Victorville Fan, which have generally low potential to contain significant paleontological resources.[17] Data also indicated that the Victorville Fan sediments overlie and/or or intermix with other soil materials associated with the ancestral Mojave River (of middle Pleistocene age), which have a high potential to contain significant paleontological resources.[18]

While minor grading and land leveling is required for the proposed solar facilities, excavations of several feet below surface for foundation support, cable trenching, or other appurtenant equipment cannot be ruled out. Accordingly, excavations for the project have the potential to encounter potentially significant paleontological resources.

Potential significant impacts to paleontological resources can be reduced to a less than significant level by implementing a program to educate construction workers on the nature of paleontological materials that may be encountered during construction, and by having a qualified paleontologist on-call to evaluate any suspected paleontological material discovered during construction.

CR-1. The Contractor/Construction Manager shall ensure that a paleontological discovery training program is implemented prior to the start of construction. The training program will be prepared by a trained paleontologist and shall consist of a brief PowerPoint presentation (or other approved presentation method) for all construction personnel. The emphasis of the training is to educate all construction personnel on the potential paleontological resources that could be found on the project during excavation and the proper procedures for dealing with resources if encountered. Should resources be identified during construction, work shall cease in the immediate area (within 100 feet) and a qualified paleontologist shall be notified to determine if the resource is significant. Work shall not continue until the qualified paleontologist makes a determination.

CR-2. In the event that fossil remains are encountered, all recovered fossil remains shall be prepared to the point of identification and to the lowest taxonomic level possible. The remains shall be curated and catalogued, the corresponding geologic and geographic site data archived, and all items transferred to the appropriate museum repository, preferably to the Earth Sciences Division of the San Bernardino County Museum.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. No human remains are expected to be disturbed within the project site during construction. In the event that remains are unearthed during construction, State Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 provide guidance with regard to the accidental discovery of human remains. In the event that remains are found, LADWP would be subject to these requirements by law, reducing any potential impact to less than significant.

[17] Ibid.
[18] City of Adelanto, 2007, *Metro Towne Center Draft Environmental Impact Report*, Appendix C

3.6 GEOLOGY AND SOILS

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

DISCUSSION

Would the Project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

Less Than Significant Impact. As with most of southern California, the project site is located in a seismically active region. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The project site is not located within an Alquist-Priolo Earthquake Fault Zone.[19] No other known active faults traverse the project site. Therefore, the potential for surface rupture at the site is low.[20]

ii. Strong seismic ground shaking?

Less Than Significant Impact. As noted above, the project site is located in a seismically active region and has the potential to be subjected to strong ground shaking associated with earthquake events. Although the project site is not located on or adjacent to any known earthquake faults, the San Andreas Fault, which is located approximately 17 miles to the southwest at its nearest point to the project site, possesses the potential to produce a major earthquake that could impact the project area. Other faults that are likely to produce moderate to severe earthquake events that may affect the project site include the Helendale Fault (located about 15 miles northeast of the project site), the North Frontal Fault (located about 18 miles southeast), and the Landers Fault Zone (located about 45 miles east), which is composed of several individual contiguous and non-contiguous faults and was the epicenter of a 7.2 magnitude earthquake on October 16, 1999 that caused intense ground shaking in the Adelanto area. However, there would be no habitable structures related to the proposed project. In addition, the following conditions of the project would reduce potential impacts to non-habitable structures related to strong seismic ground shaking to a less than significant level.

All proposed project structures, including the PV modules, module supports, structural frames, electrical equipment racks, equipment enclosures, equipment anchorages, and foundations, including nonstructural components that are permanently attached to structures and their supports and attachments, shall be designed and fabricated to resist the effects of earthquake motions in accordance with the requirements of ASCE/SEI 7-05, *Minimum Design Loads for Buildings and Other Structures*, and the 2008 edition of the LABC. Structures that require special consideration of their response characteristics and environment that are not addressed by ASCE/SEI 7-05 or the 2008 LABC, such as buried utility lines and other structures that may be subject to other regulations, shall have their design submitted to LADWP for engineering evaluation and determination of acceptability. Structural components supporting or enclosing electrical equipment shall be designed with a Category IV Importance Factor of 1.5, as indicated in Table 11.5-1 of ASCE/SEI 7-05. All other structural components shall be designed with a Category III Importance Factor of 1.25, as indicated in Table 11.5-1 of ASCE/SEI 7-05. Differential movement between structures shall be accommodated by the use of expansion joints, flexible cabling, and other devices as necessary to accommodate seismic motion. Non-building structures shall conform to the requirements of ASCE/SEI 7-05, Chapter 15, *Seismic Design Requirements for Non-Building Structures*.

Due to the possibility of differential settlement or surface displacement from ground failure, including liquefaction or lateral spreading as a result of strong seismic shaking, the Seismic Design Category for the project facilities shall be determined by geotechnical investigation prepared as a condition of the project, in accordance with the provisions of ASCE/SEI 7-05 Section 11.8.2, *Geotechnical Investigation Report for Seismic Design Categories C through F*.

[19] California Geological Survey. *Alquist-Priolo Earthquake Fault Zones*. Website: http://www.conservation.ca.gov/cgs/rghm/ap/Map_index/Pages/county.aspx
[20] Southern California Data Center. *Faults of Southern California.* Website: http://www.data.scec.org/faults/mojfault.html

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction occurs when relatively loose sandy or silty soils become saturated with water and behave like a liquid when subject to intense shaking, such as that cause by an earthquake. During liquefaction, the physical bond between soil particles decreases, and soils can lose their ability to support structures. The primary factors contributing to increased liquefaction susceptibility are high seismicity, shallow groundwater, and young, poorly consolidated sandy alluvium. Some areas in the proposed project region may be susceptible to liquefaction, but these are generally associated with the Mojave River, which is located approximately eight miles east of the project site.[21] The project site itself is not located in an area that has been identified as a liquefaction zone.

However, soils at the project site consist primarily of alluvium composed of sands, loamy sands, and gravelly sands.[22] Therefore, as a condition of the project, all project structures would be designed and constructed in accordance with the latest version of the California Building Code, the Uniform Building Code, the LABC, and all other applicable federal, state, and local codes relative to liquefaction criteria. As discussed in Item 3.6(a)(ii), a geotechnical investigation would be prepared as a condition of the project to identify the extent of potentially unstable soils prior to project design and construction. Therefore, neither people nor structures would be exposed to potential substantial adverse effects from seismic-related ground failure, including liquefaction.

iv. Landslides?

No Impact. The proposed project site is on essentially level terrain (approximately 1 to 1.5 percent slopes). The proposed project would not require substantial modification of the natural grade such that potentially unstable conditions that could lead to landslides would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Since the proposed project site is essentially level, major earthwork is not anticipated during project construction. However, construction activities would result in surface disturbance related to clearing and grading that could create the potential for erosion to occur. Since the proposed project site is greater than one acre, as a condition of the project, LADWP shall require that the design contractor prepare erosion control plans and reports, including, but not limited to, a Storm Water Pollution Prevention Plan (SWPPP). Erosion and sediment control measures shall be in accordance with applicable state and local regulations and Best Management Practices (BMPs). In addition, LADWP must comply with a Storm Water Construction Activities General Permit and obtain an NPDES Permit. Compliance with these provisions would reduce potential soil erosion at the site to a less than significant level. After construction of the proposed project, exposed areas of the site would be stabilized with gravel, plant material, or other permeable cover, and no significant soil erosion or loss of topsoil is expected to occur.

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

[21] City of Victorville. *Safety Element ,City of Victorville General Plan, 2001*. Website: http://ci.victorville.ca.us/uploadedFiles/AboutVictorville/safety_element.pdf

[22] United States Department of Agriculture, Natural Resources Conservation Service. *Web Soil Survey, San Bernardino County, California, Mojave River Area (CA671)*.Website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Less Than Significant Impact. As discussed above, the project site is essentially level, and, therefore, the potential for landslides does not exist. The project site is not located within an Alquist-Priolo Earthquake Fault Zone, and no other known active faults traverse the project site.[23] The project site is not located in an area that has been identified as a liquefaction zone. Nonetheless, the project is located in a seismically active area and has the potential to be subjected to strong ground shaking associated with earthquake events, which could potentially contribute to unstable soil conditions on site. However, as discussed in Items 3.6(a)(ii) and (iii), all project structures would be designed and constructed in accordance with the latest version of ASCE/SEI 7-05, the California Building Code, the Uniform Building Code, the LABC, and all other applicable federal, state, and local codes relative to seismic criteria. A geotechnical investigation shall be prepared as a condition of the project to identify the extent of potentially unstable soils prior to project design and construction. Therefore, impacts related to a potentially unstable geologic unit or soil, including lateral spreading, subsidence, liquefaction, or collapse, would be less than significant.

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

Less Than Significant Impact. Expansive soils generally contain a high percentage of clay particles, which expand when wet and contract when dry. Soils at the project site consist primarily of alluvium composed of sands, loamy sands, and gravelly sands that are well-drained, and the potential for expansive soils is considered low.[24] However, as discussed above, as a condition of the project, a geotechnical investigation shall be prepared to identify the extent of potentially unstable soils (including expansive soils) and establish appropriate recommendations for project design and construction.

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

No Impact. Adelanto Station is connected to a City of Adelanto sanitary sewer line located in Aster Road north of the station. Because no new personnel would be required at the Adelanto Station in association with the proposed project, no changes to the existing sanitary waste system operations would occur such that septic tanks or an alternative wastewater system would be required. During project construction, sanitary waste would be handled by temporary portable chemical toilets. The waste from these facilities would be removed by a private contractor and disposed at an approved offsite location.

[23] Op. cit. California Geological Survey.
[24] Op. cit. United States Department of Agriculture.

3.7 GREENHOUSE GAS EMISSIONS

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

DISCUSSION

Global Climate Change (GCC) refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). These gases allow solar radiation (sunlight) into the Earth's atmosphere, but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called greenhouse gases, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the Earth's temperature. Emissions from human activities, such as burning fossil fuels for electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere.

State law defines greenhouse gases as any of the following compounds: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505(g)). CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

The State of California GHG Inventory performed by the California ARB compiled statewide anthropogenic GHG emissions and sinks. It includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs. The current inventory covers the years 1990 to 2004, and is summarized in Table 7. Data sources used to calculate this GHG inventory include California and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the United Nations Intergovernmental Panel on Climate Change (IPCC). The 1990 emissions level is the sum total of sources and sinks from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories in the inventory. These sectors include: Agriculture; Commercial; Electricity Generation; Forestry; Industrial; Residential; and Transportation.

TABLE 7
STATE OF CALIFORNIA GHG EMISSIONS BY SECTOR

Sector	Total 1990 Emissions ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2004 Emissions ($MMTCO_2e$)	Percent of Total 2004 Emissions
Agriculture	23.4	5%	27.9	6%
Commercial	14.4	3%	12.8	3%
Electricity Generation	110.6	26%	119.8	25%
Forestry (excluding sinks)	0.2	<1%	0.2	<1%
Industrial	103.0	24%	96.2	20%
Residential	29.7	7%	29.1	6%
Transportation	150.7	35%	182.4	38%
Forestry Sinks	(6.7)		(4.7)	

Source: Source: Scientific Resources Associated, 2010, *Air Quality Technical Report Adelanto Solar Power Project*, Appendix 2, Table 10.

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas".[25] The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. Table 8 presents the GWP and atmospheric lifetimes of common GHGs.

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution.

TABLE 8
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES OF GHGS

GHG	Formula	100-Year Global Warming Potential	Atmospheric Lifetime (Years)
Carbon Dioxide	CO_2	1	Variable
Methane	CH_4	21	12 ± 3
Nitrous Oxide	N_2O	310	120
Sulfur Hexafluoride	SF_6	23,900	3,200

Source: Source: Scientific Resources Associated, 2010, *Air Quality Technical Report Adelanto Solar Power Project*, Appendix 2, Table 11.

CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure, and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid. Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

[25] EPA, 2006. *The U.S. Inventory of Greenhouse Gas Emissions and Sinks: Fast Facts.* www.epa.gov/climatechange/emissions/download06/06FastFacts.pdf.

Would the project:

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

Less Than Significant Impact. The main source of greenhouse gas emissions associated with the ASPP would be combustion of fossil fuels during construction of the project. Emissions of GHG were calculated using the same approach as for overall construction emissions discussed previously (see Section 3.3) and using methods developed by the California Air Pollution Control Officers Association (CAPCOA)[26] and methods approved by SCAQMD. Estimated emissions of greenhouse gases are summarized in Table 9. Emission calculations are provided in Appendix 2.

TABLE 9
CONSTRUCTION GREENHOUSE GAS EMISSIONS

	CO_2	CH_4	N_2O
Emissions, metric tons/year			
Heavy Construction Equipment	244	0.03	0.24
Worker Vehicles	157	0.02	0.02
Construction Trucks	47	0.00	0.02
TOTAL	448	0.04	0.28
Global Warming Potential	1	21	310
CO_2 Equivalent (CO_2e)	448	1	87
CO_2e Total 536			

The total CO_2 equivalent (CO_2e) emissions of 535 metric tons are below CAPCOA's recommended annual threshold of 900 metric tons of CO_2e, below which no analysis would be required. Emissions associated with construction would be temporary, likely to occur during a single one-year period. This level of GHG emissions would not result in a significant impact on global climate. Furthermore, because the project would allow LADWP to generate additional solar power, it would serve to meet LADWP's RPS goals, which have been identified by the state as a means of meeting the goals of the California Global Warming Solutions Act of 2006 (AB 32) to reduce GHG emissions to 1990 levels by the year 2020.

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

Less Than Significant Impact. On a national scale, federal agencies are addressing emissions of GHGs by reductions mandated in federal laws and Executive Orders. Most recently, Executive Order 13423 Strengthening Federal Environmental, Energy, and Transportation Management (January 24, 2007) was enacted. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, AB 32 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

The potential effects of proposed GHG emissions are by nature global and cumulative. As individual sources, GHG emissions are not large enough to have an appreciable effect on climate change. Therefore, the impact of proposed GHG emissions to climate change is discussed in the context of cumulative impacts. Projects that meet the criteria for conducting a climate change analysis are required to conduct a GHG inventory and disclose GHG emissions associated with project

[26] California Air Pollution Control Officers Association. 2008. *CEQA and Climate Change*

implementation and operation under "business as usual" conditions. "Business as usual" is defined as the emissions that would have occurred in the absence of reductions mandated under AB 32. As shown in Section 3.7(a), the proposed project would not result in significant green house gas emissions when compared to CAPCOA's threshold of 900 metric tons of CO_2e and is therefore consistent with the goals of AB 32.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☒	☐
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

DISCUSSION

Would the project:

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

Less Than Significant Impact. See discussion under Item 3.8(b).

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

Less Than Significant Impact. Construction of the proposed project would include activities involving some hazardous materials, including on-site fueling and servicing of construction equipment and the transport of fuels, lubricating fluids, and solvents to and within the site. However, construction activities would be short-term and one-time in nature, and the types of materials that would be involved are not considered acutely hazardous. Furthermore, the handling of these materials is subject to federal, state, and local health and safety requirements. Vehicle and equipment maintenance and other activities involving these materials would be conducted in areas and in a manner that would provide containment in case of accidental spills. Therefore, project construction would not be expected to create a significant hazard to the public or environment from the routine transport, use, or disposal of hazardous materials or through a reasonably foreseeable upset or accident.

The proposed project would not generate hazardous wastes during operation. The PV panels would not include any moving parts, and maintenance requirements, such as PV array washing, if necessary, would be minimal. Operation of the proposed project would continue to involve the very limited transport, storage, use, and disposal of hazardous materials, including the use of diesel and gasoline operated vehicles, lubricating fluids, and solvents. However, the types of materials that would be involved are not considered acutely hazardous. All hazardous materials used at the project site would be stored, handled, and disposed of in accordance with local, county, and state laws that protect public safety. Therefore, project operations would not be expected to create a significant hazard to the public or environment from the routine transport, use, or disposal of hazardous materials or through a reasonably foreseeable upset or accident.

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

No Impact. The nearest existing schools to the proposed project site are located approximately 1.25 miles to the southeast. The project site is located within an area zoned for manufacturing and industrial uses and is a minimum of 0.25 miles from residentially zoned areas that could have the potential for future schools development.

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

No Impact. Government Code Section 65962.5 applies to facilities that may be subject to the Resource Conservation and Recovery Act Corrective Action program involving the cleanup of improperly managed hazardous wastes. The proposed project site is not contained on any lists

compiled pursuant to Section 65962.5 or on the California Department of Toxic Substances Control database (EnviroStor) for contaminated sites. [27,28,29,30]

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

Less Than Significant Impact. The proposed project would be located generally beneath the southwestward extension of Runway 3/21 at the Southern California Logistics Airport (SCLA). According to the Federal Aviation Regulation, Part 77, an object may be considered an obstruction to air navigation if it is located within 20,000 feet of a public use or military airport with at least one runway of more than 3,200 feet in length, and the object penetrates an imaginary surface extending outward from the edge of the runway at an upward slope of one foot of vertical climb for each 100 feet of horizontal distance. Runway 3/21 at the SCLA is 9,158 feet in length, and the proposed project site is located approximately 19,000 feet southwest of the end of the runway at its closest point. At this distance, the 100:1 imaginary surface would be approximately 190 feet in height. However, the ground elevation at the proposed project site (approximately 2,985 feet above mean sea level [AMSL]) is approximately 105 feet higher than at the southwest end of Runway 3/21 (approximately 2,880 feet AMSL). Nonetheless, the 100:1 imaginary surface remains approximately 87 feet above ground level at the project site. The tallest elements of the proposed solar project (the inverters and transformers) would be less than nine feet in height, well below the height of the imaginary surface. In addition, the proposed project facilities would be well below the height of the existing switching and converter equipment at the Adelanto Station. Therefore, the proposed project would not represent an obstruction to air navigation at the SCLA.

The proposed solar panels would be mounted on the support framework at an angle of approximately 10 to 20 degrees from horizontal and oriented to the south. Based on this orientation and angle, the sunlight that would not be absorbed by the panels would be reflected at a relatively steep angle upward (ranging from approximately 60 to 70 degrees throughout the year at noon) and could create glare that would interfere with air navigation at the SCLA. However, as discussed above in Section 3.1 (Aesthetics), the protective glass covering on the solar panels would include several characteristics intended to increase energy production by improving light absorption and, therefore, decreasing the reflection of light. Based on these properties, the general appearance of the panels would be a dark field. While reflection off the solar panels would not be entirely eliminated, it would be reduced to about 30%, which is generally similar to or less reflective than the sandy soils found in the area of the project, and less than the reflection off of many paved surfaces and rooftops in the area. Furthermore, the normal approach pattern to SCLA is from the north or northwest, depending on which runway is involved. The southward orientation of the proposed project solar panels and their location approximately 3.5 miles southwest of the airport would eliminate any interference with landing operations at the airport from glare created by the panels. In addition, based on the orientation and location of the panels and the general pattern and nature of departures from the SCLA, interference with takeoff operations from glare created by the panels would also be less than significant.

f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?

[27] Department of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Site List – Site Cleanup (Cortese List)*. Website: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm.
[28] EPA. *CERCLIS Hazardous Waste Sites*. Website: http://www.epa.gov/superfund/sites/cursites/index.htm.
[29] EPA. *National Priorities List*. Website: http://www.epa.gov/superfund/sites/npl/index.htm.
[30] Department of Toxic Substances Control. *EnviroStor*. Website: http://www.envirostor.dtsc.ca.gov/public/default.asp.

No Impact. The project site is not located within the vicinity of a private airstrip. The closest private airstrip, Krey Field, is located approximately six miles west of the proposed project site.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The proposed project would not impair or physically interfere with an adopted emergency response plan or a local, state, or federal agency's emergency evacuation plan. The project would be located entirely within the existing 300-acre Adelanto Switching Station and DC Converter Station. No permanent or temporary street closures are planned during either project construction or operations. Staging areas for construction would be located within the station boundaries. Emergency access to or egress from the station or surrounding areas surrounding would not be adversely affected.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact. The project would be located entirely within the existing 300-acre Adelanto Switching Station and DC Converter Station. The potential for major wildfires in the vicinity of the station is generally low, and the types of facilities and operations related to the proposed project would not significantly contribute to the risk of wildfire. Fire protection is provided by the San Bernardino County Fire Department, North Desert Division. The nearest fire station is located on Rancho Road directly north of the Adelanto Station, providing immediate response capability to the project site. The project would follow all state and local requirements for construction and operating activities, including compliance with the latest version of the California Building Code and the Uniform Building Code relating to fire safety and fire prevention. The project would utilize non-combustible materials and UL-rated components, which would be installed in accordance with the NEC. In addition, project components would be constructed to maintain proper clearances from other switching station structures, and site vegetation would be maintained to provide proper clearances from electrical equipment. During construction, fire prevention measures would include the use of spark arresters on construction vehicles, the proper storage of flammable materials, and the maintenance of adequate emergency access.

3.9 HYDROLOGY AND WATER QUALITY

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. Hydrology and Water Quality. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

DISCUSSION

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant Impact. Since the proposed project site is essentially level, major earthwork is not anticipated during project construction. However, construction activities would result in surface disturbance related to clearing and grading that could create the potential for runoff and/or erosion to occur, which could contribute to a violation of a water quality standard or waste discharge requirement. However, since the proposed project site is greater than one acre, as a condition of the project, LADWP would prepare erosion control plans and reports, including a SWPPP. Erosion and sediment control measures shall be in accordance with applicable state and local regulations and BMPs. In addition, LADWP must comply with a Storm Water Construction Activities General Permit and obtain an NPDES Permit. Compliance with these provisions would reduce potential soil runoff and erosion at the site to a less than significant level. After construction of the proposed project, exposed areas of the site would be stabilized with gravel, plant material, or other permeable cover to prevent significant runoff and erosion. The operation of the proposed project would not otherwise

involve activities that would contribute to a violation of a water quality standard or waste discharge requirement.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. Water is supplied to the Adelanto Station by the City of Adelanto Water Department. A large portion of the City's water supply is provided by groundwater pumping. During project construction, water would be required to control dust at the project site, as a component of the concrete mix required for the transformer and inverter foundations, and for other miscellaneous uses. Because of the brief duration of the construction schedule (projected to be five months) and the relatively small quantity of water required in the context of the available supply, no depletion of groundwater supplies would occur from project construction. During project operations, the solar panels may occasionally require washing to maintain energy generation efficiency. To wash the panels one to two times a year, approximately 0.15 to 0.30 acre-feet of water would be required annually; even the upper end of this range represents less than the annual water use of a typical California household, and no depletion of groundwater supplies would occur related to project operations. Most of the area involved in the project, including the solar array field, would remain as permeable surface, and groundwater recharge potential at the site would not be significantly affected.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. As discussed above, the project site is relatively level, and minimal site grading is anticipated to accommodate the solar panel arrays. Storm water through the solar site is currently conducted along the western side of the switching station property in south to north direction. Existing site drainage structures include an earthen berm, which was installed at the time that the switching station was built to redirect natural sheet flow around the switchyard. The solar panel arrays would be accommodated with minimal modification to the existing site topography and drainage pattern. It is anticipated that site drainage would continue to be handled primarily above grade and that minimal, if any, sub-grade structures would be required. Since the proposed project site is greater than one acre, as a condition of the project, LADWP shall require that the design contractor prepare erosion control plans and reports, including a SWPPP. Erosion and sediment control measures shall be in accordance with applicable state and local regulations and BMPs. In addition, LADWP must comply with a Storm Water Construction Activities General Permit and obtain an NPDES Permit. Compliance with these provisions would reduce potential soil erosion, siltation, and runoff at the site to a less than significant level. After construction of the proposed project, exposed areas of the site would be stabilized with gravel, plant material, or other permeable cover to prevent significant erosion, siltation, and runoff.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. See discussion under Item 3.9(c).

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

Less Than Significant Impact. As discussed above, the project site is relatively level and minimal site grading is anticipated to accommodate the solar panel arrays. Storm water is currently directed on the surface to the northwest corner of the proposed project site, from which it is conducted along the western side of the switching station property. The solar arrays would be accommodated with minimal modification to the existing site topography and drainage pattern. In addition, most of the area involved in the project, including the solar collector field, would remain as permeable surface. Storm water flows at the switching station property after completion of the proposed project would be equivalent in volume and general path as current conditions, and would not exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff. As discussed above, the operation of the proposed project would not involve activities that would contribute significant amounts of additional runoff water such that the capacity of existing or planned storm water drainage systems would be exceeded, or additional sources of polluted runoff would be created.

f) Otherwise substantially degrade water quality?

Less Than Significant Impact. Based on the implementation of a SWPPP and BMPs during project construction and based on the type of activities anticipated during project operations, the proposed project would not otherwise substantially degrade water quality.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed project is a solar power generation facility within an existing electrical switching/converter station and does not include the construction of any housing. Furthermore, according to the most recent Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for Adelanto, the project site is not located within an area subject to a 100-year flood hazard.[31]

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. According to the most recent FEMA Flood Insurance Rate Map for Adelanto, the project site is not located within an area subject to a 100-year flood hazard.[32]

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. According to the most recent FEMA Flood Insurance Rate Map for Adelanto, the proposed project site is not located within an area subject to a significant flood hazard.[33] It is not located with the inundation area of a levee or dam.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project site is not located near any water body such that inundation related to seiche or tsunami would occur. The generally level topography of the project site (approximately

[31] FEMA Map Service Center. *Flood Insurance Rate Map (FIRM) 06071C5795H*. 2008 Website: http://map1.msc.fema.gov/idms/IntraView.cgi?KEY=90550343&IFIT=1
[32] Ibid
[33] Ibid

1.5 percent slope) and the surrounding area and the distance from mountain canyons (approximately five miles) limits the potential for significant mudflow events at the site.

3.10 LAND USE AND PLANNING

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. Land Use and Planning. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

DISCUSSION

Would the project:

a) Physically divide an established community?

No Impact. The project would be located entirely within the existing 300-acre Adelanto Switching Station and DC Converter Station, which is located in an area zoned for manufacturing and industrial use.[34] Existing land use surrounding the Adelanto Station consists of vacant land or manufacturing/industrial functions. Construction and operation of the proposed project within the station boundaries would not result in physical division of any established communities in the vicinity.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The project would be located completely within the existing 300-acre Adelanto Switching Station and DC Converter Station, the perimeter of which is entirely fenced. Adelanto Station is located in a section of the city zoned for manufacturing and industrial use, which includes all property surrounding the station, with the exception of corridors zoned for electrical transmission easements. Adjacent land uses currently include vacant property to the west, southwest, south, and southeast; vacant property and a pipe manufacturing facility to the east; vacant property, a San Bernardino County fire station, the Adelanto Community Correctional Facility, and a California Department of Corrections & Rehabilitation facility to the north; and industrial facilities to the northeast. A few isolated residences are located approximately 0.5 miles to the east of the Adelanto Station; otherwise, the nearest residential developments to the station lie over a mile to the north, southeast, and south. The proposed project is compatible with the site zoning designation and surrounding land uses, and it

[34] Op. cit., City of Adelanto.

would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed project would not conflict with any habitat conservation plan. The site is not within a habitat conservation plan or a natural community conservation area.

3.11 MINERAL RESOURCES

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

DISCUSSION

Would the project:

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

No Impact. See discussion in Item 3.11(b).

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

No Impact. The proposed project would not result in the loss of a locally important mineral resource. The project site is not located on significant mineral or energy deposits as mapped by the city, county, or state.[35]

[35] City of Adelanto. *Conservation/Open Space Element of the Adelanto General Plan*. 1994.

3.12 NOISE

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. Noise. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?	☐	☐	☒	☐
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

DISCUSSION

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The City of Adelanto Noise Ordinance (Section 17.90.020 of the Adelanto Zoning Ordinance) exempts noise related to the construction and operation of public works facilities, including utilities subject to the regulatory jurisdiction of the California Public Utilities Commission (CPUC).[36] However, since LADWP is not subject to CPUC regulation, the proposed project may fall under the provisions of the noise standards specified in Adelanto Noise Ordinance. According to the ordinance, "construction activity and equipment maintenance is limited to the hours between 7:00 a.m. to dusk on weekdays. Construction may not occur on weekends or State holidays, without prior consent of the Building Official."[37] It is not anticipated that the proposed project construction would occur outside the hours specified in the ordinance. However, noise in the City of

[36] City of Adelanto. *Section 17.90.020 Noise, Chapter 17.90 Performance Standards, Title 17 Adelanto Zoning Ordinance.* Website: http://www.amlegal.com/nxt/gateway.dll/California/adelanto_ca/cityofadelantocaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:adelanto_ca

[37] Ibid

Adelanto is also limited by the standards contained in Table VIII-2, *Land Use Compatibility Guidelines Related to Noise Exposure*, in the Noise Element of the Adelanto General Plan.[38] This table defines noise exposure limits in terms of a Community Noise Equivalent Level (CNEL) measurement, which describes sound levels in frequency adjusted A-weighted decibels (dBA) over a 24-hour period to account for differences in noise perception during daytime and nighttime hours. According to Table VIII-2, manufacturing and industrial functions are compatible uses in zones where the CNEL does not exceed 70 dBA. Based on the existing zoning and development, this would include most uses surrounding the Adelanto Station. However, the Correctional Facilities and the San Bernardino County Fire Station, both located along the north side of Rancho Road, north of the switching station, may be considered residential uses since both facilities are occupied 24 hours a day, including for sleep. While not reflected in Table VIII-2, residential uses are normally considered compatible in zones where the CNEL does not exceed 60 dBA.

Noise levels decrease as the distance from the source to the receiver increases. Noise generated at the proposed project construction site would decrease approximately 7.5 dBA for each doubling of the distance between the source and receiver when traveling over soft surfaces like those that surround the Adelanto Station. Construction equipment and vehicles can generate short-term maximum noise levels in the order of 89 decibels (dBA) at a distance of 50 feet when the equipment is under maximum load. This would be the highest noise level anticipated during construction of the project, related to heavy equipment operations, and most project construction activities would likely generate average noise levels significantly less than 89 dBA.

Based on the 7.5 dBA reduction factor over soft surfaces, noise generated by project construction (assuming a source noise level of 89 dBA at 50 feet) would diminish at surrounding uses to below the thresholds reflected in Table VIII-2 in the Noise Element of the Adelanto General Plan (see Table 10). This noise would be temporary, generated only during the construction of the project, and no sensitive receptors (such as homes, schools, or professional offices) would be affected.

TABLE 10
PROJECT CONSTRUCTION NOISE AT SURROUNDING USES

Use	Location from Project Site	Distance from Project Site (ft)	Noise from Project Construction	CNEL Threshold	Significance of Impact
Manufacturing Facilities	Northeast (Daisy Road)	1,950	50 dBA	70 dBA	Less than Significant
Vacant Residentially Zoned Property	South (Holly Road)	1,350	54 dBA	60 dBA	Less than Significant
Industrial Uses	West (Koala Road)	2,400	48 dBA	70 dBA	Less than Significant
Fire Station	North (Rancho Road)	3,200	44 dBA	60 dBA	Less than Significant
Correctional Facilities	North (Rancho Road)	3,800	43 dBA	60 dBA	Less than Significant

Based on the nature of the project facilities, the operation of the project is expected to generate only negligible noise related to periodic maintenance activities, including the use of vehicles and equipment, and no significant impact related to a violation of noise standards would occur.

[38] City of Adelanto. *Table VIII-2, Land Use Compatibility Guidelines Related to Noise Exposure, Noise Element of the Adelanto General Plan.* 1994.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Minor vibration or groundborne noise may be generated from the operation of heavy vehicles and machinery during site grading and trenching activities. However, with the exception of percussive pile driving (which is not anticipated on the proposed project), vibration levels from general construction activities are below the threshold of annoyance at distance greater than 25 feet. Earth screw augering or vibration pile driving is expected to be limited to the operation of one or two machines during the construction period, and the vibration levels from this equipment would be consistent with general construction activities described above. Because of the distances to surrounding uses, no significant impacts related to vibration during construction are anticipated. Based on the nature of the project facilities, the operation of the project would not create groundborne vibrations.

c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?

No Impact. The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity. Based on the nature of the project facilities, the operation of the project is expected to generate only negligible noise related to periodic maintenance activities, including the use of vehicles and equipment. However, based on the distances to and nature of uses surrounding Adelanto Station, no significant increase in ambient noise levels at receiving locations would occur.

d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?

Less Than Significant Impact. Construction activities would temporarily result in increased noise levels on the project site. However, as discussed in Item 3.12(a), based on the distances between the project site and surrounding uses, this construction-generated noise would diminish to levels well below the thresholds established in the City of Adelanto Noise Ordinance. Based on the location of the project within a manufacturing/industrial zone, no significant impacts related to a temporary or periodic increase in ambient noise levels from construction would occur.

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

No Impact. The closest airport to the project site is the SCLA, located approximately 3.5 miles to the northeast. The Adelanto Station falls outside the boundaries of the SCLA Comprehensive Airport Land Use Plan (CALUP) planning area.[39] Furthermore, according to the CALUP, the station lies well outside the 65 dBA CNEL (Community Noise Equivalent Level) contour associated with airport operations. As defined in the CALUP, industrial uses, such as the proposed project, would normally be acceptable without mitigation within areas encompassed by up to the 75 dBA CNEL contour. Therefore, the project would not expose people to excessive noise levels related to aviation activity.

[39] City of Victorville. *Southern California International Airport Comprehensive Airport Land Use Plan*. 1999. Website: http://www.co.san-bernardino.ca.us/landuseservices/ACLUPs/So%20Calif%20Logistics%20ACLUP.pdf

f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?

No Impact. The closest private airstrip, Krey Field, is located approximately six miles west of the proposed project site. Therefore, the project would not expose people to excessive noise levels related to aviation activity.

3.13 POPULATION AND HOUSING

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. Population and Housing. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION

Would the project:

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

No Impact. The project does not include construction of new homes or businesses or the extension of roads or other infrastructure that would induce population growth. The proposed solar panels would provide energy to help meet existing and already projected demand in the LADWP service area and, based on City of Los Angeles RPS goals, would replace existing fossil fuel generated power. The project thus would not indirectly induce population growth through the provision of additional energy supply.

The construction workforce for the project is estimated to reach about 60 workers at its peak for approximately a three-month period. Due to this relatively low number of personnel and the expected relatively short duration of the construction (approximately five months), no substantial permanent population growth in the area would occur related to project construction. It is anticipated that the local communities surrounding the project would be able to accommodate temporary housing needs within the existing supply of lodging and rental properties.

The operation of the proposed solar power generation facility would not require any new employees on site and thus would not induce population growth or the need for new housing in the area.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project would be located completely within the existing 300-acre Adelanto Switching Station and DC Converter Station. There is no existing housing within the project property, nor does the project require removal of any housing outside the property.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The project would be located completely within the existing 300-acre Adelanto Switching Station and DC Converter Station. It would not displace any people, either directly or indirectly, and, therefore, would not necessitate the construction of replacement housing elsewhere.

3.14 PUBLIC SERVICES

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

DISCUSSION

Would the project:

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

Fire protection?

No Impact. Fire protection for the Adelanto Switching Station and DC Converter Station is provided by the San Bernardino Fire Department, North County Division. The nearest fire station is located across Rancho Road directly north of the Adelanto Station, providing immediate response capability to the project site. The nature, scale, and location of the project facilities would not substantially increase the risk of fire or the need for fire protection services at the switching/converter station such that new or physically altered fire facilities would be required.

Police protection?

No Impact. Police protection for the Adelanto Switching Station and DC Converter Station is provided by the San Bernardino Sheriff's Department, Adelanto station, which is located approximately 3.5 miles by road northeast of the proposed project site. The switching/converter station is fully fenced and is manned frequently by operational personnel. The nature, scale, and location of the project facilities would not substantially increase the need for police protection services at the switching/converter station such that new or physically altered police facilities would be required.

Schools?

No Impact. The proposed project is a solar power generation facility within an existing electrical switching/converter station. No feature of the project would directly generate a demand for school services, nor would the project lead directly or indirectly to substantial population growth such that new or physically altered school facilities would be required.

Parks?

No Impact. The proposed project is a solar power generation facility within an existing electrical switching/converter station. No feature of the project would directly generate a demand for parks, nor would the project lead directly or indirectly to substantial population growth such that new or physically altered park facilities would be required.

Other public facilities?

No Impact. The proposed project is a solar power generation facility within an existing electrical switching/converter station. No new housing or businesses would be constructed as part of the project nor would the project directly or indirectly induce population growth in the area such that new or physically altered governmental facilities would be required to adequately provide services.

3.15 RECREATION

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

DISCUSSION

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

No Impact. Neither the construction nor operation of the proposed project would generate any additional population that would increase the use of existing neighborhood or regional parks or other recreational facilities.

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

No Impact. The proposed project is a solar power generation facility within an existing electrical switching/converter station. It does not include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.16 TRANSPORTATION AND TRAFFIC

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. Transportation and Traffic. Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	☐	☐	☐	☒

DISCUSSION

Would the project:

a) Conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact. During project construction, up to 60 workers would commute daily to the site during the peak of activity from October 2010 through December 2010, a period of three months. During the first two months of the five-month project construction period, the peak number of workers on-site per day would reach only 30. Many or most of the workers would arrive at the project site prior to the beginning of the 7:00 a.m. workday. However, to determine potential conflicts with plans, ordinances, or policies related to the performance of the local circulation system, it was assumed that all workers would still be on the road during the a.m. peak traffic period (generally a period

between 7:00 a.m. and 9:00 a.m.). Likewise, it was assumed that all workers would be on the road during the p.m. peak traffic period (between 4:00 p.m. and 6:00 p.m.), although many or most workers may depart the site prior to this time.

To determine the peak-hour traffic generation from construction worker commute trips, it was assumed that workers would travel to and from the project site with an average vehicle occupancy of 1.2 passengers. This assumption, derived from a factor of one of every six workers carpooling, is reasonable based on the location of the project site in relation to the regional workforce supply. Based on this vehicle occupancy factor and assuming all workers would arrive at the project site at essentially the same time in the morning and depart at essentially the same time in the afternoon/evening, 50 one-way commuter vehicle trips would be created during the a.m. and p.m. peak traffic periods.

In addition to worker commute trips, project construction would involve truck trips to and from the site to deliver materials and supplies. At its peak, project construction would generate approximately 10 truck round-trips per day. Assuming that these truck trips would be distributed throughout the day (rather than concentrated in either the morning or afternoon/evening), a maximum of two truck round-trips or four one-way trips would occur during either the a.m. or p.m. peak traffic period. However, because trucks tend to create greater traffic congestion on roadways than passenger vehicles, especially at intersections, trucks were converted for analysis purposes to passenger car equivalents (PCEs). According to the San Bernardino County Congestion Management Program *Guidelines for CMP Traffic Impact Analysis Reports*, the PCE for medium-duty (three-axle) trucks, such as would be used during the proposed project construction, is a factor of 2.0.[40] This would result in eight truck-related PCE one-way trips during each the a.m. and p.m. peak traffic periods (four truck one-way trips at a PCE of 2.0).

Therefore, in total, the one-way trips generated from both worker commutes and truck deliveries during the peak of project construction would be 58 in both the a.m. and p.m. peak traffic period.

The proposed project is located in Traffic Analysis Zone 9 in the City of Adelanto General Plan Circulation Element.[41] Land uses within this zone include single-family residential, medium density residential, manufacturing/industrial, and commercial. The proposed project is an industrial use located within an MI zone. The vehicle trip generation rate for manufacturing/industrial uses according to the General Plan Circulation Element is 50 trips per acre.[42] This would equate to approximately 2,125 daily trips for the project site acreage (50 trips times 42.5 acres). This rate would normally be applied to long-term permanent trip generation related to a project's operation, but it places the proposed project's temporary and short-term construction-related daily peak one-way vehicle trips of 58 in context with the intended traffic in the vicinity.

Furthermore, recent studies have concluded that roadway intersections in the general vicinity of the project operate within acceptable levels of service (LOS) during the a.m. and p.m. peak hours. Normally, LOS designations A, B, C, and D, as defined in Table 11, are considered acceptable.

[40] San Bernardino Associated Governments. *Appendix C: Guidelines for CMP Traffic Impact Analysis Reports In San Bernardino County, Congestion Management Program for San Bernardino County.* 2007. Website: http://www.sanbag.ca.gov/planning/cmp/cmp_app-c_02-09.pdf.

[41] City of Adelanto. *Figure V-2, Traffic Analysis Zones, Circulation Element of the Adelanto General Plan.* 1994.

[42] City of Adelanto. *Table V-3, Land Use by Traffic Analysis Zones, Circulation Element of the Adelanto General Plan.* 1994.

TABLE 11
TRAFFIC LEVEL OF SERVICE (LOS) DEFINITIONS

LOS	Definition
A	EXCELLENT. No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	VERY GOOD. This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	GOOD. This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	FAIR. This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	POOR. Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	FAILURE. This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

Source: *Highway Capacity Manual, Special Report 209,* Transportation Research Board, Washington, DC, 2000.

Based on 2009 studies, the current LOS during the a.m. and p.m. peak periods at intersections in the project vicinity are indicated in Table 12.[43]

TABLE 12
PROJECT VICINITY INTERSECTIONS CURRENT LOS

Intersection	LOS	
	A.M.	P.M.
Rancho Road/Bellflower Street	A	A
Rancho Road/U.S. Route 395	C	C
Rancho Road/Adelanto Road	A	A
U.S. Route 395/Holly Road/Adelanto Road	C	D
U.S. Route 395/Air Expressway Boulevard	C	C
Adelanto Road/Air Expressway Boulevard	C	C
U.S. Route 395/Mojave Drive	C	D
Bellflower Street/Mojave Drive	A	B
Verbena Road/Mojave Drive	A	A

Source: *Draft Environmental Impact Report for Adelanto Towne Center,* City of Adelanto, 2009.

The relatively low level of peak-hour traffic generated by the proposed project construction (58 maximum one-way trips during the peak of activity) would not degrade the LOS at these intersections

[43] Op. cit. Adelanto Towne Center EIR

such that performance of the circulation system in the vicinity would be significantly impacted. Although two of these intersections currently operate at an LOS of D during the p.m. peak period, the intersections are relatively distant from the project site (approximately 2.5 miles and 3.5 miles). Considering the distribution of trips (i.e., the various routes followed to and from the project site), which tends to dilute the effect of project-related traffic as distance from the project site increases, no significant degradation of service at these intersections would be expected from project construction-related trips. Furthermore, because any effects from project construction-generated traffic would be temporary and very short-term (three months during the peak of construction activity), no permanent or temporary long-term degradation of conditions would occur such that a significant conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system would result.

No additional personnel would be required at the Adelanto Station on a daily basis to maintain and operate the project after construction is completed. A small number of personnel may be required during brief periods when certain maintenance operations must be performed. These activities would generate minimal traffic to and from the project site, and project operations would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the local circulation system.

b) Conflict with an applicable congestion management program including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. See discussion under Item 3.16(a) regarding the potential impact of project construction activities and project operations on level of service standards for surrounding roadways. A Traffic Impact Analysis (TIA) Report for a project would generally be required under the San Bernardino County Congestion Management Program (CMP) if the project was predicted to generate at least 250 two-way peak-hour trips and, in the case of state highways, was also predicted to add at least 50 peak-hour trips to the highway.[44] As discussed above, project operations would generate minimal traffic, and project construction would generate a temporary and very short-term (three-month) peak of 58 one-way trips during both the a.m. and p.m. peak traffic period. This would be well below the 250 peak-hour trip threshold that would trigger the need for a TIA Report under the CMP. Although the project would generate over 50 peak-hour trips during construction, based on trip distribution, fewer than 50 of these would be expected to occur on U.S. Route 395, which is the only San Bernardino County CMP system designated roadway that would be affected by the project.[45]

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The proposed project is a solar power generation facility within an existing electrical switching/converter station. It would not generate an increase in air traffic levels. Based on the location of the project in relation to the SCLA (which is located approximately 3.5 miles to the northeast of the project site) and the low height of project facilities (especially in relation to adjacent existing facilities at the Adelanto Station), the project would not create any obstructions that would result in a change in air traffic patterns in the region, nor would it represent a land use conflict that would require a change in air traffic patterns to reduce safety risks.

[44] Op. cit. San Bernardino Associated Governments.

[45] San Bernardino Associated Governments. *Figure 2-3: County of San Bernardino Victor Valley/Barstow Region CMP Road System, Congestion Management Program for San Bernardino County.* 2007. Website: http://www.sanbag.ca.gov/planning/cmp/cmp07-full%20version.pdf

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The proposed project would not include the construction of any new off-site roads or the modification of any existing off-site roads either for the purposes of long-term project operations or temporarily to support project construction. Construction of the project would include the truck deliveries of materials, components, and supplies to the site. A very limited number of oversize loads may be required to deliver large equipment to the site at the outset of construction and remove the equipment after construction is completed. If oversize loads are needed, permits specifying route and time limits, as well as any necessary traffic control measures, would be required from state, county, and/or city agencies. With the issuance of and compliance with such permits, any potentially significant impacts would be reduced to a less than significant level. General truck traffic is compatible with the anticipated construction route along Route 395, a two- or four-lane highway commonly used by trucks, and along Rancho Road, a four-lane road through an area that is zoned primarily for manufacturing and industrial uses between Route 395 and Daisy Road at the project site. The intersection of Route 395 and Rancho Road is signalized and includes left-turn lanes in all directions and right-hand acceleration lanes on northbound and southbound Route 395. A left-turn lane is also provided from Rancho Road westbound to Daisy Road southbound. Operation of the project would require occasional truck deliveries of replacement components, but this would also be compatible with the surrounding road network and land uses. No increased hazard due to road design or incompatible uses would occur.

e) Result in inadequate emergency access?

No Impact. The proposed project would not hinder emergency access in the area. No permanent or temporary road closures or modifications are proposed as part of the project. All construction activities and staging would take place within the existing Adelanto Station property, and the project would not interfere with the primary station entrance off of Rancho Road along the north station boundary.

f) Result in inadequate parking capacity?

No Impact. The proposed project would not result in inadequate parking capacity. During construction, worker vehicle parking would be accommodated within the Adelanto Station property. Operation of the project would require no new personnel at the station, which has adequate parking to accommodate existing personnel.

g) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?

No Impact. The proposed project would be located entirely within the boundaries of the existing Adelanto Switching and DC Converter Station. Construction activities would take place entirely within the station and would not require the removal or relocation of alternative transportation facilities (i.e., bus stops and bike lanes).

3.17 UTILITIES AND SERVICE SYSTEMS

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII.Utilities and Service Systems. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Projects projected demand in addition to the providers existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the Projects solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☒	☐	☐

DISCUSSION

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. During project construction, sanitary waste would be handled by temporary portable chemical toilets, the waste from which would be removed by a private contractor and disposed at an approved offsite location that would comply with the wastewater treatment requirements of the Lahontan Regional Water Quality Control Board. Adelanto Station is connected to a City of Adelanto sanitary sewer line located in Aster Road, north of the station. Because no new personnel would be required at the Adelanto Station in association with the operation of the proposed project, no changes to the existing sanitary waste system operations would occur. No industrial wastewater is anticipated as a result of project operations, other than relatively minimal quantities of water required to occasionally wash the solar panels.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. During project construction, sanitary waste would be handled by temporary portable chemical toilets, the waste from which would be removed by a private contractor and disposed at an approved offsite location. Because of the brief duration of the construction schedule (projected to be five months) and the relatively small number of personnel (approximately 60) involved during the peak of construction activity in the context of the regional wastewater treatment system, no new treatment facilities or expansion of existing facilities would be required. Because no new personnel would be required at the Adelanto Station in association with the operation of the proposed project, no new treatment facilities or expansion of existing facilities would be required. No wastewater is anticipated as a result of project operations, other than minimal quantities of water required to occasionally wash the solar panels. No new treatment facilities or expansion of existing facilities would be required.

During project construction, water would be required to control dust at the project site, as a component of the concrete mix required for the transformer and inverter foundations, and for other miscellaneous uses. Because of the brief duration of the construction schedule (projected to be five months) and the relatively small quantity of water required in the context of the regional water treatment system, no new water treatment facilities or expansion of existing facilities would be required. During project operations, the solar panels may occasionally require washing to maintain energy generation efficiency. To wash solar panels one to two times a year, approximately 0.15 to 0.30 acre-feet of water would be required annually; even the upper end of this range represents less than the annual water use of a typical California household. This quantity of water would not require new water treatment facilities or expansion of existing facilities.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. As discussed above, the project site is relatively level within the designated solar array field area, and minimal site grading is expected. The site currently drains to the northwest. The solar arrays would be accommodated with minimal modification to the existing site topography and drainage pattern. In addition, most of the area involved in the project, including the solar collector field, would remain as permeable surface. Storm water flows at the switching station property after completion of the proposed project would be equivalent in volume and general path as current conditions, and the construction of new storm water drainage facilities or the expansion of existing facilities are not anticipate.

d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. Water is supplied to the Adelanto Station by the City of Adelanto Water Department. As discussed above in Item 3.17(b), during project construction, water would be required to control dust at the project site, as a component of the concrete mix required for the foundations, and for other miscellaneous uses. Because of the brief duration of the construction schedule (projected to be five months) and the relatively small quantity of water required in the context of the regional water treatment system, no new or expanded entitlements would be required. During project operations, the solar panels would occasionally need to be washed to maintain energy generation efficiency, requiring the use of up to 0.3 acre-feet per year, which represents less than the

annual water use of a typical California household. This quantity of water would not require new or expanded entitlements

e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Projects projected demand in addition to the providers existing commitments?

No Impact. As discussed in Item 3.17(b), during project construction, sanitary waste would be handled by temporary portable chemical toilets, the waste from which would be removed by a private contractor and disposed at an approved offsite location. Because of the brief duration of the construction schedule (projected to be five months) and the relatively small number of personnel (approximately 60) involved during the peak of construction activity in the context of the regional wastewater treatment system, the local wastewater treatment provider (the City of Adelanto Water Department) would have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. Adelanto Station is connected to a City of Adelanto sanitary sewer line located in Aster Road, north of the station. Because no new personnel would be required at the Adelanto Station in association with the operation of the proposed project, the project would not increase the demand for wastewater treatment by the City of Adelanto Water Department. No wastewater is anticipated as a result of project operations, other than minimal quantities of water required to occasionally wash the solar panels, which would not result in an exceedance of the treatment capacity of the Adelanto Water Department.

f) Be served by a landfill with sufficient permitted capacity to accommodate the Projects solid waste disposal needs?

Less Than Significant Impact. Since no demolition and minimal grading are required to accommodate the proposed project, and since most components are prefabricated, minimal solid waste would be generated during project construction. Construction debris would be recycled or transported to a landfill site and disposed of appropriately. In accordance with AB 939, LADWP would work to ensure that source reduction techniques and recycling measures are incorporated into project construction and operation. Operation of the proposed project would not result any increase in personnel at the project site and would generate minor additional quantities of waste that would not significantly impact landfill capacities.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The City of Adelanto participates in federal, state and regionally mandated solid waste diversion, reduction, and recycling programs. Though the proposed project would not generate significant quantities of solid waste during construction or operations, participation in local solid waste programs is an important compliance action to achieve County waste reduction laws and mandates. As compliance is a matter of regulation and law, LADWP is obligated to comply with federal, state, and local solid waste diversion, reduction, and recycling mandates, including those advocated by the Mojave Desert and Mountain Recycling Authority, of which the City of Adelanto is a member.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

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

DISCUSSION

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

Less Than Significant With Mitigation Incorporated. Please refer to items 3.4 and 3.5 of the checklist for more detailed information regarding the proposed project's impact on biological and cultural resources.

Site surveys for sensitive biological resources showed that none were present or expected to be present at the site. Adequate precautions in the form of preconstruction surveys are to be implemented to ensure that impacts to listed, sensitive, and otherwise protected animals remain less than significant. Relative to desert tortoise and Mohave ground squirrel, the project site is not located within designated critical habitat, a wildlife management area, or a habitat conservation plan area. The project's impact on these species is less than significant with mitigation incorporated. Proposed mitigation includes conducting preconstruction clearance surveys and providing standard avoidance measures during construction, including a contractor education program.

Cultural resource surveys identified four potential historic sites, none of which were determined to be significant or require further analysis. However, the site was determined to be within an area of paleontological sensitivity. Paleontological resources would be protected by implementing mitigation to inform construction workers of the nature of paleontological resources that may be encountered

during construction and by having a qualified paleontologist on-call to evaluate any finds made during construction.

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

Less Than Significant Impact. The impacts of the proposed project that are potentially cumulatively considerable involve biological resources and air quality.

Biological Resources

Although the ASPP has the potential to contribute to the cumulative loss of native creosote scrub habitat, the impact is not cumulatively considerable in this case because the site is already committed to use as an electrical switching and converter station and is fully enclosed with chain link fence. Notwithstanding the ongoing urbanization in Adelanto that has resulted in the conversion of hundreds of acres of native habitat to commercial and residential use with associated increase in traffic and population, the project site with its existing uses and limitations is not well-suited to habitat preservation. No sensitive wildlife species was observed using the site. For these reasons, the proposed project would not have cumulatively considerable or significant cumulative impacts relative to biological resources.

Air Quality

In analyzing cumulative impacts from a proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the project area is listed as "non-attainment" for federal or state AAQS. In the event direct impacts from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of screening levels and the project's contribution accounts for more than an insignificant proportion of the cumulative total emissions. As discussed in Section 3.3, the Western Mojave Desert Area is considered a moderate nonattainment area for the 8-hour O_3 NAAQS; however, a large portion of O_3 exceedances in the Western Mojave Desert Area are attributable to O_3 transport from the South Coast Air Basin. The area is also designated as a moderate nonattainment area for the NAAQS for PM_{10}. The Western Mojave Desert Area is considered a nonattainment area for the CAAQS for O_3, $PM_{2.5}$, and PM_{10}.

Because the project's emissions of O_3 precursors are mainly attributable to temporary construction activities, and because the project's direct emissions are below the MDAQMD's significance thresholds, the project would not result in a cumulatively considerable increase in nonattainment pollutants. Because the project would also provide renewable energy to the South Coast Air Basin, the project would reduce emissions within the South Coast Air Basin, thus lessening the amount of pollution available for transport to the Western Mojave Desert Area.

In addition, project construction emissions should be evaluated in consideration with other projects in the vicinity of the project (i.e., within one mile) to assess the potential for cumulative impacts due to PM_{10} emissions during construction. No additional projects have been identified that are likely to be under construction during the same timeframe as the ASPP that would result in cumulatively significant impacts due to particulate matter. Accordingly, the proposed project would not have cumulatively considerable or significant cumulative impacts relative to air quality.

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

Less Than Significant Impact. The analysis presented in this document does not identify significant adverse impacts on human beings. The impacts were characterized as either less than significant or no impact and no mitigation measures were required. Therefore, the proposed project would not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

4.0 MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during project construction and operations, as required. The enforcement provisions of the MMRP may be modified by LADWP during project implementation in response to changing conditions or other refinements. Table 13 has been prepared to assist responsible parties in implementing the MMRP. The table identifies the mitigation measures that are to be monitored, the party responsible for implementing the measure, the timing or project phase where the mitigation measure is applicable or should be implemented, and the agency responsible for enforcing the measure. A verification column for initials/signature and date of the responsible individual is also provided. The numbering of the mitigation measures follows the numbering found in the Adelanto Solar Power Project Mitigated Negative Declaration.

TABLE 13: MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measures	Responsible Implementing Party	Timing of Verification	Enforcement Agency	Verification of Completion	
				Initials	Date
Wildlife and Habitat Mitigation Measures					
BIO-1. Joshua trees suitable for removal will be relocated within the existing Adelanto Switching Station parcel by a qualified landscape contractor with previous successful (greater than 50% survivorship after two years) transplant experience.	LADWP	Prior to Initiation of grading	LADWP		
BIO-2. A preconstruction survey within the Project area will be conducted prior to ground disturbance and construction activities that occur between March 15 and August 31. The survey will be conducted no more than two weeks prior to mobilization or construction activities and should be conducted by a qualified biologist familiar with Western burrowing owl, raptors, and other avian species of the region. If nesting bird species are detected, then mitigation will be incorporated to establish a work restriction limit around the active nest until chicks are fledged or the nest naturally fails.	LADWP	30-days prior to construction	LADWP		
BIO-3. Comply with and implement best practice measures consistent with USFWS and CDFG determination and guidance, to protect low probability of occurrence of encountering desert tortoise during project construction. Conduct a pre-construction clearance survey prior to mobilization or construction that would result in vegetation or soil disturbance to confirm absence of desert tortoise within the facility parcel (the fenced parcel limits supporting native vegetation or open habitat).	LADWP	Prior to start of construction	USFWS CDFG		
BIO-4. Provide construction personnel with a Worker Environmental Awareness Program (WEAP) to inform them of Best Management Practices for limiting impact to wildlife and native vegetation inside and outside the construction limits.	Construction Contractor	Prior to start of construction	LADWP		
Paleontological Resource Mitigation Measures					
CR-1. The Contractor/Construction Manager shall ensure that a paleontological discovery training program is implemented prior to the start of construction. The training program will be prepared by a trained paleontologist and shall consist of a brief PowerPoint presentation (or other approved presentation method) for all construction personnel. The emphasis of the training is to educate all construction personnel on the potential paleontological resources that could be found on the project during excavation and the proper procedures for dealing with resources if encountered. Should resources be identified during construction, work shall cease in the immediate area (within 100 feet) and a qualified paleontologist shall be notified to determine if the resource is significant. Work shall not continue until the qualified paleontologist makes a determination.	Construction Contractor	Prior to the start of construction	LADWP		
CR-2. In the event that fossil remains are encountered, all recovered fossil remains shall be prepared to the point of identification and to the lowest taxonomic level possible. The remains shall be curated and catalogued, the corresponding geologic and geographic site data archived, and all items transferred to the appropriate museum repository, preferably to the Earth Sciences Division of the San Bernardino County Museum.	Construction Contractor	During Construction	LADWP		

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