2 Project Description

Chapter 2 provides a description of the VEGA SES 6 Solar and Battery Storage Project (VEGA 6). This chapter also defines the goals and objectives of the proposed VEGA 6 project, provides details regarding the individual components that together comprise the project, and identifies the discretionary approvals required for project implementation.

Apex Energy Solutions, LLC (Applicant) is requesting approval of a General Plan amendment, zone change, and conditional use permit (CUP) to allow for the construction and operation of a solar energy facility with an integrated battery energy storage system. The proposed VEGA 6 project consists of three primary components: 1) an 80 megawatt (MW) solar energy generation equipment and associated facilities including a substation and access roads (herein referred to as "solar energy facility"); 2) a 160 MW battery energy storage system (BESS); and, 3) electrical generator intertie (gen-tie) transmission line to connect to the Imperial Irrigation District's (IID) 161 kilovolt (kV) "L" Line.

Energy generated by the VEGA 6 project will be transmitted to IID's existing 161 kV "L" Line, with ultimate delivery to IID's Ramon Substation in Riverside County. IID has identified that upgrades to the Ramon Substation will be required in order to accommodate several planned utility-scale projects, including the VEGA 6 project. Upgrades to the Ramon Substation would involve expansion of an approximately 4-acre area immediately adjacent to the existing substation. The proposed upgrades to the Ramon Substation are necessary infrastructure improvements to accommodate several planned utility-scale projects, including the VEGA 6 project, to connect to the IID grid. Because it is a necessary infrastructure improvement to allow the VEGA 6 project to connect to the IID grid, the Ramon Substation expansion is considered a connected project for the purposes of CEQA review. Therefore, this EIR evaluates the potential environmental impacts of the proposed expansion of the Ramon Substation.

2.1 Project Location

2.1.1 Solar Energy Facility

The solar energy facility site is located on approximately 320 acres of privately-owned vacant land on a single parcel (Assessor Parcel Number (APN) 034-160-002) in the unincorporated Imperial County, California (Figure 2-1). The site is located approximately 6 miles south of the southern-most edge of the Salton Sea; 10 miles west of the City of Brawley; and approximately 5 miles southwest of the community of Westmorland. The solar energy facility site is located directly south of Andre Road and 0.50 mile west of the Westside Main Canal (Figure 2-2).

The topography of the solar energy facility site is relatively flat, with elevations ranging between -39 meters (-129 feet) and -6 meters (-21 feet). The solar energy facility site is bound by undeveloped Open Space/Bureau of Land Management (BLM) land immediately to the west and south, and active agricultural land to the north and east. The Westside Main Canal travels southeast to northwest and is located northeast and east of the solar energy facility site.

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Figure 2-1. Regional Location

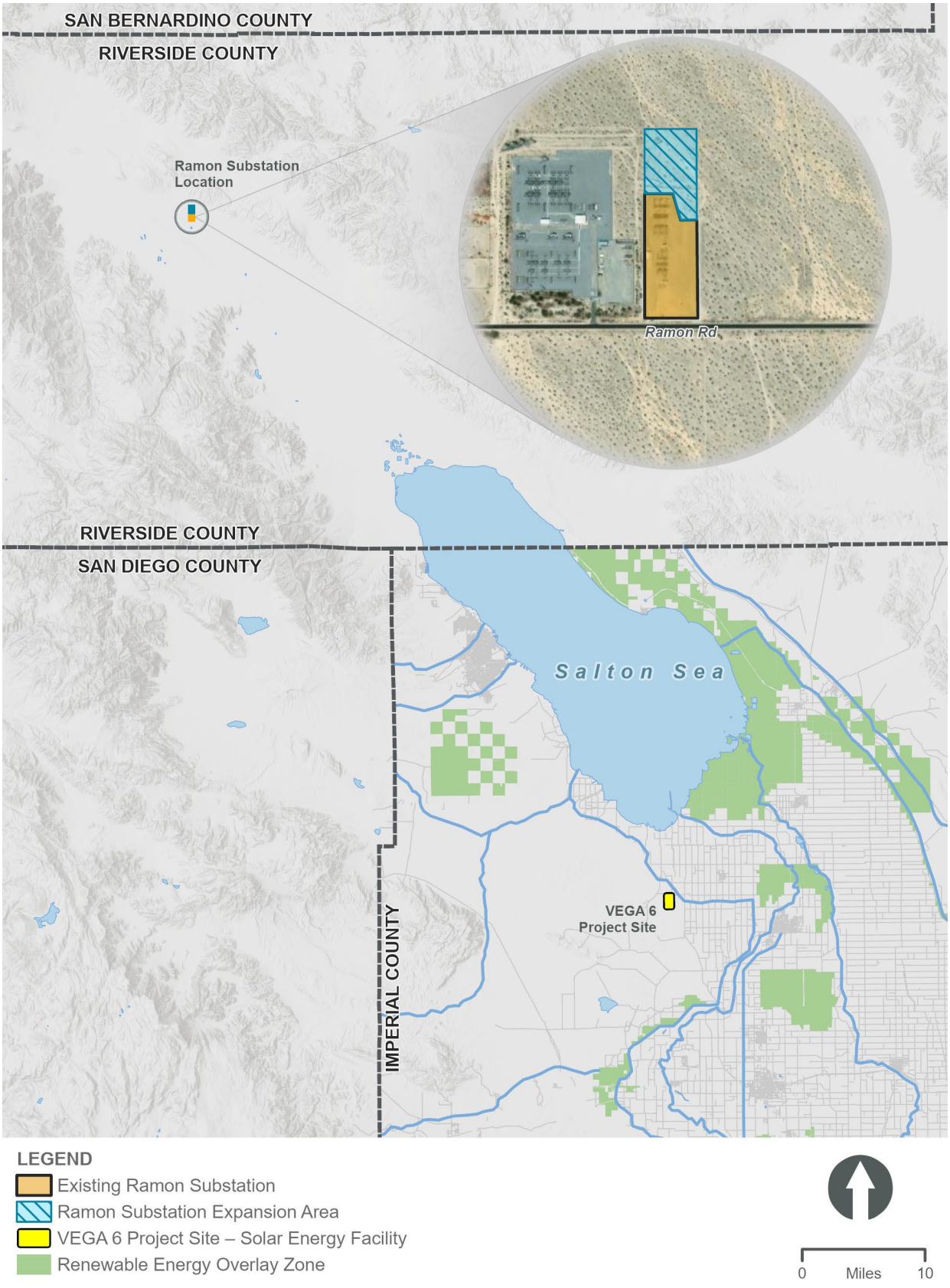

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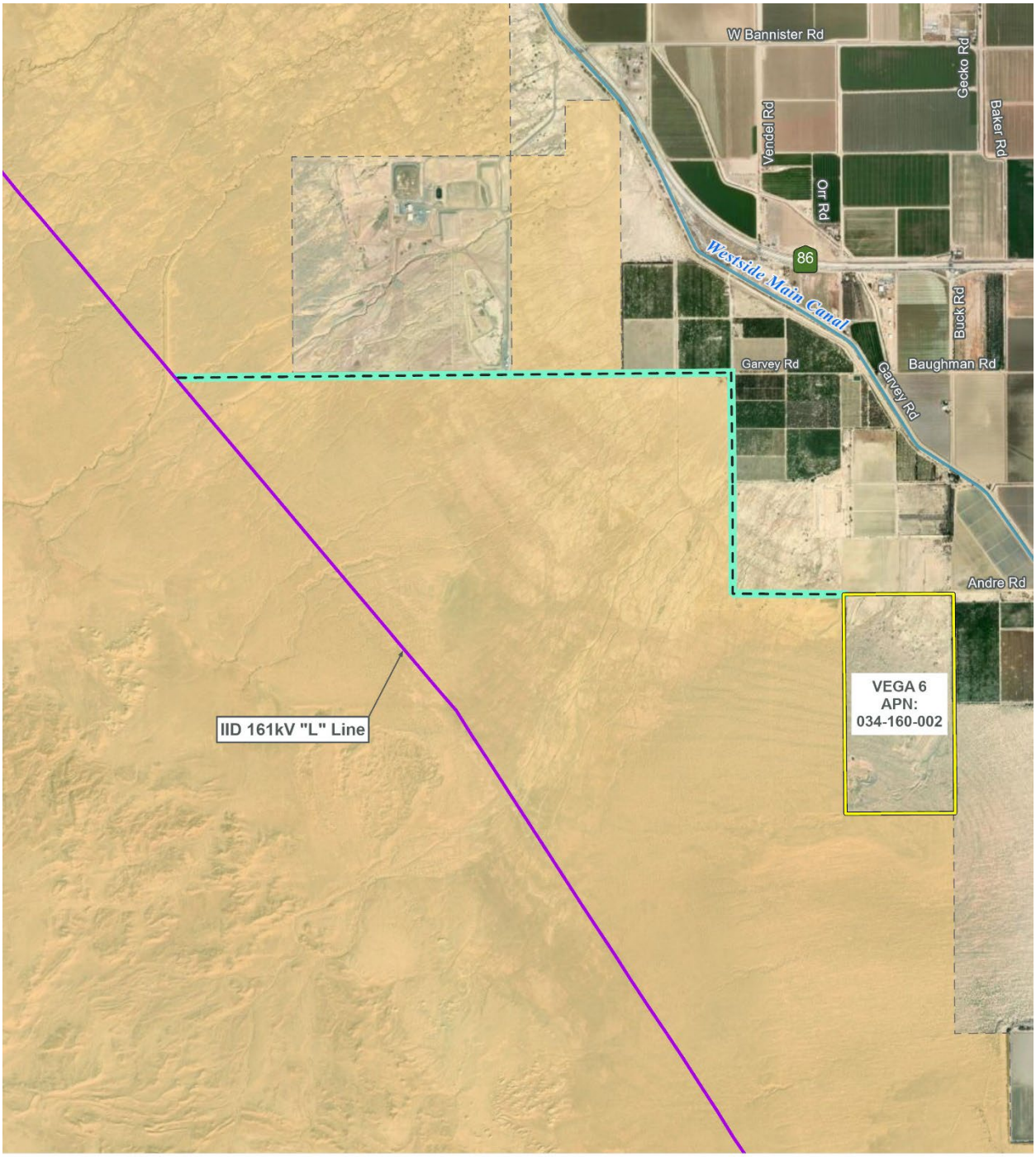
Figure 2-2. VEGA 6 Project Site



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2.1.2 Battery Energy Storage System

As depicted in Figure 2-3, the project includes a BESS, which is proposed to be located in the northwest portion of the solar energy facility site.

2.1.3 Gen-Tie Line

The proposed project includes an approximately 4-mile gen-tie transmission line that would connect to the IID's existing 161 kV "L" Line. The entire gen-tie route would be on federal lands managed by the Bureau of Land Management (BLM) within the California Desert Conservation Area (CDCA) planning area. As shown in Figure 2-4, the gen-tie route begins at the northwest corner of the solar facility site, heads west approximately 0.5 miles on BLM land, then north for approximately 1 mile, and then west for 2.5 miles along Garvey Road where it would connect to the IID 161 kV "L" Line.

2.1.4 Renewable Energy Overlay Zone

In 2016, the County adopted the Imperial County Renewable Energy and Transmission Element, which includes an RE Zone (RE Overlay Map). This General Plan element was created as part of the California Energy Commission Renewable Energy Grant Program to amend and update the County's General Plan to facilitate future development of renewable energy projects.

The County Land Use Ordinance, Division 17, includes the RE Overlay Zone, which authorizes the development and operation of renewable energy projects with an approved CUP. The RE Overlay Zone is concentrated in areas determined to be the most suitable for the development of renewable energy facilities while minimizing the impact on other established uses. CUP applications proposed for specific renewable energy projects not located in the RE Overlay Zone would not be allowed without an amendment to the RE Overlay Zone.

As shown on Figure 2-1, the entire project site is located outside of the RE Overlay Zone. Therefore, the applicant is requesting a General Plan Amendment to include/classify the project site (APN No. 034-160-002) into the RE Overlay Zone. No change in the underlying General Plan land use (Agriculture) is proposed.

2.1.5 Ramon Substation Expansion

The existing Ramon Substation is located on a single parcel (APN 651-230-015) in unincorporated Riverside County, generally northeast of Cathedral City, north of the Interstate-10 Freeway. The existing substation currently occupies approximately 6.7 acres of the 11.26-acre parcel. As shown in Figure 2-5, the proposed upgrades would involve expansion of an approximately 4-acre area immediately adjacent to the existing substation within APN 651-230-015. Immediately west of the existing Ramon Substation and proposed expansion area is the existing SCE Mirage Substation. Access to the existing substation is provided by Ramon Road, which is immediately south of the existing substation.

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Figure 2-3. VEGA 6 Site Plan

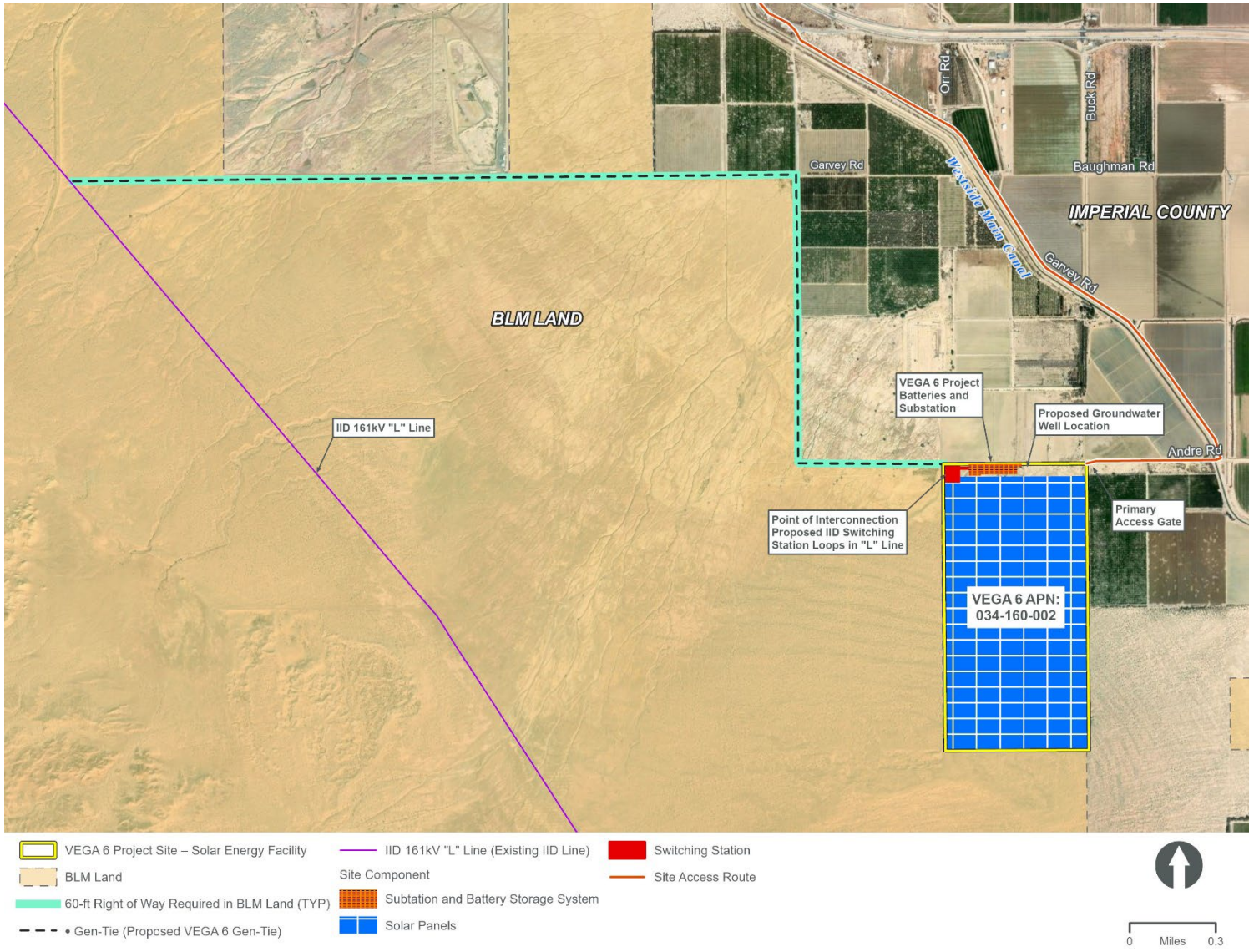

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Figure 2-4. VEGA 6 Gen-Tie Route

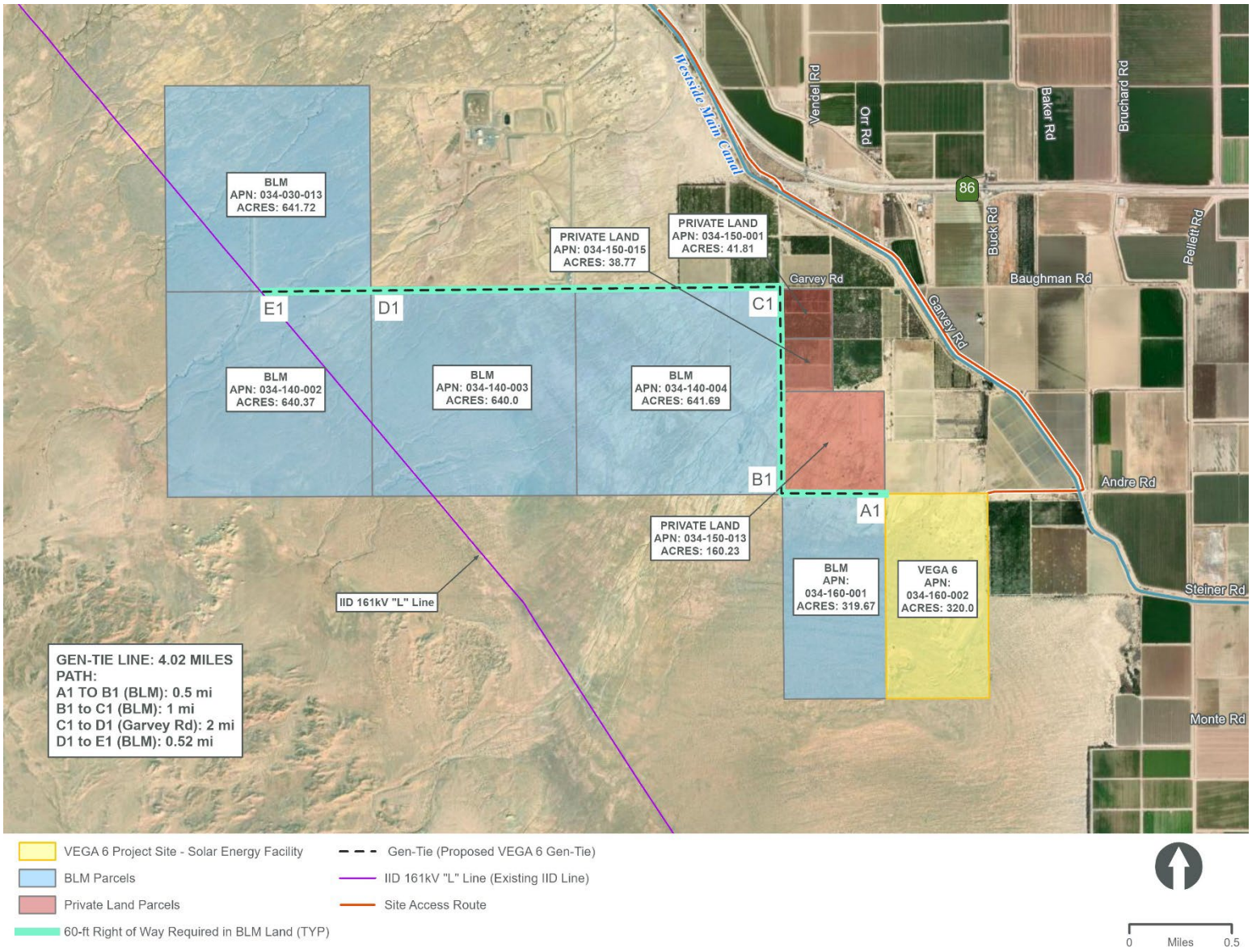

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Figure 2-5. CDCA and DRECP Planning Areas

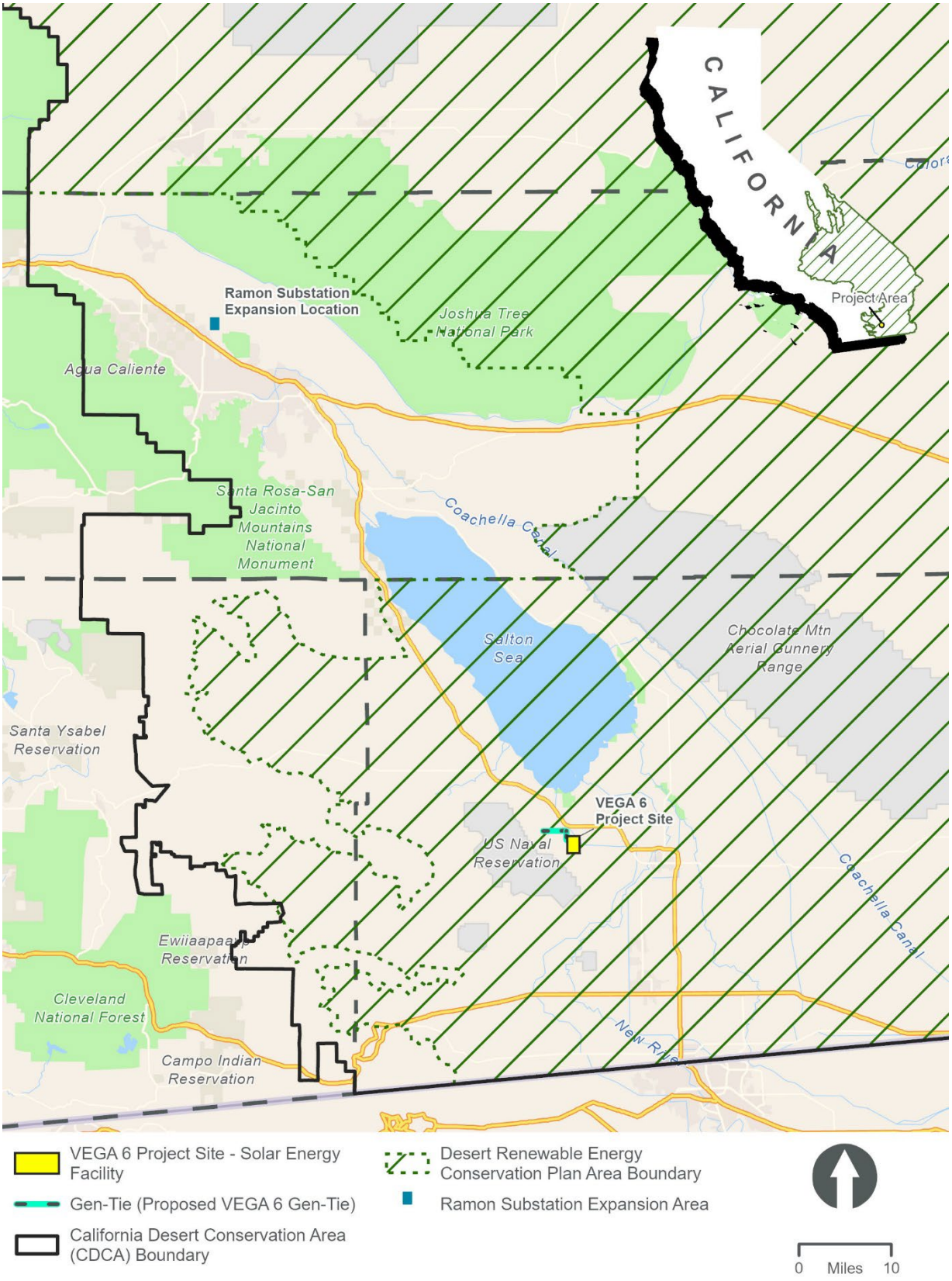

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Figure 2-6. DRECP Renewable Energy Development Focus Areas

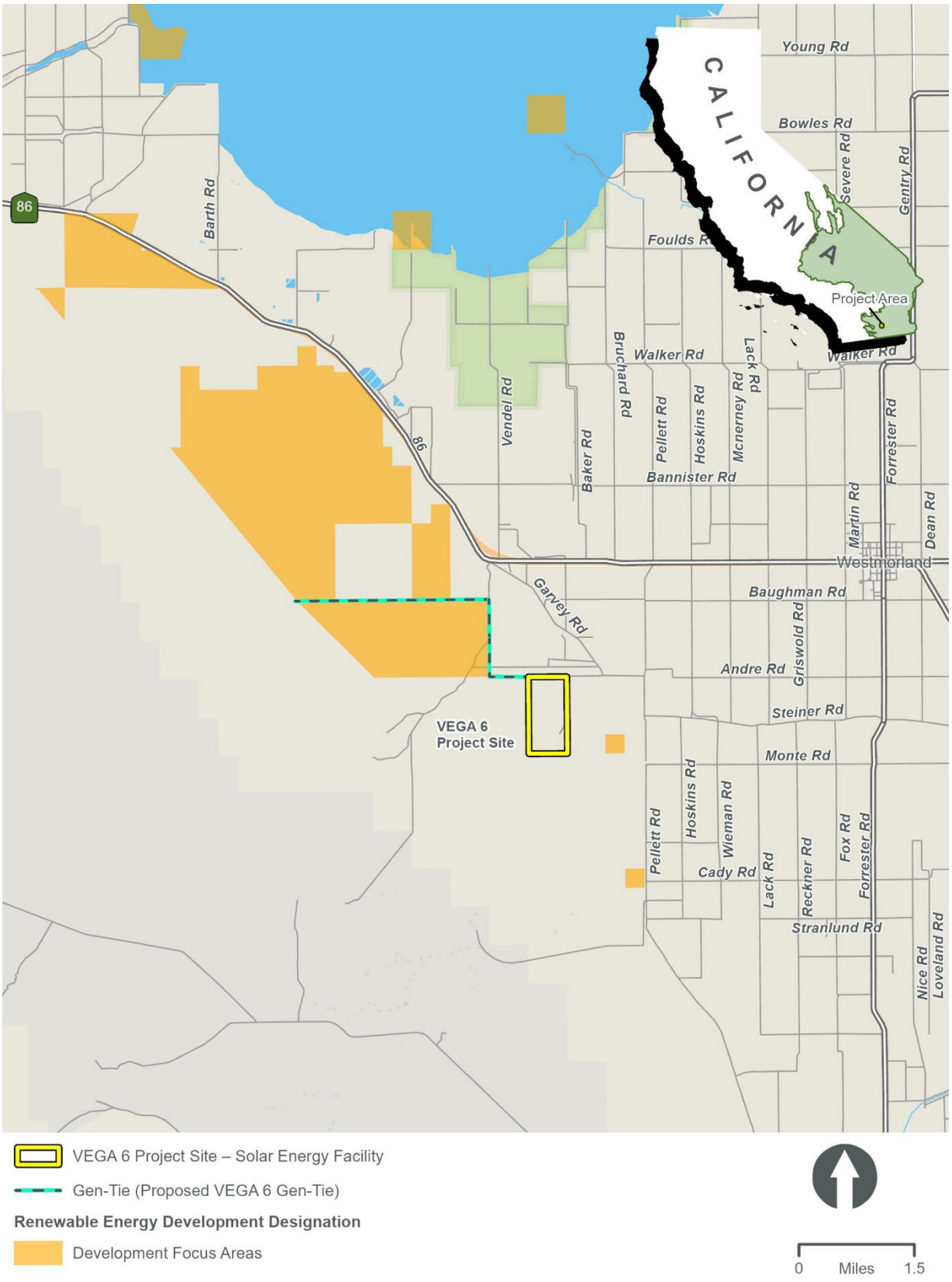

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Figure 2-7. Ramon Substation Expansion Area Location

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2.2 Project Objectives

- Construct and operate a solar energy facility capable of producing up to 80 MW alternating current (AC) of electricity to assist the State of California in achieving its 60 percent renewable portfolio standard by 2030.
- Provide a 160 MW energy (battery storage) system, that would accommodate and store the power generated by the project so that the facility can continue to provide renewable energy during non-daylight hours.
- Help California meet its statutory and regulatory goal of increasing renewable power generation, including greenhouse gas reduction goals of Senate Bill 32.
- Interconnect directly to IID's existing electrical transmission system.
    - Minimize and mitigate any potential impact to sensitive environmental resources within the project area.

2.3 VEGA 6 Characteristics

The proposed VEGA 6 project involves the construction and operation of a 80 MW photovoltaic (PV) solar facility with an integrated 160 MW BESS on approximately 320 acres of privately-owned land. The proposed VEGA 6 project would be comprised of solar PV arrays panels, an on-site substation, BESS, gen-tie line, inverters, transformers, underground electrical cables, and access roads. These project components are described in detail below and depicted in Figure 2-3.

2.3.1 Photovoltaic Panels/Solar Arrays

The VEGA 6 project proposes to use either thin film or crystalline solar PV technology modules mounted either on fixed frames or horizontal single-axis tracker (HSAT) systems. The fixed-frame PV module arrays would be mounted on racks that would be supported by driven piles. The fixed-frame racks would be secured at a fixed tilt of 20 to 30 degrees from horizontal facing a southerly direction. As proposed, individual PV modules would be mounted two high on a fixed frame, providing 12 to 24 inches of ground clearance and resulting in the tops of the panels at approximately 7.5 feet above the ground. The fixed PV modules would be arranged in arrays spaced approximately 15 to 25 feet apart (pile-to-pile) to maximize performance and to allow access for panel cleaning. These arrays would be separated from each other and the perimeter security fence by up to 30-foot-wide interior roads.

If HSAT technology is used, the PV modules would rotate around the north-south HSAT axis so that the PV modules would continue to face the sun as the sun moves across the sky throughout the day. The PV modules would reach their maximum height (up to 9 feet above the ground, depending on the final design) at both sunrise and sunset, when the HSAT is rotated to point the modules at the rising or setting sun. At noon, or when stowed during high winds, when the HSAT system is rotated so that the PV modules are horizontal, the nominal height would be about 6 feet above the ground, depending on the final design. The individual PV systems would be arranged in large arrays by placing them in columns spaced approximately 10 feet apart to maximize operational performance and to allow access for panel cleaning and maintenance. Individual HSAT PV modules, each approximately 2 feet wide by 4 feet long (depending on the specific PV technology selected), would be mounted on a frame which is attached to an HSAT system. These HSAT arrays would be separated from each other and the perimeter security fence by up to 30-foot-wide roads, consistent with County emergency access requirements.

2.3.2 Battery Energy Storage System

The proposed BESS would be constructed adjacent to the project's substation and would consist of either lithium ion or flow batteries. The batteries will either be housed in storage containers or buildings fitted with heating, ventilation, and air conditioning and fire suppression systems. Inside the housing, the batteries will be placed on racks, the orientation of which depends on the type of housing. Underground trenches with conduits will be used to connect the batteries to the control and monitoring systems, and inverters to convert the PV-produced direct current (DC) power to alternating current (AC) power. The BESS would be capable of storing up to 160 MW. Figure 2-6 depicts representative examples of a typical BESS.

2.3.3 Interconnection Facilities

As shown in Figure 2-3, a new substation would be constructed in the northwest portion of the solar energy facility site. The inverters would be connected to pad-mounted transformers to raise the voltage from 385V to the 34.5 kV voltage level of the collector system inside the project substation. This system collects the energy from all the inverters and then transmits it through a generator step-up transformer, which steps up the voltage level to the 161 kV of the existing IID "L" line.

A new interconnection switching station would be constructed in the northwest corner of the solar energy facility site, immediately adjacent to the substation. The switching station would include circuit breakers, switches, overhead bus work, protective relay equipment and an electrical control building. The switching station would operate at 161 kV and be equipped with two circuit breakers, allowing for looping in of the IID 161 kV "L" transmission line as well as connection to the project's gen-tie line. The substation and switching station would be connected via a single overhead 161 kV line. The switching station would be enclosed within its own fence.

The medium voltage power produced by the VEGA 6 project would be conveyed underground, or aboveground where necessary to cross over any sensitive site features, to connect to the project's interconnection facilities. The project's interconnection facilities design would meet all necessary utility standards and requirements. As required, surge arrestors would be used to protect facilities and auxiliary equipment from lightning strikes or other disturbances. Distribution from the site would be via an overhead connection.

Figure 2-8. Representative Example of Battery Energy Storage Systems

2.3.4 Gen-Tie Line

The proposed VEGA 6 project includes an approximately 4-mile gen-tie transmission line that would connect to the IID's existing 161 kV "L" Line. The entire gen-tie route would be on federal lands managed by the BLM within the California Desert Conservation Area (CDCA) planning area. As shown in Figure 2-4, the gen-tie route begins at the northwest corner of the solar facility site, heads west approximately 0.5 miles on BLM land, then north for approximately 1 mile, and then west for 2.5 miles along Garvey Road where it would connect to IID's 161 kV "L" Line.

The 4-mile gen-tie line would include a total of 77 pole structures, with a combination of tangent double circuit wood pole structures (Figure 2-7), deadend double circuit wood pole structures (Figure 2-8), and double circuit steel poles (Figure 2-9). At the interconnection point, three-wood pole structures and deadend wood structures would be used. The height of the proposed gen-tie transmission structures would be 75 feet.

The electrical energy produced by the VEGA 6 project would be conducted through the project substation to the proposed 161 kV gen-tie line and delivered to the existing IID-approved point of interconnection at the IID 161 kV "L" line.

Bureau of Land Management Right-of-Way Request

Because the proposed gen-tie line would be located entirely on BLM land, the project applicant has filed a right-of-way (ROW) grant application with the BLM for a permit to construct, operate, and maintain the gen-tie line. As shown in Figure 2-4, the proposed ROW would be 60-feet-wide. A total of 77 pole structures would be set within this ROW. Construction of the gen-tie line would result in approximately 24.5 acres of disturbed area.

2.3.5 Security

Six-foot high chain link fencing topped with barbed wire would be installed around the perimeter of the solar energy facility site at the commencement of construction and site access would be limited to authorized site workers. Points of ingress/egress would be accessed via locked gates. In addition, a motion detection system and closed-circuit camera system may also be installed. The site would be remotely monitored 24 hours per day, 7 days per week. In addition, routine unscheduled security rounds may be made by the security team monitoring the site security.

2.3.6 Site Access

The solar energy facility site would include one primary access driveway, proposed via State Route (SR) 78 from the north and west, and across the Westside Main Canal, via county roadways (Garvey Road and Andre Road). This driveway would be provided with a minimum of 30-foot double swing gates with “Knox Box” for keyed entry. Internal to the solar energy facility site, up to 30-foot-wide roads would be provided between the PV arrays, as well as around the perimeter of the solar energy facility site yet inside the perimeter security fence to provide access to all areas of the site for maintenance and emergency vehicles.

Figure 2-9. Representative Example of Tangent Double Circuit Wood Pole Structure

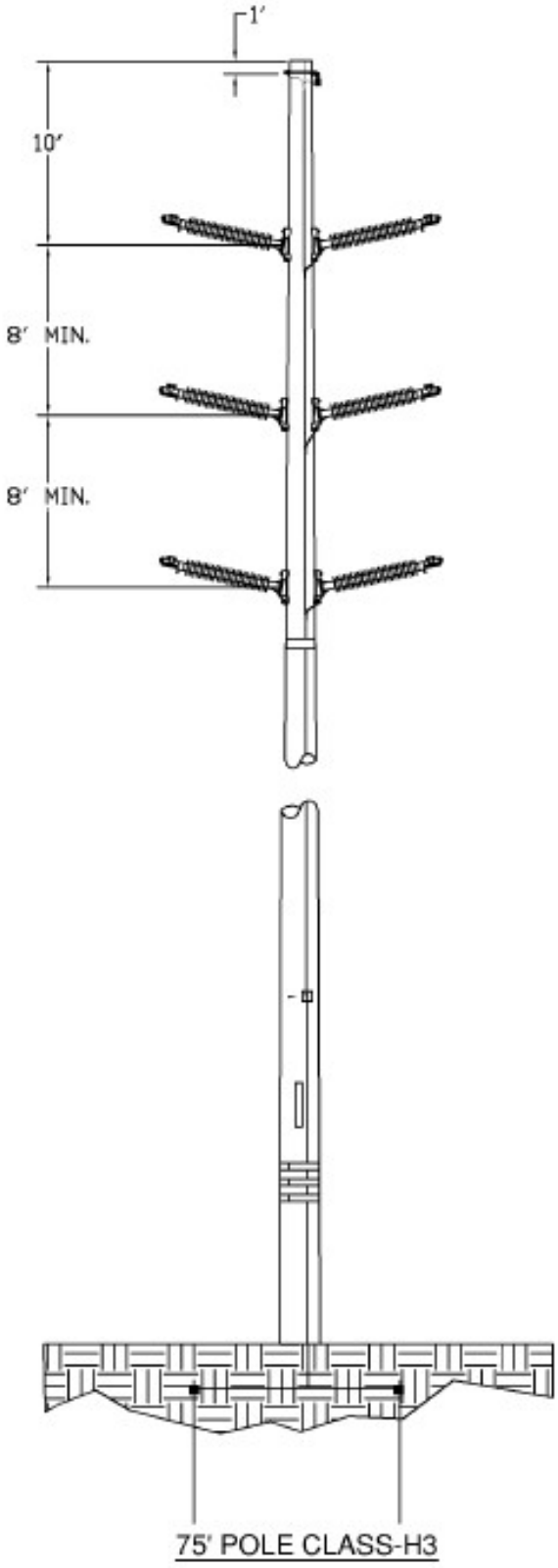

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Figure 2-10. Representative Example of Deadend 3-Pole Structure

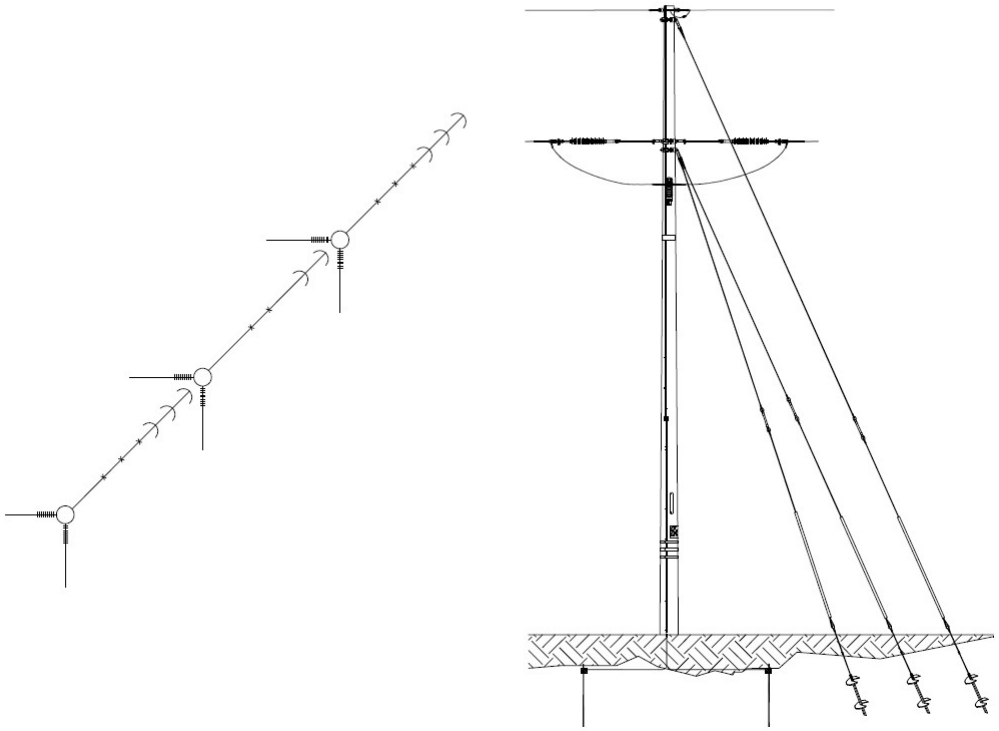
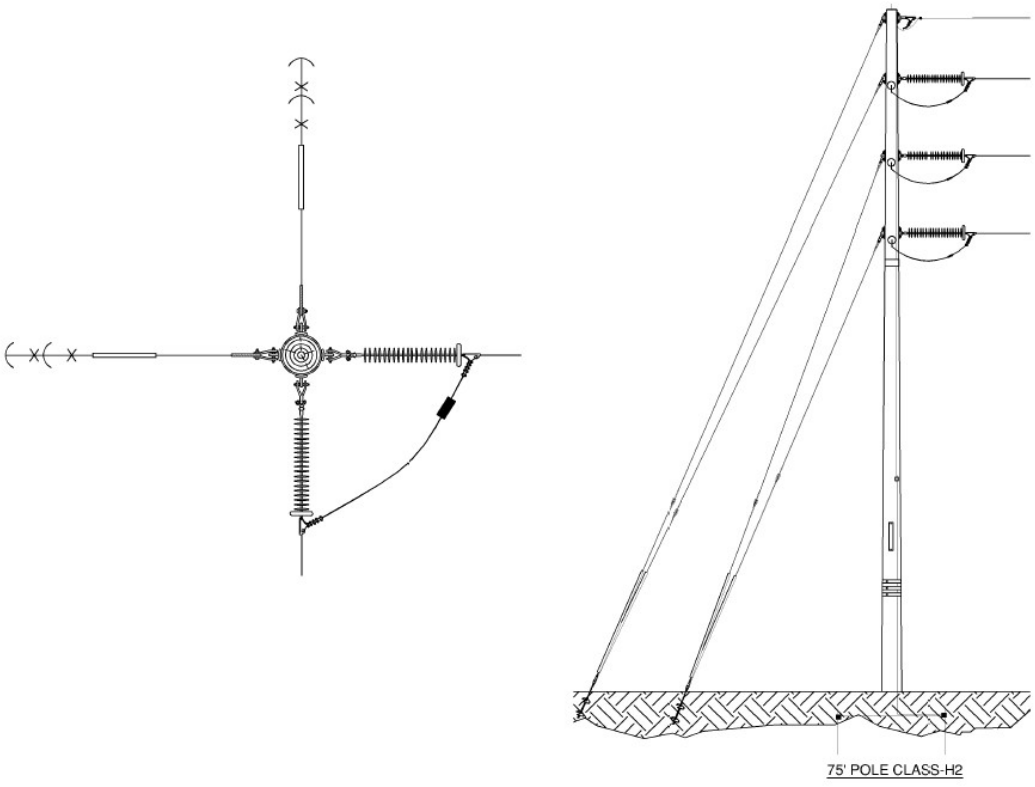


Figure 2-11. Representative Example of Deadend Double Circuit Pole Structure



2.3.7 Fire Protection/Fire Suppression

Fire protection systems for battery systems would be designed in accordance with California Fire Code and would take into consideration the recommendations of the National Fire Protection Association (NFPA) 855.

Fire suppression agents such as Novec 1230 or FM 2000, or water may be used as a suppressant. In addition, fire prevention methods would be implemented to reduce potential fire risk, including voltage, current, and temperature alarms. Energy storage equipment would comply with Underwriters Laboratory (UL)-95401 and test methods associated with UL-9540A. The project would include lithium-ion batteries. For lithium-ion batteries storage, a system would be used that would contain the fire event and encourage suppression through cooling, isolation, and containment. Suppressing a lithium-ion (secondary) battery is best accomplished by cooling the burning material. A gaseous fire suppressant agent (e.g., 3M™ Novec™ 1230 Fire Protection Fluid or similar) and an automatic fire extinguishing system with sound and light alarms would be used for lithium-ion batteries.

To mitigate potential hazards, redundant separate methods of failure detection would be implemented. These would include alarms from the Battery Management System (BMS), including voltage, current, and temperature alarms. Detection methods for off gas detection would be implemented, as applicable. These are in addition to other potential protective measures such as ventilation, overcurrent protection, battery controls maintaining batteries within designated parameters, temperature and humidity controls, smoke detection, and maintenance in accordance with manufacturer guidelines. Remote alarms would be installed for operations personnel as well as emergency response teams in addition to exterior hazard lighting. In addition, an Incidence Response Plan would be implemented. Additionally, the project applicant would contribute its proportionate share for purchase of any fire-suppression equipment, if determined warranted by the County Fire Department for the proposed project.

2.3.8 Construction

Construction activities would primarily involve demolition and grubbing; grading of the project area to establish access roads and pads for electrical equipment (inverters and step–up transformers); trenching for underground electrical collection lines; the installation of solar equipment and security fencing; and the offsite infrastructure work required for the IID gen-tie transmission line route. Stormwater management facilities would be constructed internally within the solar energy facility site and would consist of basins and infiltration areas. Construction is estimated to take 12 to 18 months and would begin in 2024. A temporary, portable construction supply container would be located at the solar energy facility site at the beginning of construction and removed at the end of construction.

Dust generated during construction would be controlled by watering and, as necessary, the use of other dust suppression methods and materials accepted by the Imperial County Air Pollution Control District (ICAPCD).

The number of on-site construction workers for the solar energy facility is not expected to exceed 150 workers at any one time. The number of on-site construction workers for the BESS and the substation is not expected to exceed 100 workers at any one time.

2.3.9 Operations and Maintenance

Once construction is completed, the facility would be remotely operated, controlled and monitored and with no requirement for daily on-site employees. Security personnel may conduct unscheduled security rounds and would be dispatched to the project site in response to a fence breach or other alarm.

Up to two to three people would be contracted (part-time) to perform all routine and emergency operational and maintenance activities. Such activities include inspections, equipment servicing, site and landscape clearing, and periodic washing of the PV modules if needed (up to two times per year) to maintain power generation efficiency. Vegetation growing on the solar energy facility site would periodically (approximately every 3 months) be removed manually and/or treated with herbicides.

2.3.10 Water Use

The VEGA 6 project site is approximately 5 to 10 miles away from the nearest municipal water systems (i.e., the community of Westmorland and the City of Brawley, respectively). The VEGA 6 project site is also located outside of IID's Imperial Unit, and therefore, does not have water service from IID. Water for construction (primarily dust control) would be obtained from a new onsite groundwater supply well or wells to be drilled and installed as part of the VEGA 6 project (see Figure 2-3). Potable water would be brought to the VEGA 6 project site for drinking and domestic needs.

Construction

The proposed VEGA 6 project would require approximately 170-acre feet (AF) of water for dust suppression and site grading during construction of the arrays, BESS area, and onsite substation.

Operation and Maintenance

Periodic washing of the PV modules is not expected to be necessary but could be needed to remove dust to maintain power generation efficiency. The amount of water needed for this purpose is conservatively estimated at 8 AF per year.

2.3.11 Restoration of the VEGA 6 Project Site

Electricity generated by the facility could be sold under the terms of a PPA with a power purchaser (i.e., utility service provider). At the end of the PPA term, the owner of the facility may choose to enter into a subsequent PPA, update technology and re-commission, or decommission and remove the generating facility and its components. The anticipated operational life of the project is 25 to 30 years. Upon decommissioning, the site could be converted to other uses in accordance with applicable land use regulations in effect at that time. A collection and recycling program will be executed to promote recycling of project components and minimize disposal in landfills. All permits related to decommissioning would be obtained, where required.

Project decommissioning may include the following activities:

- The facility would be disconnected from the utility power grid.
- Project components would be dismantled and removed using conventional construction equipment and recycled or disposed of safely.

- PV panel support steel and support posts would be removed and recycled off-site by an approved metals recycler.
- All compacted surfaces within the project site and temporary on-site haul roads would be de-compacted.
- Electrical and electronic devices, including inverters, transformers, panels, support structures, lighting fixtures, and their protective shelters would be recycled off-site by an approved recycler.
- All concrete used for the underground distribution system would be recycled off-site by a concrete recycler or crushed on-site and used as fill material.
- Fencing would be removed and recycled off-site by an approved metals recycler.
- Gravel roads would be removed; filter fabric would be bundled and disposed of in accordance with all applicable regulations. Road areas would be backfilled and restored to their natural contour.
- Soil erosion and sedimentation control measures would be re-implemented during the decommissioning period and until the site is stabilized.

2.4 Ramon Substation Expansion

Upgrades to the existing Ramon Substation are proposed which would add additional capacity to the substation in order to accommodate electricity generated by planned utility-scale solar projects, which would tie into the substation, and then energy converted would be added to the electrical grid. This includes, but is not limited to, the proposed VEGA 6 project.

The upgrades would involve an expansion of the existing developed area of the substation, generally expanding to include 4 additional acres of a currently undisturbed area at the substation site. During construction, access to the proposed improvement area would be through the existing substation site, via existing dirt roads located on the west and east of the existing substation, or a combination thereof.

2.4.1 Construction

The construction of the Ramon Substation expansion is estimated to take 180 working days and would begin in 2024. The number of on–site construction workers is not expected to exceed 20 workers at any one time.

Dust generated during construction would be controlled by watering and, as necessary, the use of other dust suppression methods and materials accepted by the South Coast Air Quality Management District (SCAQMD).

2.4.2 Operation and Maintenance

Once constructed, the proposed Ramon Substation expansion will not require personnel to be present on-site and will not result in daily trip generation.

2.5 Required Project Approvals

2.5.1 Imperial County

The following are the primary discretionary approvals required for implementation of the project:

1. **General Plan Amendment #22-001.** An amendment to the County's General Plan, Renewable Energy and Transmission Element is required to implement the proposed project. CUP applications proposed for specific renewable energy projects not located in the RE Overlay Zone would not be allowed without an amendment to the RE Overlay Zone. As shown in Figure 2-1, the project site is located outside of the RE Overlay Zone. Therefore, the applicant is requesting a General Plan Amendment to include/classify the project site (APN No. 034-160-002) into the RE Overlay Zone. No change in the underlying General Plan land use (Agriculture) is proposed.
2. **Zone Change #22-0001.** The project site is currently zoned Open Space/Preservation (S-2). The applicant is requesting a Zone Change to include/classify the project site (APN No. 034-160-002) into the RE Overlay Zone to allow for solar and battery storage development.
3. **Approval of CUP #22-0005.** Implementation of the project would require the approval of a CUP by the County to allow for the construction and operation of the proposed solar energy facility with an integrated BESS. The project site is located on one privately-owned legal parcel zoned Open Space/Preservation (S-2). Pursuant to Title 9, Division 5, Chapter 19, the following uses are permitted in the S-2 zone subject to approval of a CUP from Imperial County:

   d) Communication Towers: including radio, television, cellular, digital, along with the necessary support equipment such as receivers, transmitters, antennas, satellite dishes, relays, etc.

   i) Major facilities relating to the generation and transmission of electrical energy provide[d] such facilities are not under State or Federal law, to [be] approved exclusively by an agency, or agencies of the State or Federal government, and provided such facilities shall be approved subsequent to coordination review of the Imperial Irrigation District for electrical matters. Such uses shall include but be limited to the following:

   - *Electrical generation plants*
   - *Facilities for the transmission of electrical energy (100-200 kV)*
   - *Electrical substations in an electrical transmission system (500 kv/230 kv/161 kV)*
4. **Approval of CUP (CUP 22-0027) – Groundwater Well.** Pursuant to Title 9 Division 21: Water Well Regulations, §92102.00, the Applicant will be required to obtain a CUP for the proposed on-site groundwater well. As required by §92102.00, no person shall (1) drill a new well, (2) activate a previously drilled but unused well, (unused shall mean a well or wells that have not been used for a 12 month) period by installing pumps, motors, pressure tanks, piping, or other equipment necessary or intended to make the well operational, (3) increase the pumping capacity of a well, or (4) change the use of a well, without first obtaining a CUP through the County Planning & Development Services Department.

5. **Certification of the EIR.** After the required public review for the Draft EIR, the County will respond to written comments, edit the document, and produce a Final EIR to be certified by the Planning Commission and Board of Supervisors prior to making a decision on approval or denial of the project.

Subsequent ministerial approvals may include, but are not limited to:

- Grading and clearing permits
- Building permits
- Reclamation plan
- Encroachment permits
- Transportation permit(s)

2.5.2 Discretionary Actions and Approvals by Other Agencies

Responsible Agencies are those agencies that have discretionary approval over one or more actions involved with development of the project. Trustee Agencies are state agencies that have discretionary approval or jurisdiction by law over natural resources affected by a project.

- **Imperial Irrigation District (IID) (CEQA Responsible Agency).** The IID is a Responsible Agency as defined by CEQA Guideline Section 15381 as it relates to the proposed Ramon Substation improvements. In this capacity, the IID has the discretionary authority to approve improvements to the existing Ramon Substation, and would utilize the information contained in this EIR, as prepared by the County of Imperial as the CEQA Lead Agency, as the CEQA clearance for the substation improvements.
- **Bureau of Land Management (BLM) (National Environmental Policy Act – Federal Lead Agency)**. Right-of-way grant for the off-site gen-tie line to be located on federal lands under the jurisdiction of the BLM. As shown in Figure 2-4, the proposed ROW would be 60-feet-wide.
- **County of Riverside.** The Ramon Substation expansion area is zoned General Residential Zone (R-3) in the Riverside County Zoning Ordinance. The Riverside County Zoning Ordinance does not identify public utilities as a permitted or conditional use in R-3. However, per Section 17.208.010, facilities for the storage or transmission of electrical energy is permitted with a Public Use Permit:

  > *Facilities for the storage or transmission of electrical energy where the County is not preempted by law from exercising jurisdiction. This subsection shall take precedence over and supersede any conflicting provision in any zone classification. Facilities for the storage or transmission of electrical energy shall not be subject to the development standards of the zone classification in which they are located.*

  The existing Ramon Substation is currently operating under an approved Public Use Permit. IID would apply for an amendment to its Public Use Permit for the proposed Ramon Substation expansion.

Additional Responsible and/or Trustee Agencies may include, but are not limited to the following:

- California RWQCB – Notice of Intent for General Construction Permit
- ICAPCD – Fugitive Dust Control Plan, Rule 801 Compliance
- CDFW (Trustee Agency) – ESA Compliance, Section 1600 Streambed Alteration Agreement
- USFWS – ESA Compliance

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