3.6 Geology and Soils

This section includes an evaluation of the project in relation to existing geologic and soils conditions within the project site. Information contained in this section is summarized from the *Geotechnical Report for the VEGA 6 Solar Project* prepared by Landmark Consultants, Inc. This report is contained in Appendix G of this EIR.

3.6.1 Existing Conditions

Regional Setting

VEGA 6

The VEGA 6 project site is located in the Salton Trough region of the Colorado Desert physiographic province of southeastern California. The Salton Trough encompasses the Coachella, Imperial and Mexicali Valley which extend from northeast of Palm Springs near San Gorgonio Pass to the Gulf of California. The Salton Trough is bounded on the northeast by the San Andreas Fault and Chocolate Mountains and the southwest by the Peninsular Range and faults of the San Jacinto Fault Zone (Appendix G of this EIR).

The Salton Trough represents the northward extension of the Gulf of California, containing both marine and non-marine sediments deposited since the Miocene Epoch. Tectonic activity that formed the trough continues at a high rate as evidenced by deformed young sedimentary deposits and high levels of seismicity (Appendix G of this EIR).

The Imperial Valley is directly underlain by lacustrine deposits, which consist of interbedded lenticular and tabular silt, sand, and clay. The Late Pleistocene to Holocene (present) lake deposits are probably less than 100 feet thick and derived from periodic flooding of the Colorado River which intermittently formed a freshwater lake (Lake Cahuilla). Older deposits consist of Miocene to Pleistocene non-marine and marine sediments deposited during intrusions of the Gulf of California. Basement rock consisting of Mesozoic granite and Paleozoic metamorphic rocks are estimated to exist at depths between 15,000 - 20,000 feet (Appendix G of this EIR).

Ramon Substation Expansion

The Ramon Substation expansion area is located in the northern Coachella Valley, an elongated rift valley that forms the northwestern extent of the Salton Trough. The expansion area is approximately two miles southwest of the Indio Hills, a low range formed by uplift between the two main faults of the San Andreas fault system (Appendix F2 of this EIR).

Local Geology and Surface Conditions

VEGA 6The VEGA 6 project site is located in the Imperial Valley region of the California low desert. According to the Geotechnical Report prepared for the VEGA 6 project, the northern 1/3 of the solar energy facility site consists of surficial hard silty clay/clay soils, followed by interbedded layers of dense to very dense clayey/sandy silts, sands/silty sand, and very stiff to hard clay soils and the southern 2/3 of the project site consists of surficial medium dense to very dense sand/silty sand soils with layers of dense to very dense clayey/sandy silts and very stiff to hard clay soils (Appendix G of this EIR).

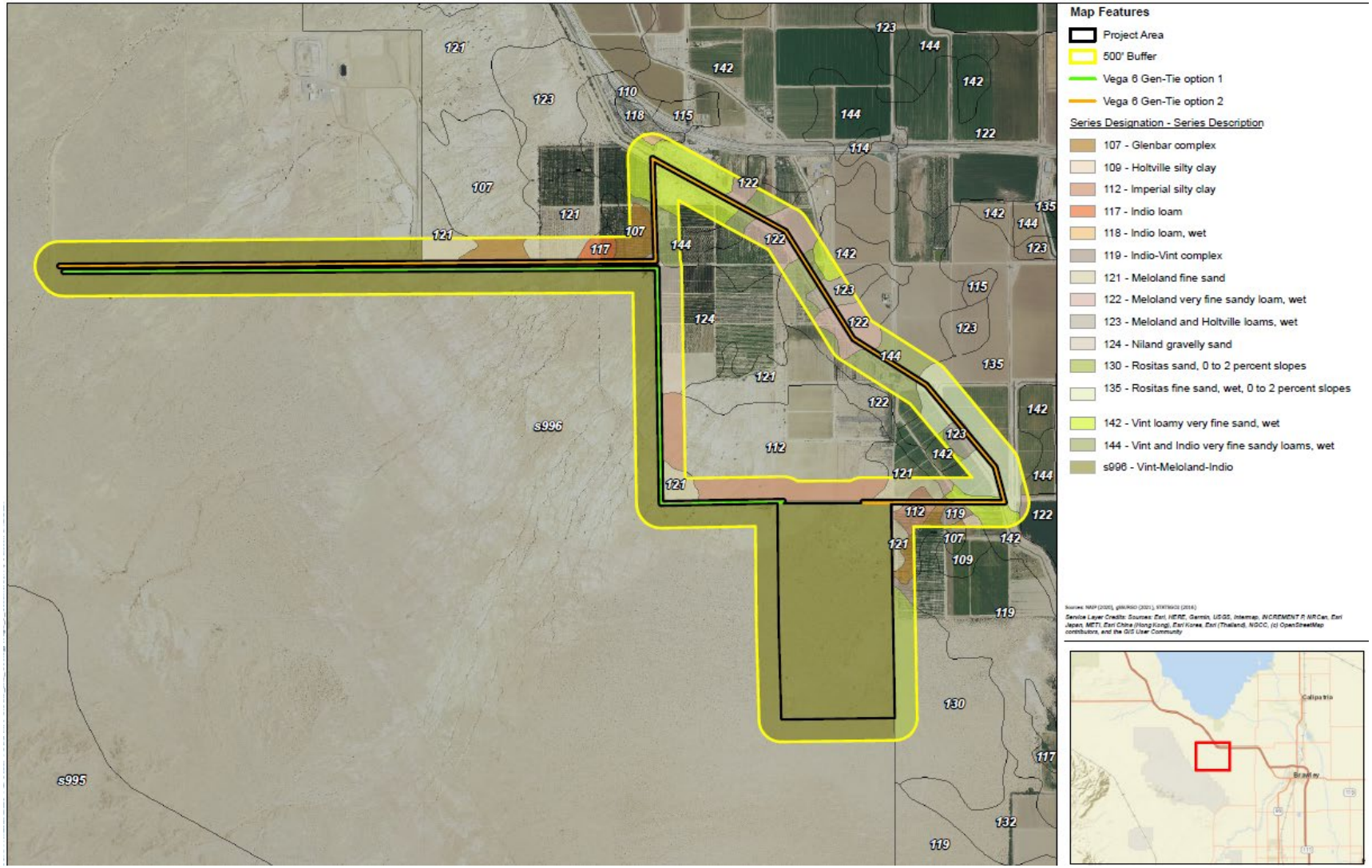
As shown in Figure 3.6-1, soil types mapped on the VEGA 6 project site include:

- 107 – Glenbar complex
- 109 – Holtville silty clay
- 112 – Imperial silty clay
- 117 – Indio loam
- 118 – Indio loam, wet
- 119 – Indio-Vint complex
- 121 – Meloland fine sand
- 122 – Meloland very fine sandy loam, wet
- 123 – Meloland and Holtville loams, wet
- 124 - Niland gravelly sand
- 130 - Rositas sand, 0 to 2 percent slopes
- 135 - Rositas fine sand, wet, 0 to 2 percent slopes
- 142 – Vint loamy very fine sand, wet
- 144 – Vint and Indio very fine sandy loams, wet
- s996 – Vint-Meloland-Indio

Ramon Substation Expansion

The surface geology of the Coachella Valley where the Ramon Substation expansion area is located consists of Quaternary alluvium. The majority of soils in the expansion area are classified as Myoma fine sand and Carsitas gravelly sand is found in approximately 15 percent of the expansion area north and east of the existing Ramon Substation, and a small area (less than 5 percent of the total acreage) of Coachella fine sand exists in the far eastern part of the expansion area (Appendix F2 of this EIR).

Figure 3.6-1. VEGA 6 Project Site Soil Types



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Faulting and Seismicity

Earthquakes are the result of an abrupt release of energy stored in the earth. This energy is generated from the forces which cause the continents to change their relative position on the earth's surface, a process called “continental drift.” The earth's outer shell is composed of a number of relatively rigid plates which move slowly over the comparatively fluid molten layer below. The boundaries between plates are where the more active geologic processes take place. Earthquakes are an incidental product of these processes.

VEGA 6

The VEGA 6 project site is located in the seismically active Imperial Valley of southern California with numerous mapped faults traversing the region including the San Andreas, San Jacinto, and Elsinore Fault Zones in southern California. The Imperial fault represents a transition from the more continuous San Andreas fault to a more nearly echelon pattern characteristic of the faults under the Gulf of California. The criterion for fault classification adopted by the California Geological Survey defines Earthquake Fault Zones along Holocene-active or pre-Holocene faults. Earthquake Fault Zones are regulatory zones that address the hazard of surface fault rupture. A Holocene-active fault is one that has ruptured during Holocene time (within the last 11,700 years). A pre-Holocene fault is a fault that has not ruptured in the last 11,700 years. Pre-Holocene faults may still be capable of surface rupture in the future but are not regulated by the Alquist-Priolo Act. Figure 3.6-2 shows the VEGA 6 project site in relation to local faults.

Based on the review of current Earthquake Fault Zone maps, the VEGA 6 project site does not lie within an Alquist-Priolo Earthquake Fault Zone. The nearest zoned fault to the VEGA 6 project site is the Superstition Hills fault located approximately 4.5 miles southwest of the project site (Appendix G of this EIR).

Ramon Substation Expansion

The Ramon Substation expansion area is located in the Western Coachella Valley which is traversed by several active and potentially active fault zones, including the San Andreas Fault. Based on the review of current Earthquake Fault Zone maps, the Ramon Substation expansion area is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 2023). The nearest zoned fault to the expansion area is the San Andreas Fault, approximately 1.3 miles north of the Ramon Substation expansion area.

Seismic Ground Shaking

Ground shaking is the byproduct of an earthquake and is the energy created as rocks break and slip along a fault during an earthquake. The amount of ground shaking that an area may be subject to during an earthquake is related to the proximity of the area to the fault, the depth of the hypocenter (focal depth), location of the epicenter and the size (magnitude) of the earthquake. Soil type also plays a role in the intensity of shaking. Bedrock or other dense or consolidated materials are less prone to intense ground shaking than soils formed from alluvial deposition.

VEGA 6

As the VEGA 6 project site is located in the seismically active southern California region, the primary seismic hazard at the project site is the potential for strong ground shaking during earthquakes along

the San Andreas, Elmore Ranch, and Imperial faults. The VEGA 6 project site is considered likely to be subjected to moderate to strong ground motion from earthquakes in the region. Ground motions are dependent primarily on the earthquake magnitude and distance to the rupture zone (Appendix G of this EIR).

Ramon Substation Expansion

As previously mentioned, the Ramon Substation expansion area is located within a seismically active region and located approximately 1.3 miles north of the San Andreas Fault. According to the Western Coachella Valley Area Plan (WCVAP), the Western Coachella Valley has experienced several earthquakes of moderate magnitude accompanied by seismic groundshaking since records have been kept (County of Riverside 2021). The Ramon Substation expansion area is considered likely to be subject to moderate to strong seismic groundshaking due to its location in a seismically active region.

Groundwater Conditions

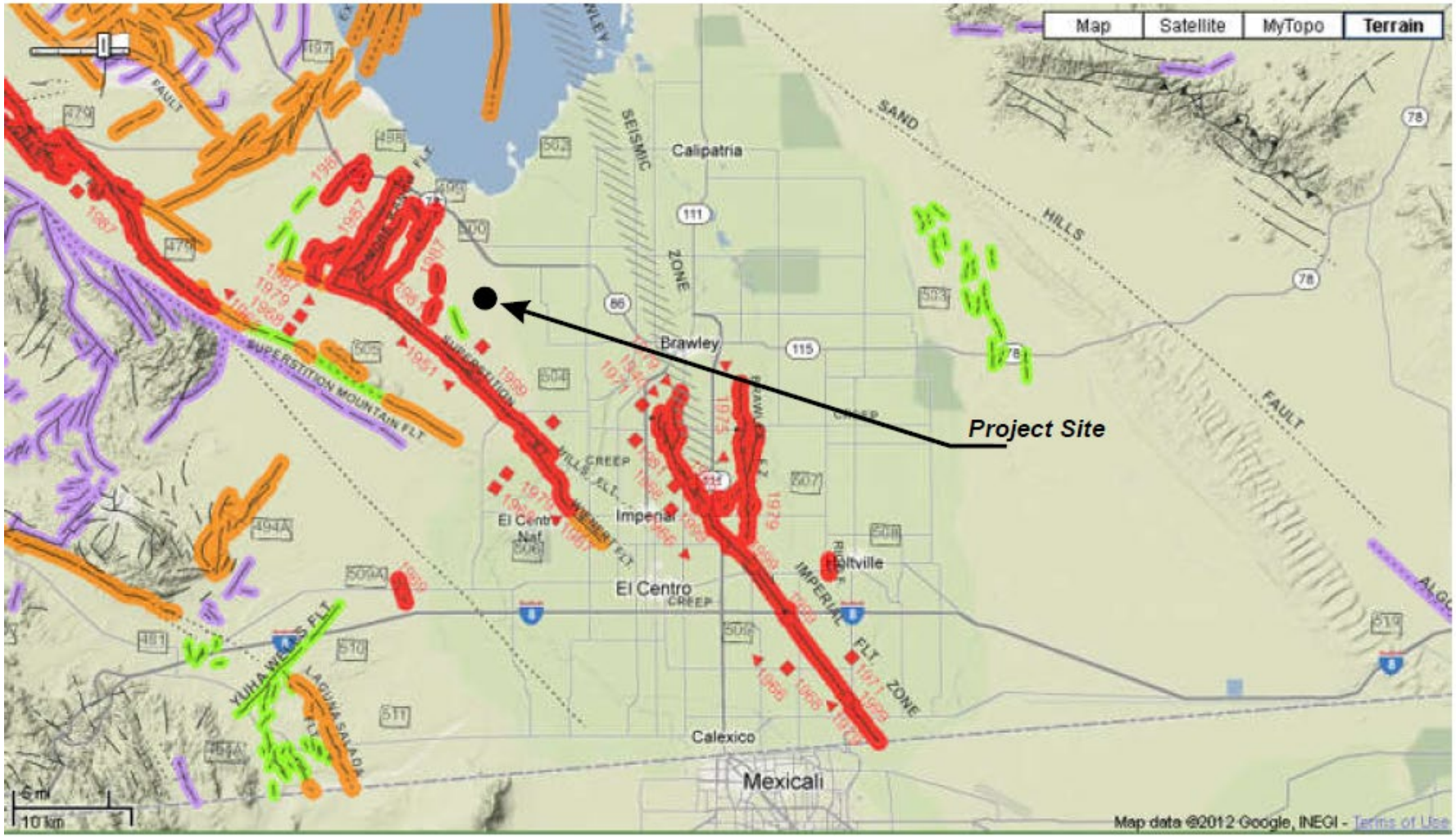
VEGA 6

During subsurface exploration of the solar energy facility site, groundwater was encountered at approximately 48 feet below the existing grade at the northwestern corner of the solar energy facility site (Appendix G of this EIR).

Ramon Substation Expansion

The Ramon Substation expansion area does not contain any groundwater wells. The nearest groundwater well (KW_013) is located approximately 1.2 miles west of the Ramon Substation expansion area. Groundwater at this well was encountered approximately 518 feet below ground surface (bgs) (DWR 2023).

Figure 3.6-2. Regional VEGA 6 Fault Map



Source: California Geological Survey 2010 Fault Activity Map of California
http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html#

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Surface Rupture

Surface rupture occurs when movement along a fault, results in actual cracking or breaking of the ground along a fault during an earthquake; however, it is important to note that not all earthquakes result in surface rupture. Surface rupture almost always follows preexisting fault traces, which are zones of weakness. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Fault creep is the slow rupture of the earth's crust. Sudden displacements are more damaging to structures because they are accompanied by shaking.

VEGA 6

As previously mentioned, the nearest zoned fault to the project site is the Superstition Hills fault located approximately 4.5 miles southwest of the project site. Based on this distance, the potential for surface fault rupture to occur on the project site is considered low.

Ramon Substation Expansion

As previously mentioned, the Ramon Substation expansion area is located approximately 1.3 miles north of the San Andreas Fault. Based on this distance, the potential for surface fault rupture to occur on the expansion area is considered low.

Liquefaction

Liquefaction occurs when granular soil below the water table is subjected to vibratory motions, such as produced by earthquakes. With strong ground shaking, an increase in pore water pressure develops as the soil tends to reduce in volume. If the increase in pore water pressure is sufficient to reduce the vertical effective stress (suspending the soil particles in water), the soil strength decreases and the soil behaves as a liquid (similar to quicksand). Liquefaction can produce excessive settlement, ground rupture, lateral spreading, or failure of shallow bearing foundations. Four conditions are generally required for liquefaction to occur (Appendix G of this EIR):

1. The soil must be saturated (relatively shallow groundwater);
2. The soil must be loosely packed (low to medium relative density);
3. The soil mut be relatively cohesionless (not clayey); and
4. Ground shaking of sufficient intensity must occur to function as a trigger mechanism.

VEGA 6

The granular soil encountered at the points of exploration at the VEGA 6 project site is not considered to be susceptible to liquefaction due to the high density of the sands and groundwater being encountered deeper than 40 feet. Therefore, due to the high density of the subsurface sandy soils and since groundwater is deeper than 40 feet, liquefaction is unlikely to be a potential hazard at the VEGA 6 site (Appendix G of this EIR).

Ramon Substation Expansion

According to the County of Riverside’s GIS Mapping Portal (Map My County), the Ramon Substation expansion area is mapped in an area of moderate susceptibility to liquefaction (RCIT 2023).

Landslides

Landslides are the descent of rock or debris caused by natural factors, such as the pull of gravity, fractured or weak bedrock, heavy rainfall, erosion, and earthquakes.

VEGA 6

The hazard of landslides is unlikely on the VEGA 6 project site due to the regional planar topography. No ancient landslides are shown on geologic maps, aerial photographs and topographic maps of the region and no indications of landslides were observed on the site during the geotechnical site investigation (Appendix G of this EIR). Additionally, according to the County of Imperial General Plan, Seismic and Public Safety Element (County of Imperial 1997), the VEGA 6 project site is not located within an area with the potential for landslides.

Ramon Substation Expansion

According to the WCVAP, the Western Coachella Valley experiences secondary seismic hazards that result from the interaction of groundshaking with existing soil and bedrock conditions which includes landslides. According to Figure 16, Slope Instability, in the WCVAP, the Ramon Substation expansion area is not located in an area mapped with potential for seismically induced landslides and rockfalls (County of Riverside 2021).

Lateral Spreading

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat lying alluvial material toward an open or “free” face such as an open body of water, channel, or excavation. This movement is generally due to failure along a weak plane and may often be associated with liquefaction.

VEGA 6

Because the VEGA 6 project site is unlikely to experience landslides and is not located within an area susceptible to liquefaction, lateral spreading is also considered to be unlikely to be a potential hazard at the site (Appendix G of this EIR).

Ramon Substation Expansion

The Ramon Substation expansion area is relatively flat, therefore there is a low potential for lateral spreading to occur on-site.

Land Subsidence

Land subsidence is the sinking of the ground surface caused by the compression of earth materials or the loss of subsurface soil because of underground mining, tunneling, or erosion. The major causes of subsidence include fluid withdrawal from the ground, decomposing organics, underground mining or tunneling, and placing large fills over compressible earth materials. The effective stress on underlying soils is increased resulting in consolidation and settlement. Subsidence may also be caused by tectonic processes.

VEGA 6

Based on the site conditions and gentle to relatively flat topography across the majority of the VEGA 6 project site, ground subsidence is considered unlikely to occur (Appendix G of this EIR).

Ramon Substation Expansion

According to the County of Riverside's GIS Mapping Portal (Map My County), the Ramon Substation expansion area is located in an area susceptible to land subsidence (RCIT 2023).

Expansive Soils

Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures.

VEGA 6

According to the Geotechnical Report prepared for the VEGA 6 project, heavy clays, which are highly expansive, exist in the northern ⅓ of the solar energy facility site. The native surface clays on the solar energy facility site likely exhibit high swell potential (Expansion Index, EI = 91 to 130) when correlated to Plasticity Index tests performed on the native soils (Appendix G of this EIR).

The clay can become expansive when wetted and can shrink with moisture loss (drying). Large shrinkage cracks and blocky fracturing of the clays occur with long periods of drying. Causes for soil saturation include standing storm water, broken utility lines, or capillary rise in moisture upon sealing the ground surface to evaporation. Moisture losses can occur with lack of landscape watering, close proximity of structures to downslopes and root system moisture extraction from deep rooted shrubs and trees placed near the foundations (Appendix G of this EIR).

Ramon Substation Expansion

The Ramon Substation expansion area consists of Myoma and Carsitas soils, neither of which are considered expansive soils (USDA 2023). Both soils are characterized as somewhat excessively drained, with very slow runoff, and rapid permeability, making them unable to undergo significant volume changes (shrink or swell) (USDA 2015a and 2015b). Therefore, the potential for soil expansion within the Ramon Substation expansion area is considered low.

Collapsible Soils

Collapsible soil generally consists of dry, loose, low-density material that have the potential collapse and compact (decrease in volume) when subjected to the addition of water or excessive loading. Soils found to be most susceptible to collapse include loess (fine grained wind-blown soils), young alluvium fan deposits in semi-arid to arid climates, debris flow deposits and residual soil deposits.

VEGA 6

Due to the cohesive nature of the subsurface soils and the natural density (dense to very dense) of the granular soils, the potential for hydro-collapse of the subsurface soils at the VEGA 6 project site is considered very low (Appendix G of this EIR).

Ramon Substation Expansion

It is unknown whether collapsible soils are present on the Ramon Substation expansion area. Corrosive Soils

VEGA 6

Corrosive soils can damage underground utilities including pipelines and cables, or weaken roadway structures. According to the Site Corrosivity Assessment Report prepared for the VEGA 6 project (included in Appendix G of this EIR), the solar energy facility site has varying levels of soil corrosivity. The soil in the northern and southern end of the solar energy facility site is considered moderately corrosive and the soil on the eastern side of the solar energy facility site is considered highly corrosive. As such, screening tests concluded that the soil is considered aggressive enough to initiate and support the corrosion of buried metallic utilities (Appendix G of this EIR).

Ramon Substation Expansion

The soils underlying the Ramon Substation expansion area do not include any clay or silty clay soils, which are known to be corrosive. Myoma soils and Carsitas soils located on-site have low corrosivity potential.

Paleontological Resources

Paleontological resources (fossils) are the remains of prehistoric plant and animal life. Fossil remains, such as bones teeth, shell, and wood, are found in geologic deposits (rock formations) within which they were originally buried. Many paleontological fossil sites are recorded in Imperial County and have been discovered during construction activities. Paleontological resources are typically impacted when earthwork activities, such as mass excavation cut into geological deposits (formations) with buried fossils.

VEGA 6

Late Pleistocene to Holocene Lake Cahuilla deposits exist within the project area. Therefore, there is a possibility that exposed and/or underlying deposits may be located within the project area. Lake Cahuilla Beds have yielded well-preserved subfossil remains of freshwater clams and snails and sparse remains of freshwater fish. The paleontological resources of the Lake Cahuilla Beds are considered significant because of the paleoclimatic and palaeoecological information they can provide, and these deposits are therefore assigned a high paleontological potential. Therefore, the site does have paleontological sensitivity, with high potential for paleontological resource discovery.

Ramon Substation Expansion

According to the County's GIS Mapping Portal (Map My County), the Ramon Substation expansion area is located in an area with low sensitivity for paleontological resources (RCIT 2023).

3.6.2 Regulatory Setting

This section identifies and summarizes laws, policies, and regulations that are applicable to the project.

Federal

Earthquake Hazards Reduction Act

The Earthquake Hazards Reduction Act was enacted in 1977 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the Act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by NEHRP, which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results. The NEHRP designates the Federal Emergency Management Agency as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities. Programs under NEHRP help inform and guide planning and building code requirements such as emergency evacuation responsibilities and seismic code standards such as those to which the project would be required to adhere.

State

Alquist-Priolo Special Studies Earthquake Hazards Act

The APEHA was passed into law following the destructive February 9, 1971 San Fernando earthquake. The APEHA provides a mechanism for reducing losses from surface fault rupture on a statewide basis. The intent of the APEHA is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. The state geologist (Chief of the California Division of Mines and Geology) is required to identify "earthquake fault zones" along known active faults in California. Counties and cities must withhold development permits for human occupancy projects within these zones unless geologic studies demonstrate that there would be no issues associated with the development of projects. The project site is not located within a currently mapped APEHA zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (California PRC Sections 2690–2699.6) directs the DOC's CGS to map areas of earthquake hazard, including areas of liquefaction and seismically induced landslides. The act established a mapping program for areas that have the potential for liquefaction, landslides, strong ground shaking, or other earthquake and geologic hazards. The Seismic Hazards Mapping Act requires the State Geologist to establish regulatory zones (Zones of Required Investigation) and to issue appropriate maps (Seismic Hazard Zone maps). These maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling construction and development (DOC 2019).

As required by the act, the CGS has issued official Seismic Hazard Zone Maps that indicate zones of required investigation for earthquake faulting, landslides, and liquefaction. Prior to approving specific types of development, local permit authorities require a project's applicant to submit a geotechnical investigation report for review and approval by the jurisdiction.

California Building Code

The California Building Standards Commission is responsible for coordinating, managing, adopting, and approving building codes in California. CCR Title 24 is reserved for state regulations that govern the design and construction of buildings, associated facilities, and equipment, known as building standards. The California Building Code (CBC) is based on the Federal Uniform Building Code used widely throughout the country (generally adopted on a state-by-state or district-by-district basis). The California Health and Safety Code (HSC) Section and 18980 HSC Section 18902 give CCR Title 24 the name of California Building Standards Code. The updates to the 2019 California Building Standards Code were published on January 1, 2021, with an effective date of July 1, 2021.

Local

County of Imperial Land Use Ordinance

Title 9 Division 15 (Geological Hazards) of the County Land Use Ordinance has established procedures and standards for development within earthquake fault zones. Per County regulations, construction of buildings intended for human occupancy are prohibited across the trace of an active fault. An exception exists when such buildings located near the fault or within a designated Special Studies Zone are demonstrated through a geotechnical analysis and report not to expose a person to undue hazard created by the construction.

County of Imperial General Plan

The County of Imperial General Plan, Seismic and Public Safety Element identifies potential natural and human-induced hazards and provides policy to avoid or minimize the risk associated with hazards. The Seismic and Public Safety Element identifies 'lifelines and critical facilities' whose disruption could endanger the public safety. Lifelines are defined as networks of services that extend over a wide area and are vital to the public welfare, and can be classified into four categories: energy, water, transportation, and communications. The IID has a formal Disaster Readiness Standard Operating Procedure for the Water Department, Power Department, and the entire District staff for response to earthquakes and other emergencies.

Table 3.6-1 analyzes the consistency of the VEGA 6 project with specific policies contained in the County of Imperial General Plan associated with geology, soils, and seismicity. While this EIR analyzes the VEGA 6 project's consistency with the General Plan pursuant to CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors ultimately determines consistency with the General Plan.

Table 3.6-1. Project Consistency with Applicable General Plan Policies

Applicable Policies	Consistency Determination	Analysis
Seismic and Public Safety Element		
Goal 1. Include public health and safety considerations in land use planning.	Consistent	Division 15 of the County Land Use Ordinance has established procedures and standards for development within earthquake fault zones. Per County regulations, construction of buildings intended for human occupancy which are
Objective 1.1. Ensure that data on geological hazards is incorporated into the land use review process, and future development process.		

Applicable Policies	Consistency Determination	Analysis
Objective 1.3. Regulate development adjacent to or near all mineral deposits and geothermal operations.		located across the trace of an active fault are prohibited. An exception exists when such buildings located near the fault or within a designated Special Studies Zone are demonstrated through a geotechnical analysis and report not to expose a person to undue hazard created by the construction. Since the VEGA 6 project site is located in a seismically active area, the project is required to be designed in accordance with the CBC for near source factors derived from a design basis earthquake based on a peak ground acceleration of 0.48 gravity. It should be noted that, the VEGA 6 project would be remotely operated and would not require any habitable structures on site. In considering these factors in conjunction with mitigation requirements outlined in the impact analysis, the risks associated with seismic hazards would be minimized. A preliminary geotechnical study has been prepared for the proposed VEGA 6 project. The preliminary geotechnical study has been referenced in this environmental document. Additionally, a design-level geotechnical investigation will be conducted to evaluate the potential for site specific hazards associated with seismic activity.
Objective 1.4. Require, where possessing the authority, that avoidable seismic risks be avoided; and that measures, commensurate with risks, be taken to reduce injury, loss of life, destruction of property, and disruption of service.		
Objective 1.7. Require developers to provide information related to geologic and seismic hazards when siting a proposed project.		
Goal 2: Minimize potential hazards to public health, safety, and welfare and prevent the loss of life and damage to health and property resulting from both natural and human-related phenomena.		
Objective 2.2. Reduce risk and damage due to seismic hazards by appropriate regulation.		
Objective 2.5 Minimize injury, loss of life, and damage to property by implementing all state codes where applicable.		
Objective 2.8 Prevent and reduce death, injuries, property damage, and economic and social dislocation resulting from natural hazards including flooding, land subsidence, earthquakes, other geologic phenomena, levee or dam failure, urban and wildland fires and building collapse by appropriate planning and emergency measures.		

Source: County of Imperial 1997

County of Riverside General Plan

The General Plan includes several policies related to seismic hazards, code conformance, and development regulations that are enforced to minimize the potential impacts of seismic and geologic hazards on the County's citizens, property, and economy (County of Riverside 2021). The General Plan policies applicable to the proposed Ramon Substation expansion area are listed below.

SAFETY ELEMENT

- **S 2.1** Minimize fault rupture hazards through enforcement of Alquist-Priolo Earthquake Fault Zoning Act provisions and the following:

  a) Require geologic studies or analyses for critical structures, and lifelines, high-occupancy, schools, and high-risk structures, within 0.5 mile of all Quaternary to historic faults shown

on the Earthquake Fault Studies Zones map. The County geologist shall review and make recommendations based on the results to reduce the potential risk.

b) Request geologic trenching studies within all designated Earthquake Fault Studies Zones, unless adequate evidence, as determined and accepted by the County Engineering Geologist, is presented. The County of Riverside may require geologic trenching of non-zoned faults for especially critical or vulnerable structures or lifelines.

c) Require that infrastructure systems, such as energy, communications, and transportation infrastructure be designed to resist, without failure to the extent feasible, their crossing of a fault, should fault rupture occur.

d) Support efforts by the California Department of Conservation, California Geological Survey to develop geologic and engineering solutions in areas of ground deformation due to faulting and seismic activity in those areas where a through-going fault cannot be reliably located.

e) Encourage and support efforts by the geologic research community to define better the locations and risks of Riverside County faults. Such efforts could include data sharing and database development with regional entities, other local governments, private organizations, utility agencies or companies, and local universities.

- **S 2.2** Request geological and geotechnical investigations in areas with potential for earthquake-induced liquefaction, landslides, or settlement, for any building proposed for human occupancy and any structure whose damage would cause harm, except for accessory structures/buildings, as determined by County officials. Any studies or surveys should be prepared/completed by a state-licensed professional.
- **S 2.3** Require that a state-licensed professional investigate the potential for liquefaction in areas designated as underlain by “Susceptible Sediments” and “Shallow Ground Water” for all general construction projects, except for accessory buildings.
- **S 2.4** Request that engineered slopes be designed to resist seismically induced failure as appropriate. For lower-risk projects, this may include requiring slope design to be based on pseudo-static stability analyses using soil engineering parameters that are established on a site-specific basis. For higher risk projects, appropriate standards may include requiring the stability analyses to factor in the intensity of expected ground-shaking, using a Newmark-type deformation analysis or other analyses as appropriate.
- **S 2.6** Request structures in liquefaction and slope stability hazards to mitigate the potential of seismically induced differential settlement through appropriate techniques as determined by geotechnical studies, including a 100-percent maximum variation of fill depths as warranted.
- **S 2.8** Request the following in landslide potential hazard management zones, or when deemed necessary for compliance with CEQA, prior to the issuance of development permits or approval of project designs:

  a) Preliminary geotechnical and geologic investigations, including certification regarding the stability of the site against adverse effects of earthquake and subsidence.

  b) Evaluations of site stability, including any possible impact on adjacent properties.

c) Consultant reports, investigations, and design recommendations required for grading permits, building permits, and subdivision applications, shall be prepared by state-licensed professionals.

- **S 2.9** Require new development in areas prone to geologic hazards (e.g., landslides, steep topography, slope instability) to be adequately mitigated against these hazards, as feasible. Any development in hillside areas should prepare drainage plans to direct runoff and drainage away from potentially unstable slopes. New developments should incorporate hillside design techniques and features to mitigate and support slope stability.
- **S 2.15** Request geotechnical studies within documented subsidence zones, as well as zones that may be susceptible to subsidence, prior to the issuance of development permits. Within the documented subsidence zones of the Coachella, San Jacinto, and Elsinore Valleys, the studies should address the potential for reactivation of these zones, consider the potential impact on the project, and provide adequate and acceptable mitigation measures.

County of Riverside Municipal Code (RMC)

The following are applicable to the proposed Ramon Substation expansion area:

- Title 15, Buildings and Construction, contains provisions related to building regulations, and incorporates the CBC by reference. Chapter 15.16, Earthquake Fault Area Construction Regulations was adopted pursuant to the requirements of the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Section 2621, et seq.) and the adopted policies and criteria of the State Mining and Geology Board.

Riverside County Ordinance No. 547 – Implementation of the Alquist-Priolo Earthquake Fault Zoning Act

This ordinance establishes the policies and procedures used by the County of Riverside to implement the A-P Act. Among other things, it requires all projects proposed within an “earthquake fault zone,” as shown on the maps prepared by the State Geologist to comply with the provisions of the A-P Act. It establishes regulations for construction, including for grading, slopes and compaction, erosion control, retaining wall design, and earthquake fault zone setbacks.

Riverside County Ordinance No. 457 – Riverside County Building and Fire Codes

Every three years, the County’s Building and Fire Codes are adapted from the CBSC (CCR Title 24), which includes both building and fire codes. These codes establish site-specific investigation requirements, construction standards, and inspection procedures to ensure that development authorized by the County does not pose a threat to the health, safety, or welfare of the public. The CBSC contains minimum baseline standards to guard against unsafe development. County of Riverside Ordinance No. 457 also adopts, in some cases with modification to a stricter standard, a number of California State’s Title 24 codes (fire, building, plumbing, electrical, etc.). The Riverside County Department of Building and Safety provides technical expertise in reviewing and enforcing these codes.

3.6.3 Impacts and Mitigation Measures

This section presents the significance criteria used for considering project impacts related to geologic and soil conditions, the methodology employed for the evaluation, an impact evaluation, and mitigation requirements, if necessary.

Thresholds of Significance

Based on CEQA Guidelines Appendix G, project impacts related to geology and soils are considered significant if any of the following occur:

- Directly or indirectly cause potential substantive adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent AP 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)
    - Strong seismic ground shaking
    - Seismic related ground failure, including liquefaction
    - Landslides
- Result in substantial soil erosion or the loss of topsoil
- 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
- Be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

Methodology

The analysis evaluates the potential for the project, as described in Chapter 2, Project Description, to interact with local geologic and soil conditions, as well as paleontological resources on the VEGA 6 project site. A Geotechnical Report prepared by Landmark Consultants, Inc. (Appendix G of this EIR). The information obtained from the geotechnical report was reviewed and summarized to present the existing geologic and soil conditions on the VEGA 6 project site. This analysis considers whether these conditions would result in an exceedance of one or more of the applied significance criteria as identified above.

Impact Analysis

Impact 3.6-1 Would the project directly or indirectly cause potential substantive adverse effects, including risk of loss, injury, or death involving:

Rupture of a known earthquake fault, as delineated on the most recent AP 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)?

VEGA 6

As previously discussed above, the VEGA 6 project site is located in a seismically active region with several mapped faults of the San Andreas Fault System in the project site vicinity. As shown in Figure 3.6-2, the VEGA 6 project site is not located on an active fault. Furthermore, no portion of the VEGA 6 project site is within or near a designated APEHA zone, and therefore, the potential for ground rupture to occur within the VEGA 6 project site is considered unlikely. As such, the probability of surface fault rupture within the VEGA 6 project site during construction and operation is considered low and the project would not increase or exacerbate existing hazards related to fault rupture. The proposed VEGA 6 project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving rupture of a major fault as delineated on the most recent Alquist-Priolo Fault Zoning map. This impact would be less than significant.

Ramon Substation Expansion

As previously described, based on the review of current Earthquake Fault Zone maps, the Ramon Substation expansion area is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 2023). The Ramon Substation expansion area is approximately 1.3 miles south of the San Andreas Fault zone. Because the expansion area is not within 0.5-mile of the fault zone, the potential for ground rupture to occur within the expansion area is considered unlikely. As such, the probability of surface fault rupture within the Ramon Substation expansion area during construction and operation is considered low and the proposed expansion would not increase or exacerbate existing hazards related to fault rupture. Impacts would be less than significant.

Mitigation Measure(s)

VEGA 6

No mitigation measures are required.

Ramon Substation Expansion

No mitigation measures are required.

Impact 3.6-2 Would the project directly or indirectly cause potential substantive adverse effects, including the risk of loss, injury, or death involving:

Strong seismic ground shaking?

VEGA 6

As previously mentioned, the closest mapped fault to the project site is the Superstition Hills fault located approximately 4.5 miles southwest of the VEGA 6 project site. In the event of an earthquake along this fault or another regional fault, seismic hazards related to ground motion could occur in susceptible areas within the project site. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the moment magnitude, and the duration of shaking.

Even with the integration of building standards that are designed to resist the effects of strong ground motion, ground shaking within the project site could cause some structural damage to the facility structures or, at least, cause unsecured objects to fall. During a stronger seismic event, ground shaking could result in structural damage or collapse of electrical distribution facilities. Given the potentially hazardous nature of the project facilities, the potential impact of ground motion during an earthquake is considered a significant impact, as proposed structures, such as the substation and

transmission lines could be damaged. However, the proposed VEGA 6 project would be constructed in accordance with the applicable geotechnical and seismic design standards as well as the site-specific design recommendations in the final geotechnical report per Mitigation Measure GEO-1; and upon operation, the VEGA 6 project would not result in any significant changes related to the risk of seismic hazards on the project site when compared to existing conditions, nor would project operation increase or exacerbate the potential for strong seismic ground shaking to occur. Impacts would be reduced to a level less than significant.

Ramon Substation Expansion

As previously mentioned, the Ramon Substation expansion area is located approximately 1.3 miles south of the San Andreas Fault zone. In the event of an earthquake along this fault or another nearby regional fault, seismic hazards related to ground motion could occur within the expansion area. While the potential for seismically induced ground shaking in the area during operation of the Ramon Substation is unavoidable, the proposed substation expansion would not include any occupied structures that would expose people to significant hazards due to seismic shaking. It is unlikely that the below grade and above-ground components would be damaged by moderate seismic ground shaking. In addition, the Ramon Substation expansion would be designed and constructed in compliance with the CBC, Riverside County Building Code, and other state and local regulations pertaining to earthquake hazards reduction. Additionally, construction and operation of the Ramon Substation expansion would not increase or exacerbate the potential for strong seismic ground shaking to occur. Therefore, the Ramon Substation expansion would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic groundshaking. Impacts are considered less than significant.

Mitigation Measure(s)

VEGA 6

GEO-1 **Prepare Geotechnical Report(s) as Part of Final Engineering for the Project and Implement Required Measures.** Facility design for all project components shall comply with the site-specific design recommendations as provided by a licensed geotechnical or civil engineer to be retained by the project applicant. The final geotechnical and/or civil engineering report shall address and make recommendations on the following:

- Site preparation
- Soil bearing capacity
- Appropriate sources and types of fill
- Potential need for soil amendments
- Structural foundations
- Grading practices
- Soil corrosion of concrete and steel
- Erosion/winterization
- Seismic ground shaking

- Liquefaction
- Expansive/unstable soils

In addition to the recommendations for the conditions listed above, the geotechnical investigation shall include subsurface testing of soil and groundwater conditions, and shall determine appropriate foundation designs that are consistent with the version of the CBC that is applicable at the time building and grading permits are applied for. All recommendations contained in the final geotechnical engineering report shall be implemented by the project applicant. The final geotechnical and/or civil engineering report shall be submitted to Imperial County Public Works Department, Engineering Division for review and approval prior to issuance of building permits.

Ramon Substation Expansion

No mitigation measures are required.

Significance after Mitigation

VEGA 6

With implementation of Mitigation Measure GEO-1, potential impacts associated with strong seismic ground shaking would be reduced to a level less than significant with the implementation of recommendations made by a licensed geotechnical engineer in compliance with the CBC prepared as part of a formal geotechnical investigation.

Impact 3.6-3 Would the project directly or indirectly cause potential substantive adverse effects, including the risk of loss, injury, or death involving:

Seismic-related ground failure, including liquefaction?

VEGA 6

Based on the exploratory borings from the Geotechnical Report prepared for the VEGA 6 project, the potential for liquefaction at the solar energy facility site is considered to be low due to the high density of the sands at the project site and groundwater being encountered deeper than 40 feet below ground surface (Appendix G of this EIR). Therefore, the potential impact associated with liquefaction is considered less than significant.

Ramon Substation Expansion

According to the County of Riverside's GIS Mapping Portal (Map My County), the Ramon Substation expansion area is located in an area that has moderate susceptibility to liquefaction (RCIT 2023). However, the proposed Ramon Substation expansion would be designed to resist seismic forces in accordance with the criteria contained in the CBC and the Riverside County Building Code. IID would be required to obtain building permits from the County, which would ensure that project plans and specifications comply with the CBC and County seismic design requirements. Therefore, with adherence to the CBC and County seismic design requirements, the Ramon Substation expansion would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. Impacts would be less than significant.

Mitigation Measure(s)

VEGA 6

No mitigation measures are required.

Ramon Substation Expansion

No mitigation measures are required.

Impact 3.6-4 Would the project directly or indirectly cause potential substantive adverse effects, including the risk of loss, injury, or death involving:

Landslides?

VEGA 6

The solar energy facility site slopes gently (about 1.5 to 2 percent) to the north-northeast. As stated above, the hazard of landsliding is unlikely due to the regional planar topography. Additionally, no historic landslides are shown on geologic maps, aerial photographs and topographic maps of the region and no indications of landslides were observed during site investigation according to the Geotechnical Report. Based on these factors the potential for a landslide is considered negligible (Appendix G of this EIR). Therefore, the VEGA 6 project would not directly or indirectly cause potential substantive adverse effects, including the risk of loss, injury, or death involving landslides and no impact would occur.

Ramon Substation Expansion

According to Figure 16, Slope Instability, in the WCVAP, the Ramon Substation expansion area is not mapped in area with susceptibility to seismically induced landslides and rockfalls (County of Riverside 2021). Additionally, the expansion area is relatively flat and does not contain any slopes, the Ramon Substation expansion area would not be prone to landslides. Accordingly, impacts due to landslide hazards would be less than significant.

Mitigation Measure(s)

VEGA 6

No mitigation measures are required.

Ramon Substation Expansion

No mitigation measures are required.

Impact 3.6-5 Would the project result in substantial soil erosion or the loss of topsoil?

VEGA 6

The proposed VEGA 6 project would require site grading and construction that would expose the project site to erosive forces by water for extended periods of time. Construction activities would involve grading of the VEGA 6 project site to establish access roads and pads for electrical equipment, trenching for underground electrical collection lines, and the installation of solar equipment and security fencing which could result in increased erosion and sedimentation to surface waters. Construction could also produce sediment-laden stormwater runoff (nonpoint source pollution), a

major contributor to the degradation of water quality. If precautions are not taken to contain contaminants, construction-related erosion impacts are considered a significant impact.

Since the proposed VEGA 6 project would disturb at least 1 acre of land during construction, it would be required to obtain a Construction General Permit from the California State Water Resources Control Board (State Water Board) consistent with Imperial County's General Permit (No. CA000004) and to comply with its conditions and requirements, which are designed to minimize potential erosion issues. Further, the project would be consistent with Section 93101.00 of the Imperial County Municipal Code, which establishes the Stormwater Control Ordinance and ensures compliance with the County's NPDES permit (County of Imperial 2015a). Compliance with the NPDES permit would require the project to implement applicable BMPs to control runoff and include erosion and sediment control practices.

Furthermore, as provided in Mitigation Measure GEO-1, during final engineering for the VEGA 6 project, a design-level geotechnical study would identify appropriate measures for the project related to soil erosion. The proposed project would also implement Mitigation Measure HYD-1 provided in Section 3.9, Hydrology and Water Quality, potential impacts from erosion during construction activities would be reduced to a level less than significant with the preparation of a SWPPP for sediment and erosion control and implementation of BMPs to reduce erosion from the construction site.

The VEGA 6 project is not expected to result in substantial soil erosion or the loss of topsoil over the long term. The project applicant would be required to implement on-site erosion control measures in accordance with County standards, which require the preparation, review, and approval of a grading plan by the County Engineer. Therefore, with implementation of Mitigation Measure GEO-1 and Mitigation Measure HYD-1 identified in Section 3.9 Hydrology/Water Quality as well as adherence to existing requirements, impacts from construction-related erosion would be reduced to a level less than significant. Impacts related to soil erosion or loss of topsoil are limited to construction impacts. No respective operational impacts would occur.

Ramon Substation Expansion

Soil erosion could result during construction of the proposed Ramon Substation expansion area in association with grading and earthmoving activities. The expansion area would be disturbed by construction activities such as grading and clearing as a part of site preparation. To the extent feasible, site preparation would be planned and designed to minimize the amount of earth movement. During construction, erosion would be controlled in accordance with County standards which include preparation, review and approval of a grading plan by the County Engineer; implementation of a Dust Control Plan; and compliance with the NPDES General Construction Permit and project-specific SWPPP, as outlined in Mitigation Measure RS-HYD-1. Implementation of Mitigation Measure RS-HYD-1 would reduce impacts to a level less than significant.

Mitigation Measure(s)

VEGA 6

No additional mitigation measures beyond Mitigation Measure GEO-1 and Mitigation Measure HYD-1 are required.

Ramon Substation Expansion

No additional mitigation measures beyond Mitigation Measure RS-HYD-1.

Significance after Mitigation

VEGA 6

With implementation of Mitigation Measure GEO-1 and Mitigation Measure HYD-1 in Section 3.9 Hydrology/Water Quality, potential impacts from erosion during construction activities would be reduced to a level less than significant with the preparation of a SWPPP and implementation of BMPs to reduce erosion from the construction site.

Ramon Substation Expansion

With implementation of Mitigation Measure RS-HYD-1 in Section 3.9, Hydrology/Water Quality, potential impacts from erosion during construction activities would be reduced to a level less than significant.

Impact 3.6-6 Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

VEGA 6

Based on the site conditions and relatively flat topography, landslides, lateral spreading, liquefaction, and subsidence, are considered unlikely. As previously described above, due to the high density of the sands at the VEGA 6 project site and groundwater being encountered deeper than 40 feet below ground surface, the potential for liquefaction at the VEGA 6 project site is considered to be low.

The VEGA 6 project site, including the areas proposed for off-site improvements, do not contain steep slopes or exposed hillsides. Due to the gently sloping nature of the project site, including the areas proposed for off-site improvements, the potential for landslides is low.

In regard to collapse, the cohesive nature of the subsurface soils and the natural density (dense to very dense) of the granular soils, the potential for hydro-collapse of the subsurface soils at the solar energy facility site is considered very low (Appendix G of this EIR).

The Geotechnical Report prepared for the VEGA 6 project determined that the solar energy facility site has varying levels of soil corrosivity. The soil in the northern and southern end of the solar energy facility site is considered moderately corrosive and the soil on the eastern side of the site is considered highly corrosive. As such, screening tests concluded that the soil is considered aggressive enough to initiate and support the corrosion of buried metallic utilities (Appendix G of this EIR).

Implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical report, would reduce the potential impacts associated with corrosive soils to a level less than significant.

Ramon Substation Expansion

The Ramon Substation expansion area is relatively flat and does not contain any slopes, therefore, the project site would not be prone to landslides and the potential for lateral spreading to occur on-site is low.

The Ramon Substation expansion area is located in an area that has moderate susceptibility for liquefaction (RCIT 2023). Additionally, the expansion area is located in an area susceptible to land subsidence. These potential impacts are considered significant. However, the Ramon Substation expansion would be designed to resist liquefaction and subsidence in accordance with the criteria

contained in the CBC and the Riverside County Building Code. Therefore, potential significant impacts would be reduced to a level less than significant.

Mitigation Measure(s)

VEGA 6

No additional mitigation measures beyond Mitigation Measure GEO-1 are required.

Ramon Substation Expansion

No mitigation measures are required.

Significance after Mitigation

VEGA 6

With implementation of Mitigation Measure GEO-1, potential impacts associated with corrosive soils would be reduced to a level less than significant with the implementation of recommendations made by a licensed geotechnical engineer in compliance with the CBC prepared as part of a formal geotechnical investigation.

Impact 3.6-7 Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

VEGA 6

As stated above, expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, roof drainage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures. According to the Geotechnical Report prepared for the VEGA 6 project, heavy clays, which are highly expansive, exist in the northern ⅓ of the solar energy facility site. The native surface clays on the solar energy facility site likely exhibit high swell potential. The subsurface soils at the proposed electrical substation and O&M building area are predominately hard fat clay soils which would likely exhibit high swell potential.

Therefore, unless properly mitigated, shrink-swell soils could exert additional pressure on buried structures and electrical connections producing shrinkage cracks that could allow water infiltration and compromise the integrity of backfill material. These conditions could be worsened if structural facilities are constructed directly on expansive soil materials. This potential impact would be significant as structures could be damaged by these types of soils. A site-specific geotechnical investigation would be required at the project site to determine the extent and effect of problematic soils which have been identified during preliminary laboratory screenings of near surface on-site soils. Implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical report, would reduce potential impacts associated with expansive soils to a level less than significant.

Ramon Substation Expansion

As previously described, the potential for soil expansion within the Ramon Substation expansion area is considered low. The Ramon Substation expansion would also be designed to resist soil expansion

in accordance with the criteria contained in the CBC and the Riverside County Building Code. Therefore, impacts would be less than significant.

Mitigation Measure(s)

VEGA 6

No additional mitigation measures beyond Mitigation Measure GEO-1 are required.

Ramon Substation Expansion

No mitigation measures are required.

Significance after Mitigation

VEGA 6

With implementation of Mitigation Measure GEO-1, potential impacts associated with expansive soils would be reduced to a level less than significant with the implementation of recommendations made by a licensed geotechnical engineer in compliance with the CBC prepared as part of a formal geotechnical investigation.

Impact 3.6-8 Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

VEGA 6

The proposed VEGA 6 project would not require an operations and maintenance building. The proposed solar facility would be remotely operated, controlled and monitored and with no requirement for daily on-site employees. Therefore, no septic or other wastewater disposal systems would be required for the VEGA 6 project and no impact would occur.

Ramon Substation Expansion

The Ramon Substation expansion would be primarily an unmanned substation and would not require a wastewater disposal system. Therefore, no impact would occur.

Mitigation Measure(s)

VEGA 6

No mitigation measures are required.

Ramon Substation Expansion

No mitigation measures are required.

Impact 3.6-9 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

VEGA 6

The Lake Cahuilla Beds have yielded well-preserved subfossil remains of freshwater clams and snails and sparse remains of freshwater fish. The paleontological resources of the Lake Cahuilla Beds are considered significant because of the paleoclimatic and palaeoecological information they can provide, and these deposits are therefore assigned a high paleontological potential. Therefore, the VEGA 6 project site is considered to be paleontologically sensitive with a high potential for paleontological resource discovery. As such, project construction has the potential to unearth and/or potentially destroy previously undiscovered paleontological resources. This potential impact is considered a significant impact. However, implementation of Mitigation Measure GEO-2 would reduce the potential impact on paleontological resources to a level less than significant.

Ramon Substation Expansion

According to the County's GIS Mapping Portal (Map My County) for paleontological sensitivity, the Ramon Substation expansion area is located in an area with low sensitivity for paleontological resources (RCIT 2023). Construction of the Ramon Substation expansion would have a low potential to unearth or potentially destroy previously undiscovered paleontological resources. As such, impacts would be less than significant.

Mitigation Measure(s)

VEGA 6

GEO-2 **Paleontological Resources.** In the event that unanticipated paleontological resources or unique geologic resources are encountered during ground-disturbing activities, work must cease within 50 feet of the discovery and a paleontologist shall be hired to assess the scientific significance of the find. The consulting paleontologist shall have knowledge of local paleontology and the minimum levels of experience and expertise as defined by the Society of Vertebrate Paleontology's Standard Procedures (2010) for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. If any paleontological resources or unique geologic features are found within the project site, the consulting paleontologist shall prepare a paleontological Treatment and Monitoring Plan to include the methods that will be used to protect paleontological resources that may exist within the project site, as well as procedures for monitoring, fossil preparation and identification, curation of specimens into an accredited repository, and preparation of a report at the conclusion of the monitoring program.

Ramon Substation Expansion

No mitigation measures are required.

Significance after Mitigation

VEGA 6

Implementation of Mitigation Measure GEO-2 would reduce the potential impact on paleontological resources to a level less than significant. In the event that unanticipated paleontological resources or unique geologic resources are encountered during ground-disturbing activities, work must cease within 50 feet of the discovery and a paleontologist shall be hired to assess the scientific significance of the find.

3.6.4 Decommissioning/Restoration and Residual Impacts

Decommissioning/Restoration

If at the end of the PPA term, no contract extension is available for a power purchaser, no other buyer of the energy emerges, or there is no further funding of the project, the project will be decommissioned and dismantled. Decommissioning and restoration of the project site at the end of its use as a solar facility would involve the removal of structures and restoration to prior (pre-solar project) conditions. No geologic or soil impacts associated with the restoration activities would be anticipated, and, therefore, no impact is identified.

No impact is anticipated from restoration activities as the ground disturbance and associated impacts on paleontological resources will have occurred during the construction phase of the project.

Residual

With implementation of Mitigation Measure GEO-1, impacts related to strong seismic ground shaking, expansive soils, and corrosive soils would be reduced to a level less than significant. With implementation of Mitigation Measure GEO-1 and Mitigation Measure HYD-1 in Section 3.9 Hydrology/Water Quality, potential impacts from erosion during construction activities would be reduced to a level less than significant.

Implementation of Mitigation Measure GEO-2 would reduce the potential impact on paleontological resources to a level less than significant. The project would not result in residual significant and unmitigable impacts related to geology and soil resources.