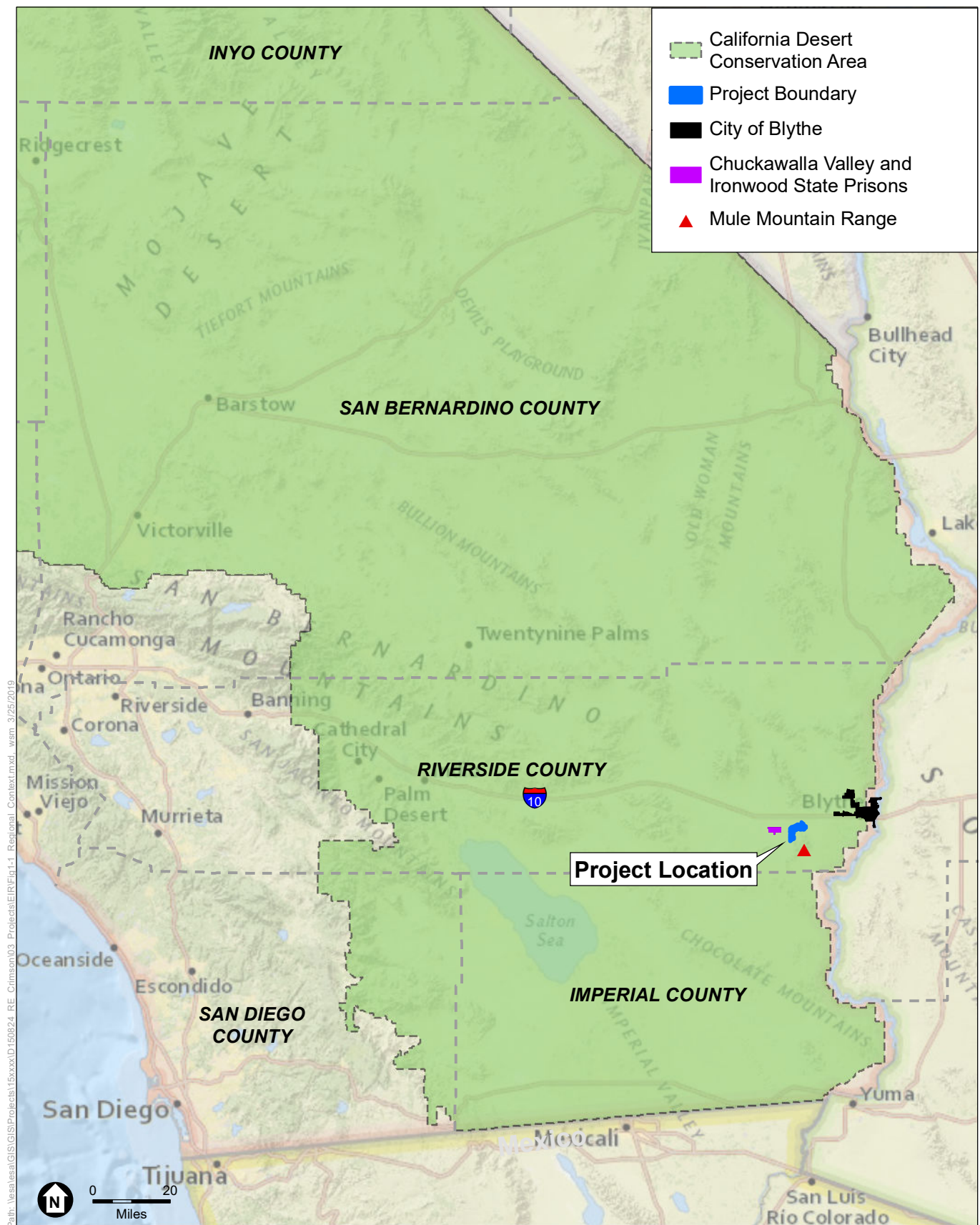


Appendix A

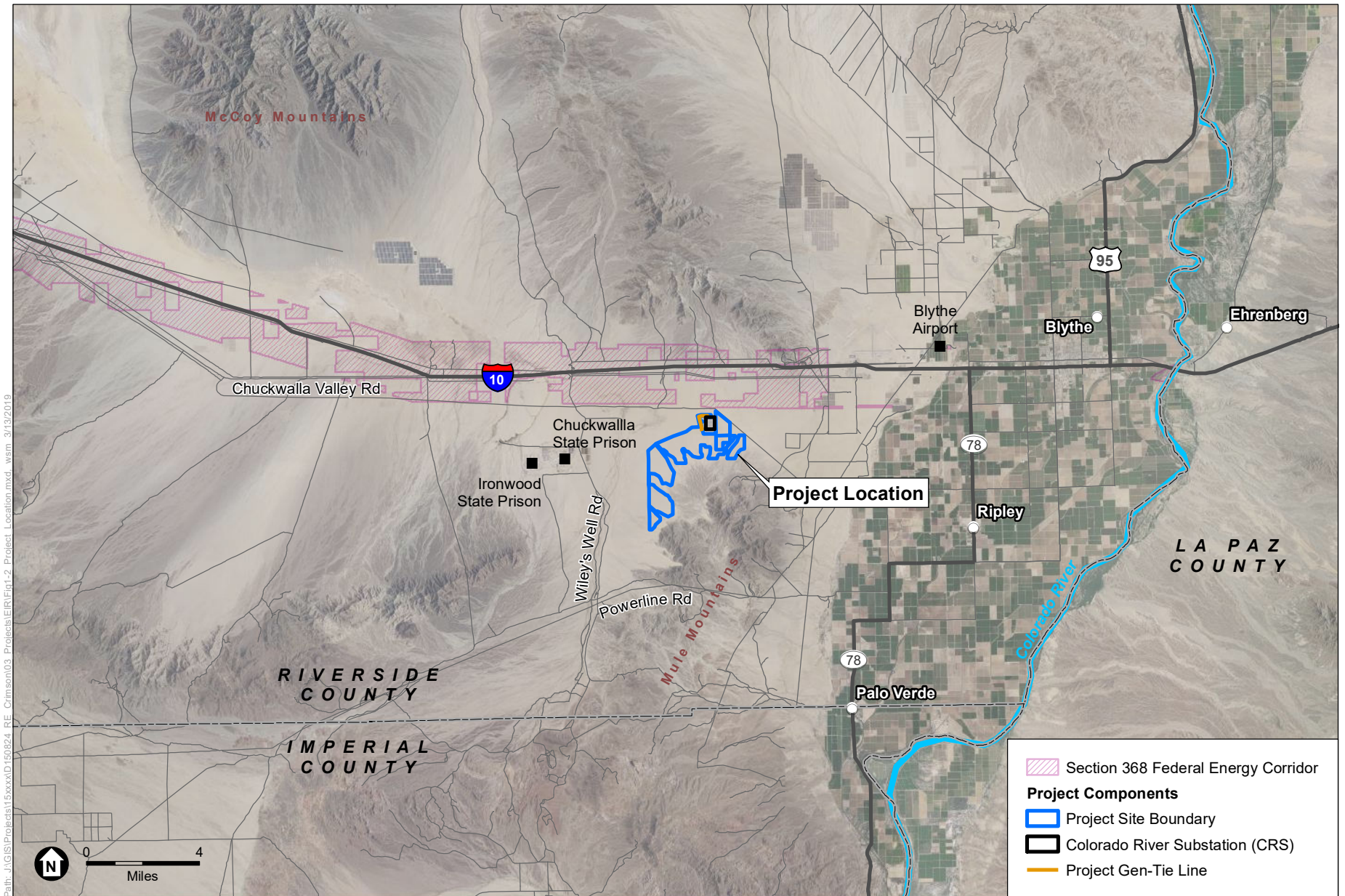
Figures



SOURCE: ESRI, 2018; BLM, 2018; ESA, 2018

Crimson Solar Project PA/EIS/EIR

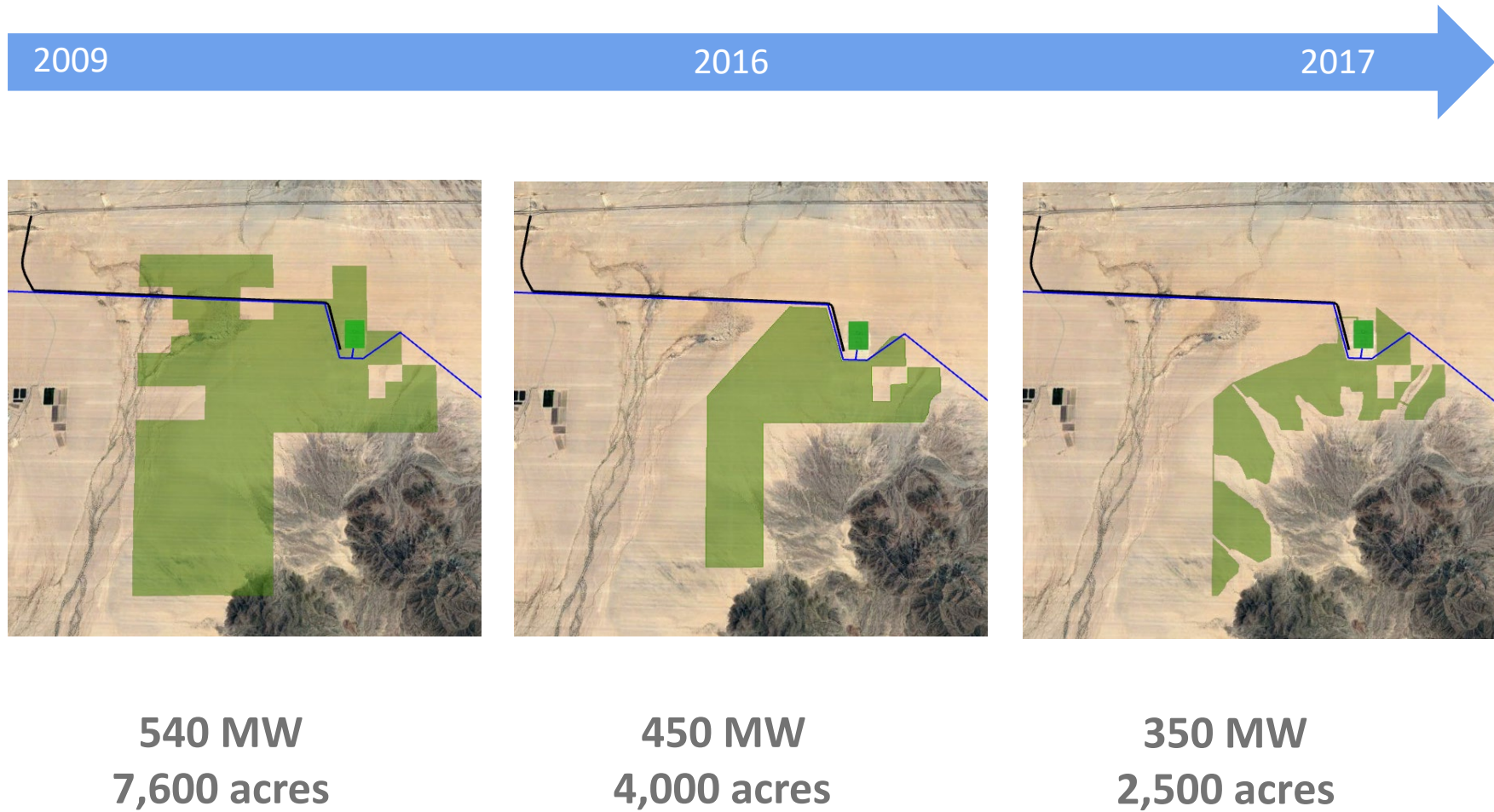
Figure 1-1
Regional Context



SOURCE: ESRI, 2018; ESA, 2018.

Crimson Solar Project PA/EIS/EIR

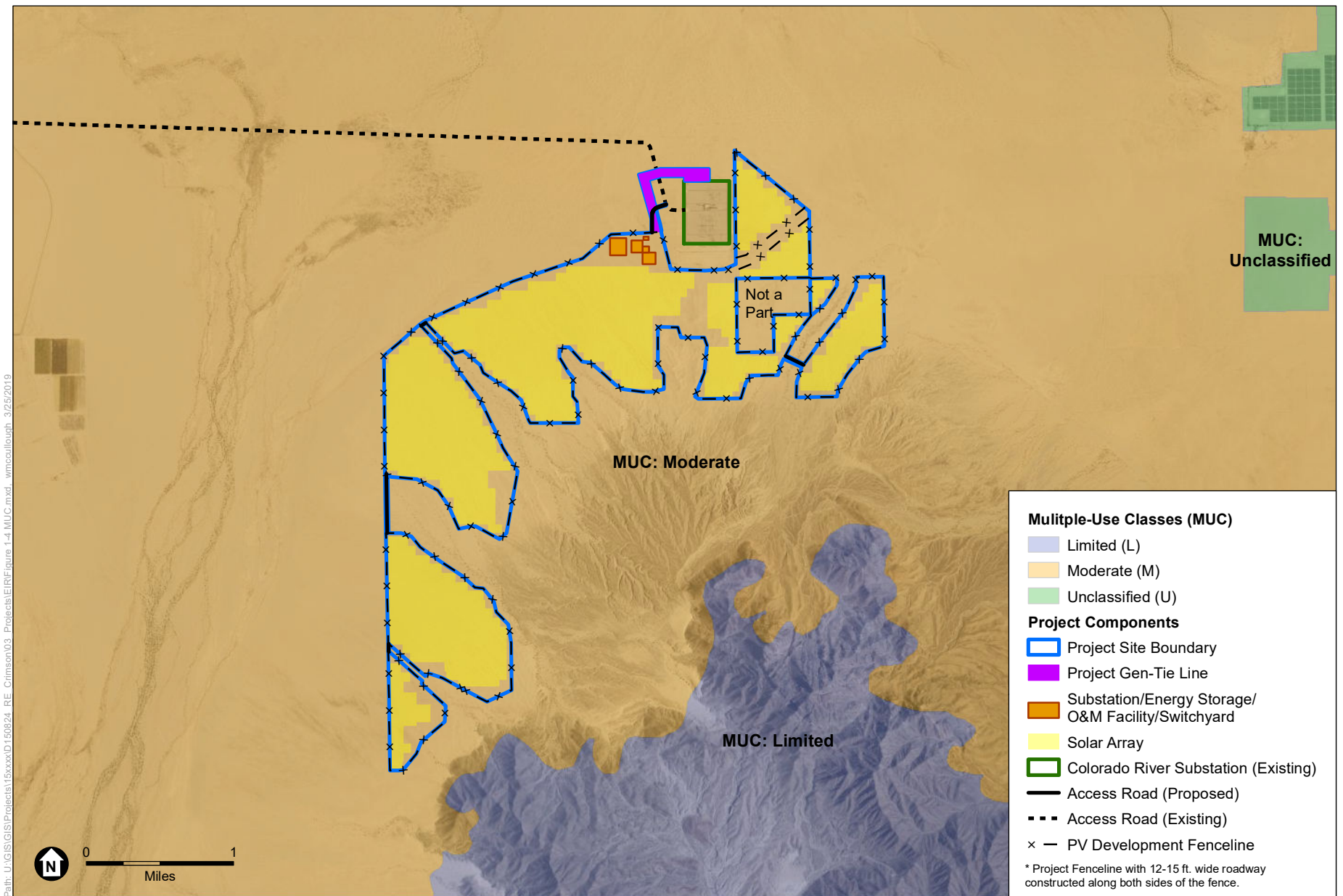
Figure 1-2
Project Location



SOURCE: Recurrent Energy

Recurrent Energy Crimson Solar EIS/EIR

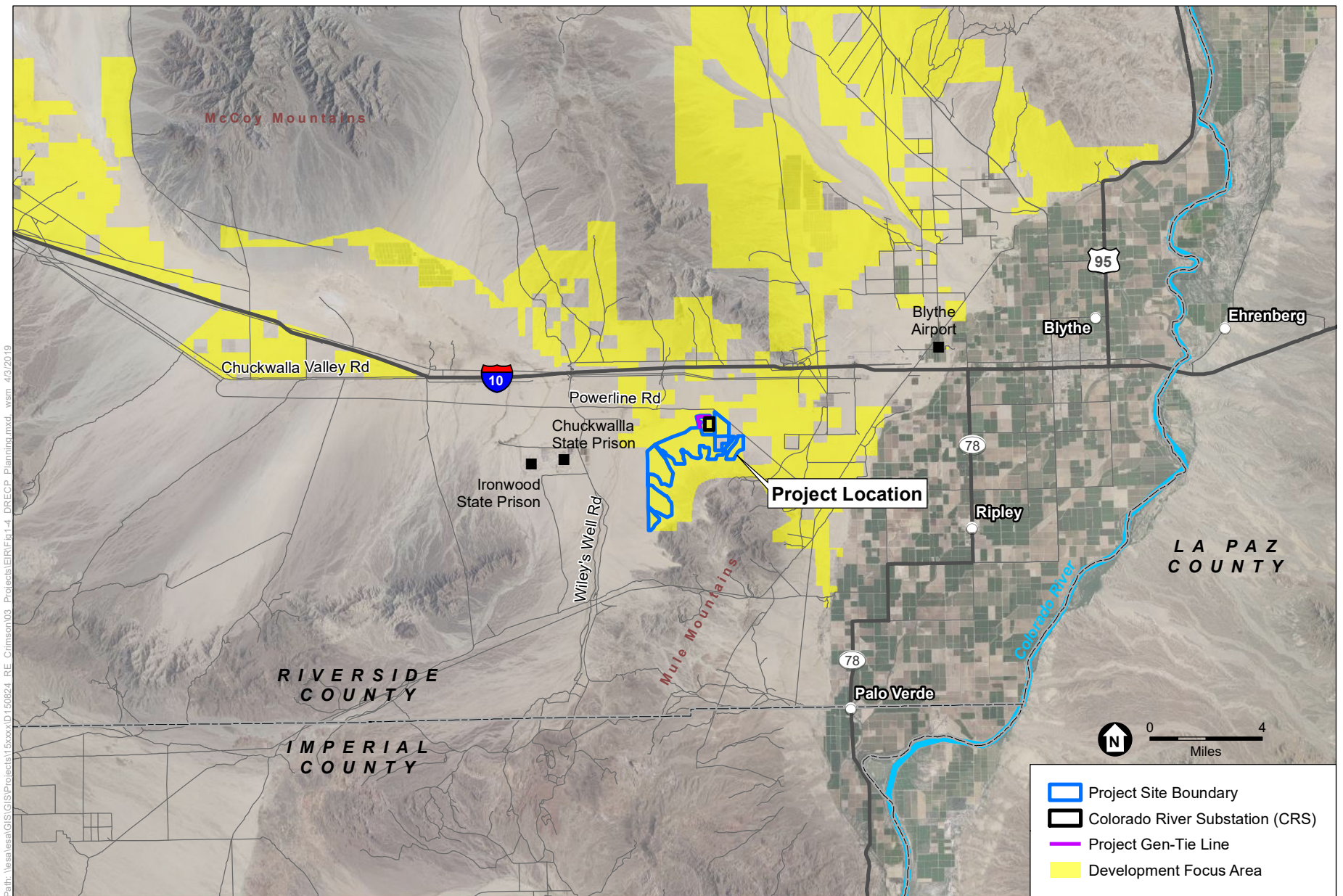
Figure 1-3
Project Evolution



SOURCE: ESRI, 2018; ESA, 2018; BLM, 2018

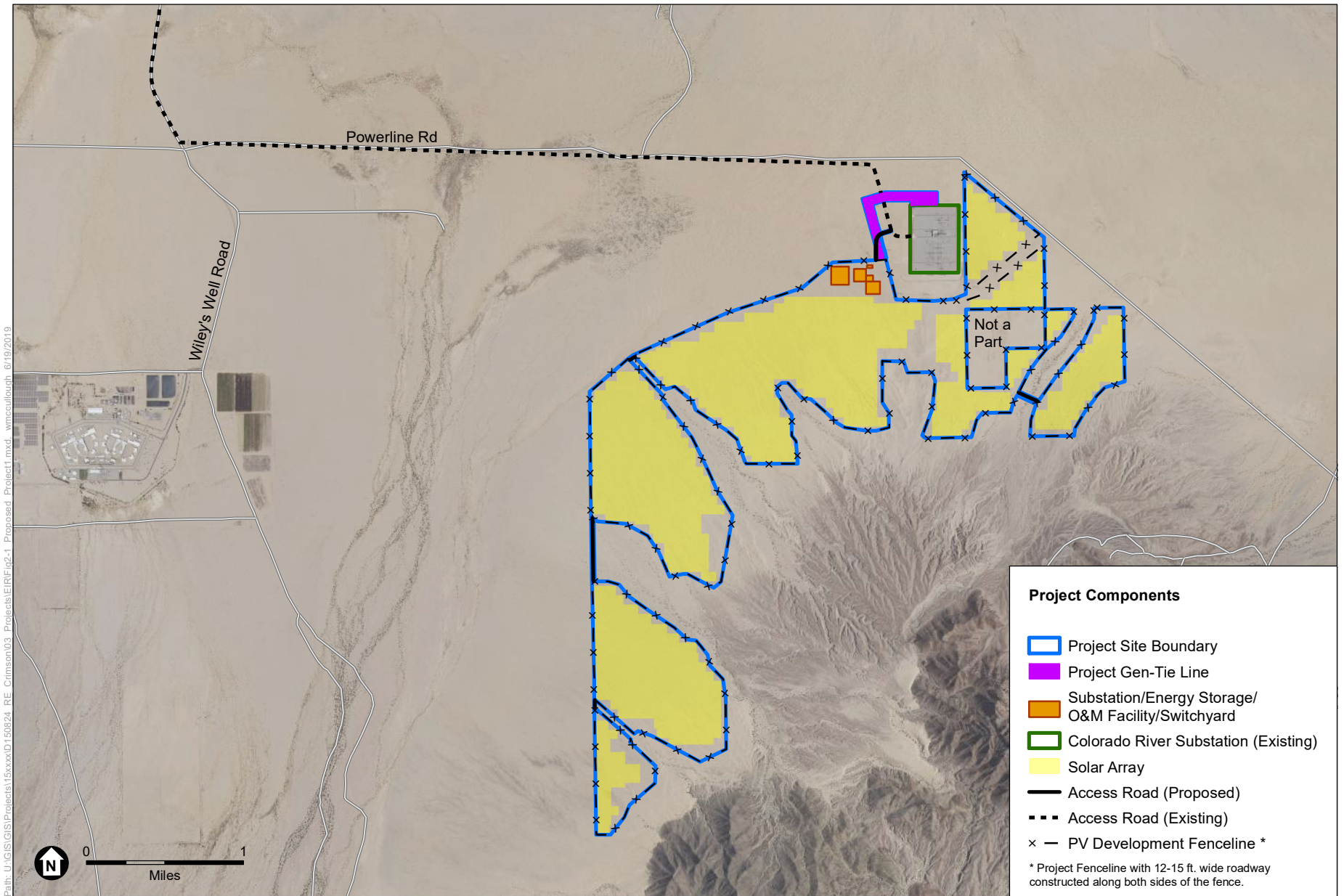
Recurrent Energy Crimson Solar EIS

Figure 1-4
CDCA Plan Multiple-Use Class Designations



SOURCE: ESRI, 2018; ESA, 2018.

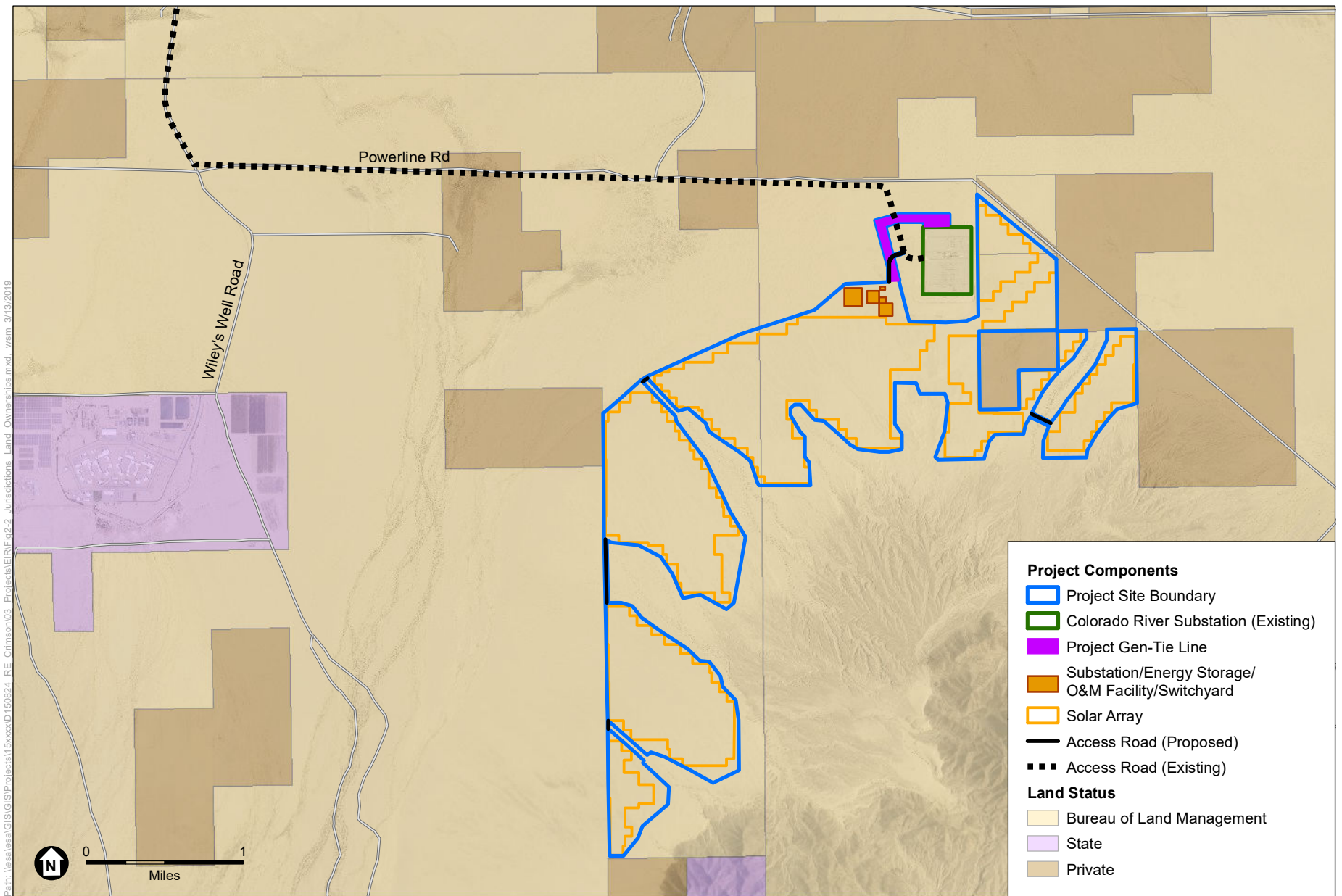
Crimson Solar Project PA/EIS/EIR



SOURCE: ESRI, 2018; ESA, 2018.

Crimson Solar Project PA/EIS/EIR

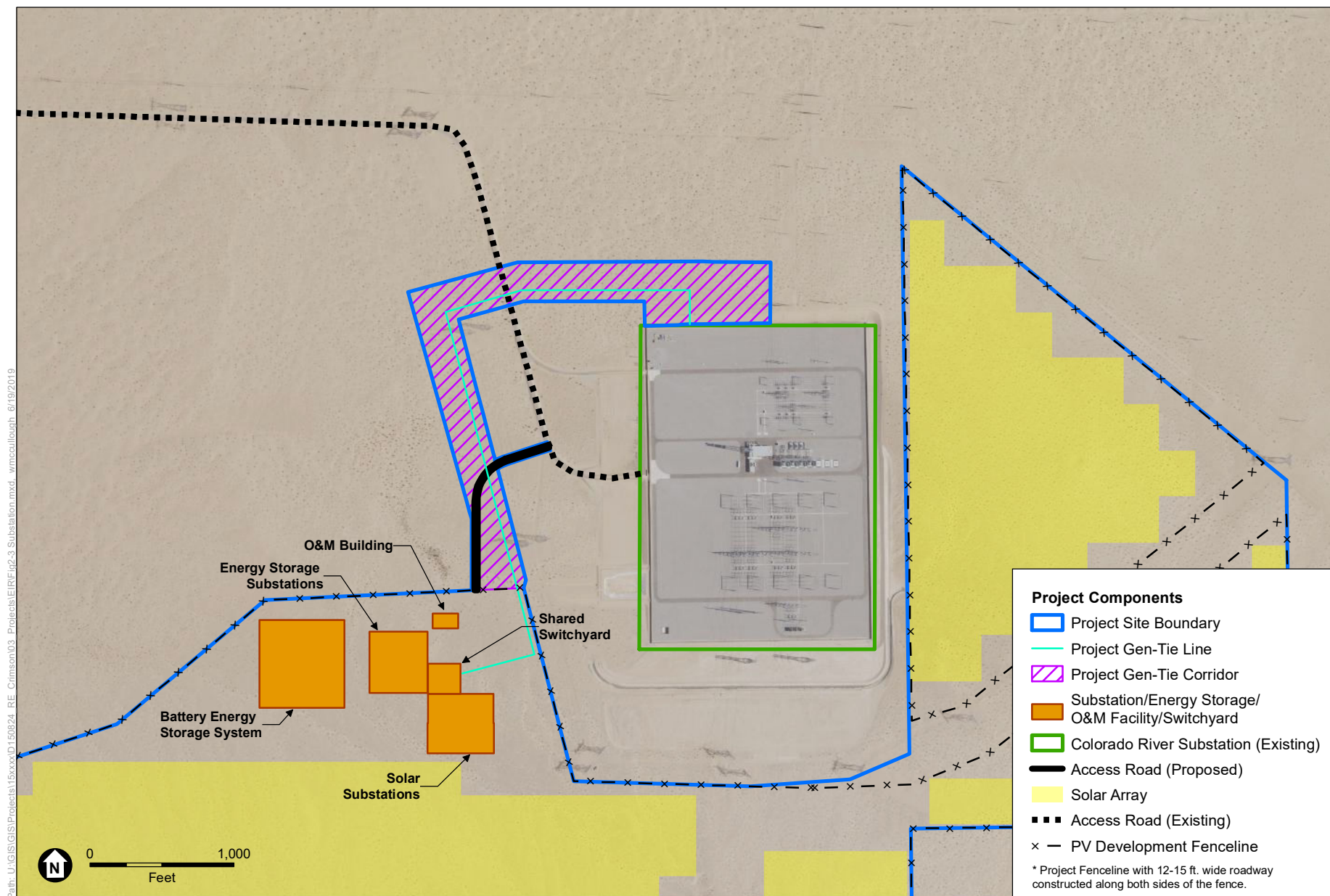
Figure 2-1
Proposed Project



SOURCE: ESRI, 2018; ESA, 2018.

Crimson Solar Project PA/EIS/EIR

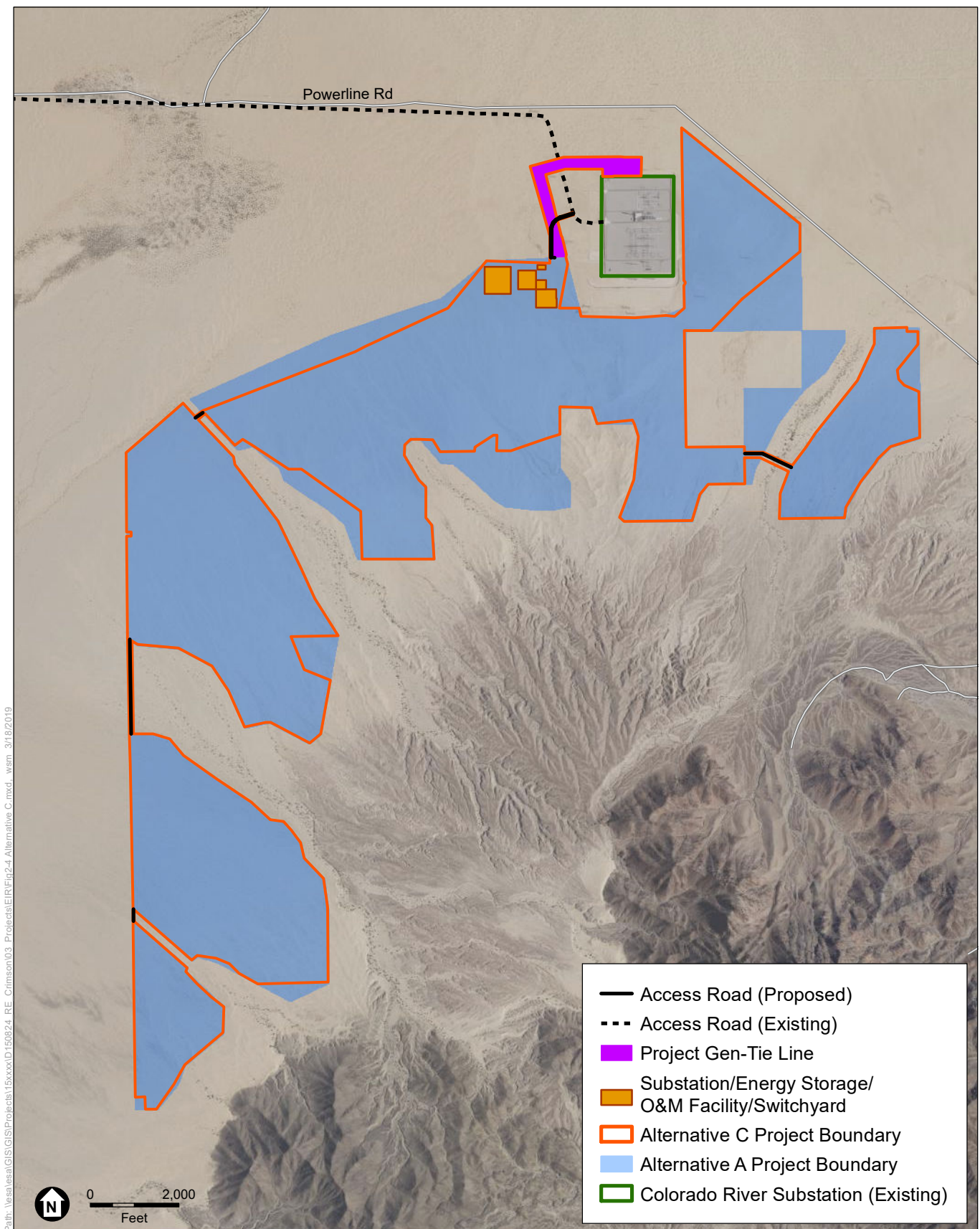
Figure 2-2
Jurisdictions and Land Ownership in the Project Vicinity



SOURCE: ESRI, 2018; ESA, 2018.

Crimson Solar Project PA/EIS/EIR

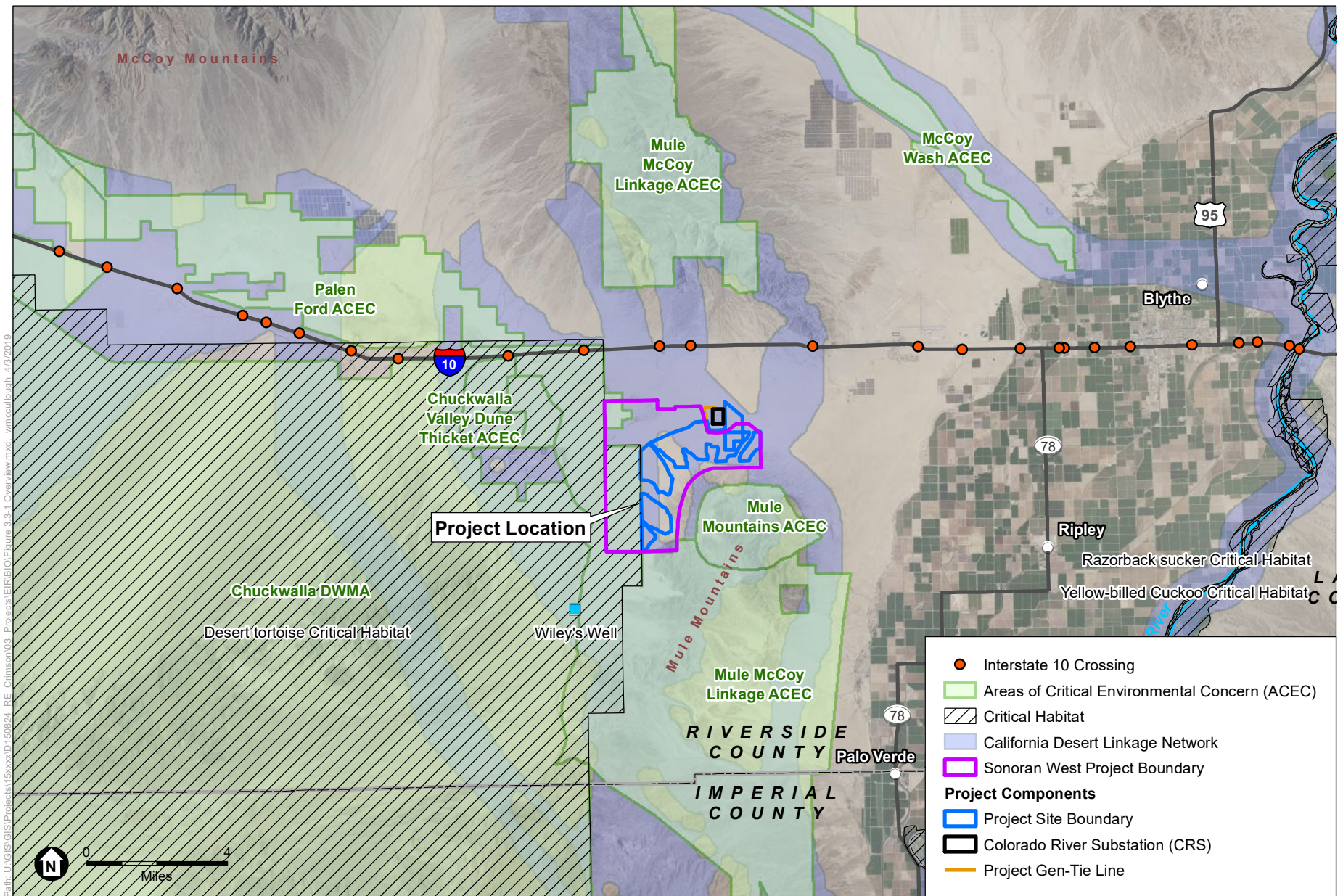
Figure 2-3
Colorado River Substation



SOURCE: ESRI, 2018; ESA, 2018.

Crimson Solar Project PA/EIS/EIR

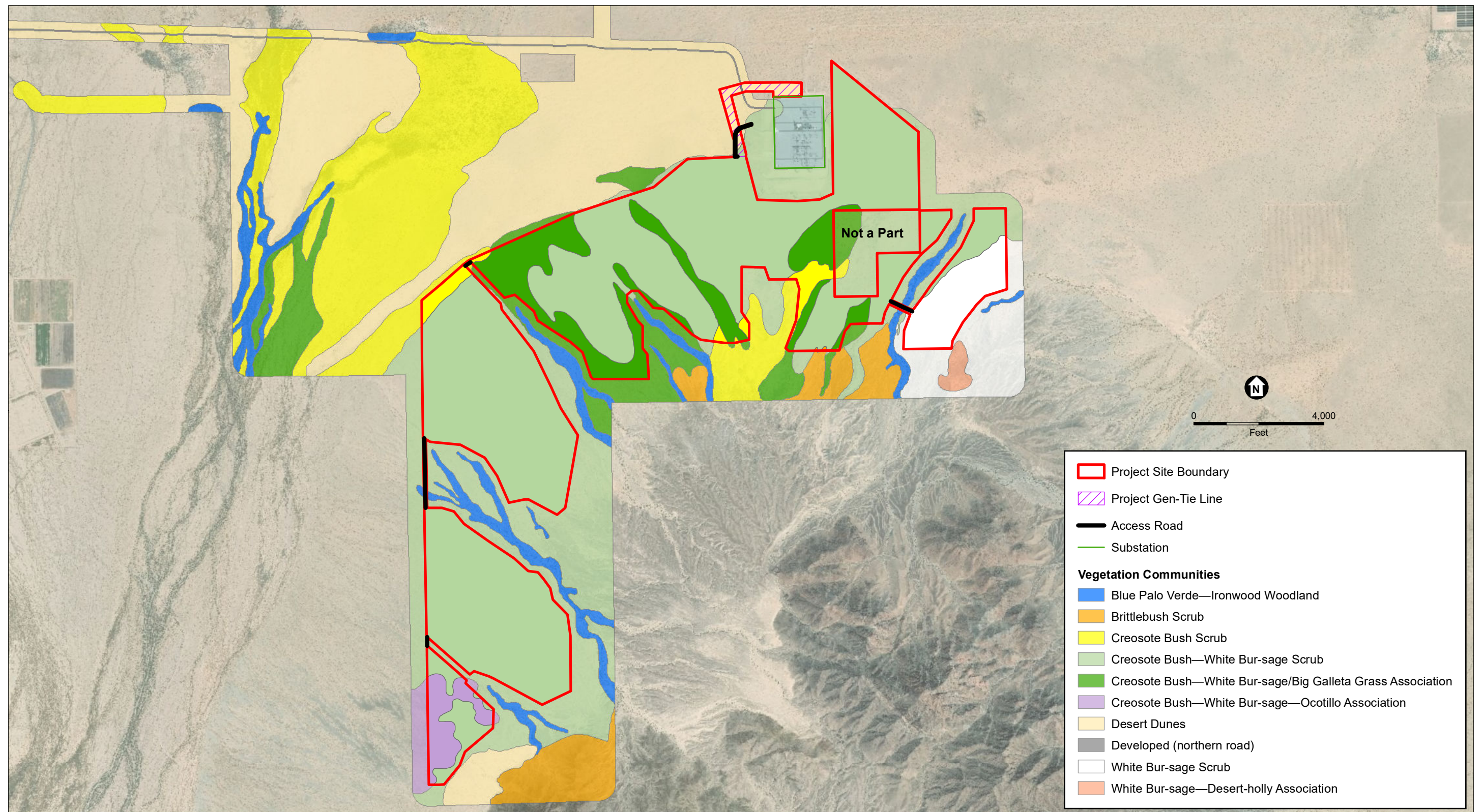
Figure 2-4
Alternative C



SOURCE: ESRI, 2018; ESA, 2018.

Crimson Solar Project PA/EIS/EIR

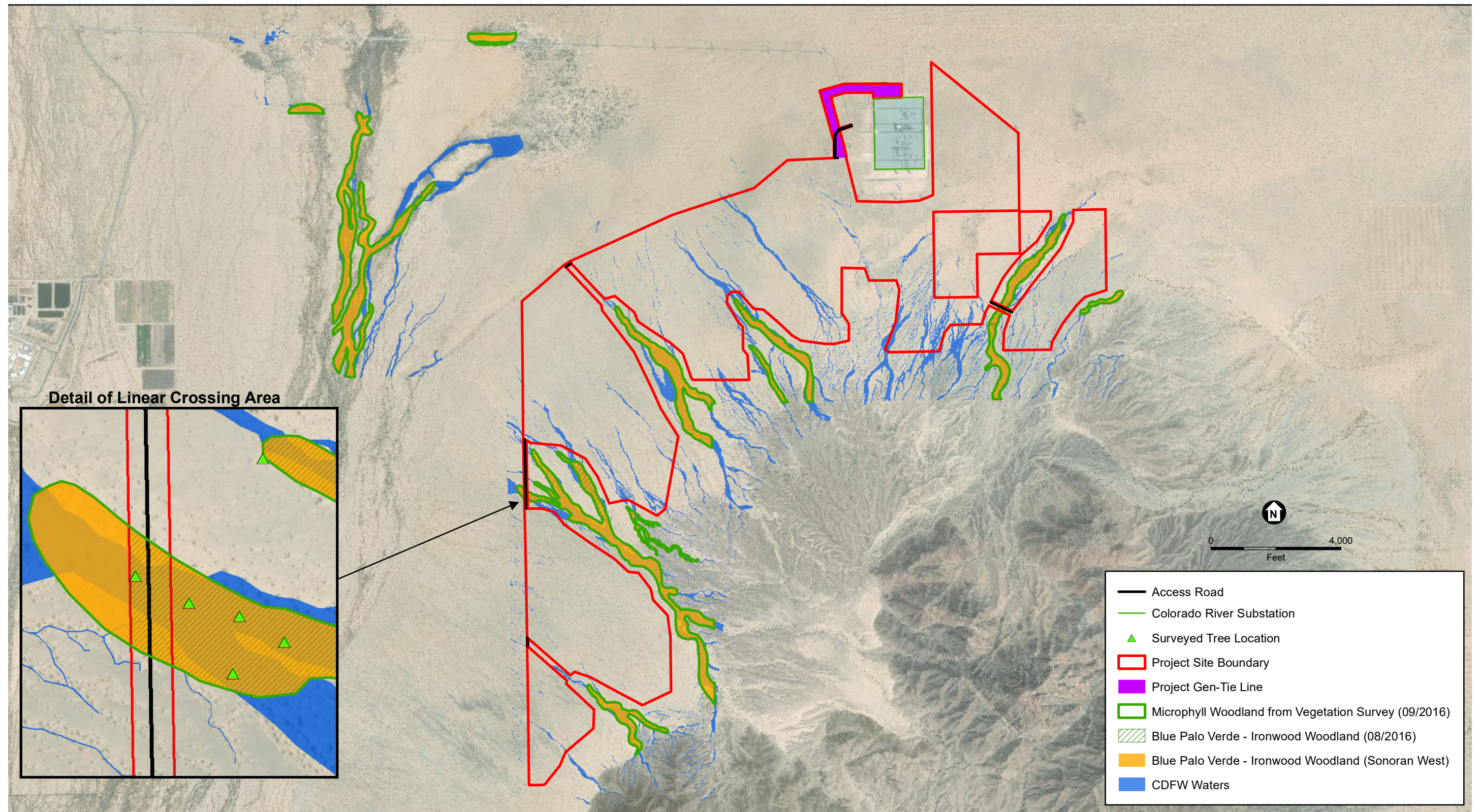
Figure 3.3-1
Regional Overview



SOURCE: AECOM

Crimson Solar Project PA/EIS/EIR

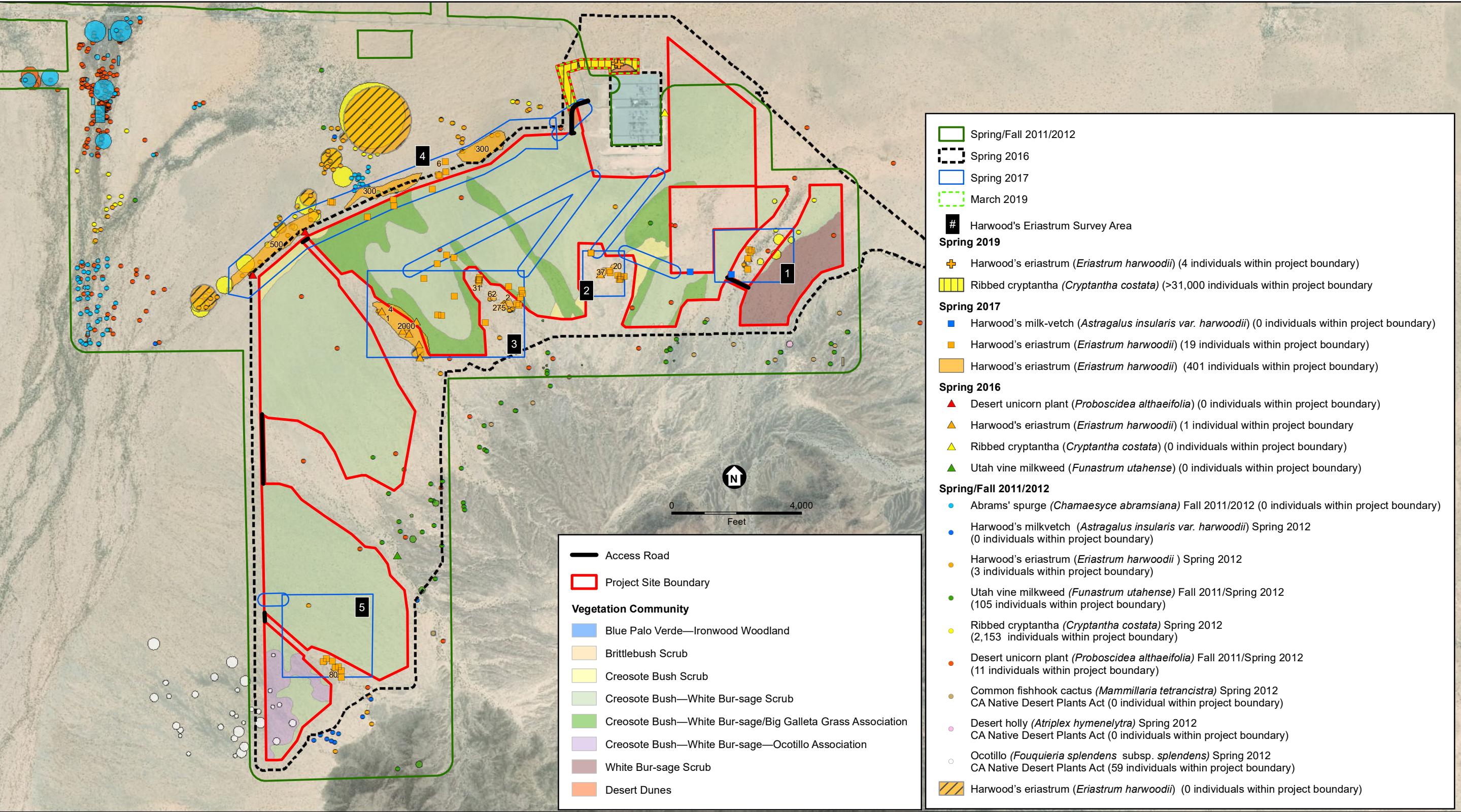
Figure 3.3-2
Vegetation Communities



SOURCE: AECOM

Crimson Solar Project PA/EIS/EIR

Figure 3.3-3
Jurisdictional Waters



SOURCE: AECOM

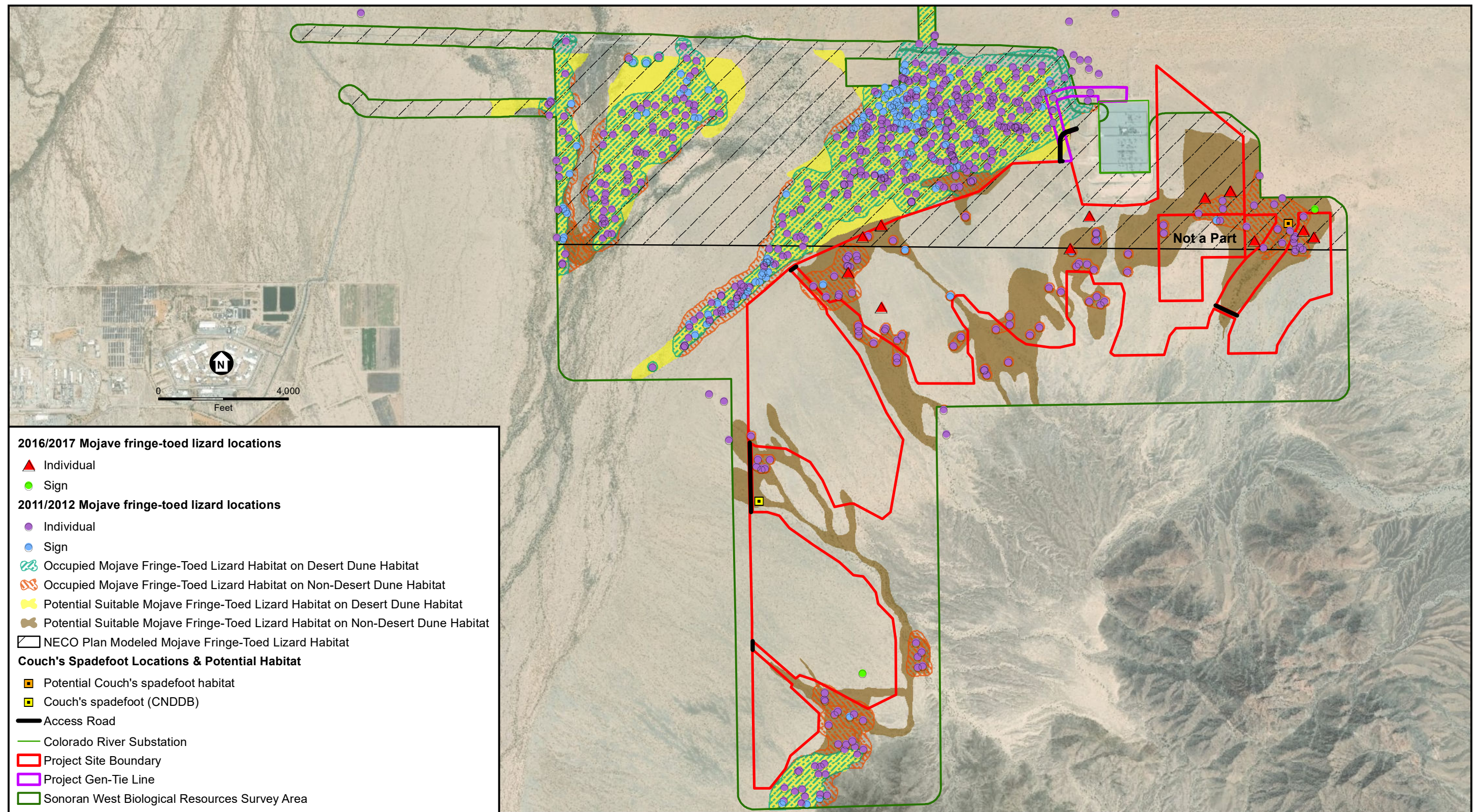


Notes:
Species occurrence numbers represent individuals located within the Crimson Solar Project Boundary. Additional individuals are shown within the previous proposed Sonoran West Boundary.

Populations covering more than 1,000 square meters are represented by a polygon; populations covering less than 1,000 square meters are represented by a standard point.

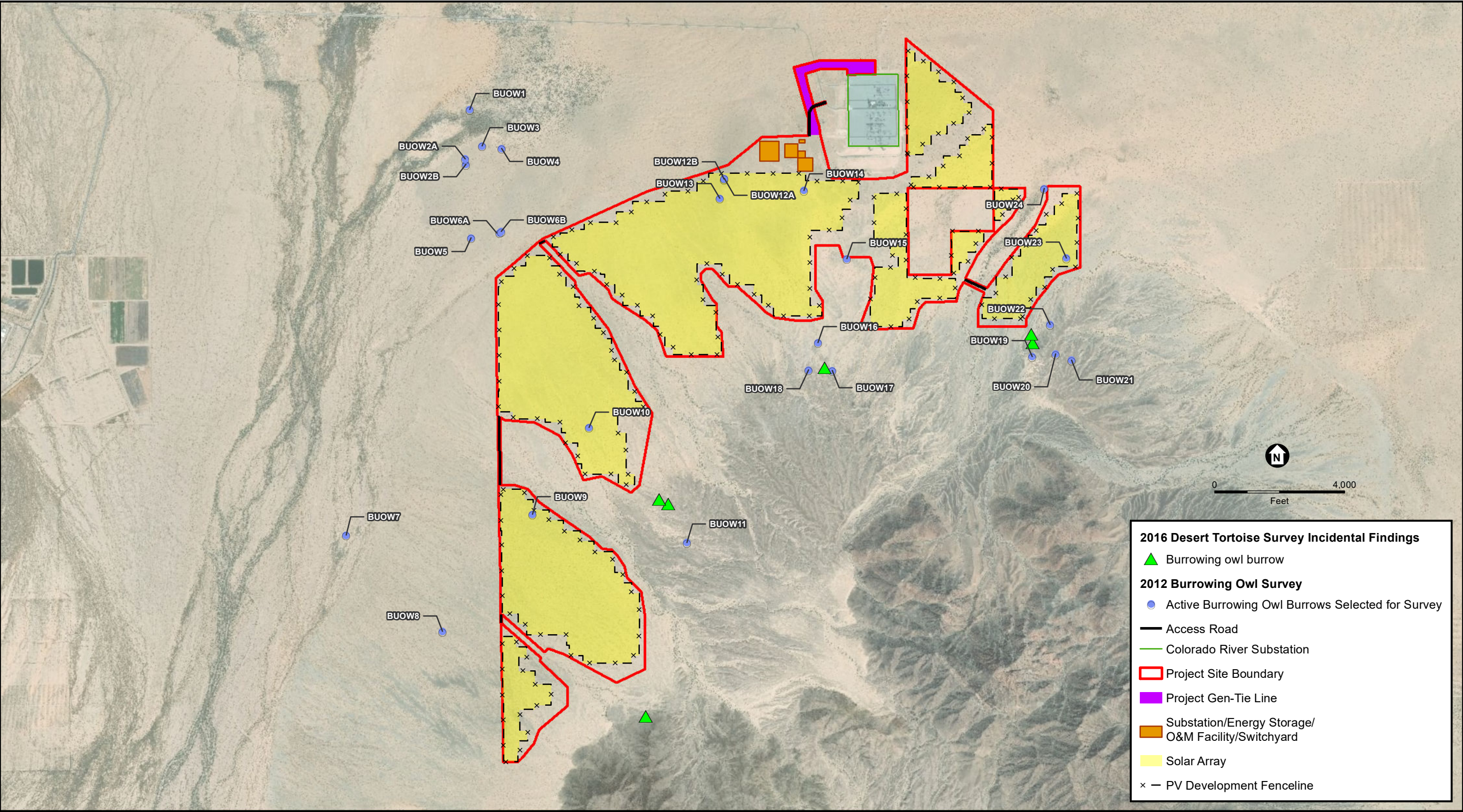
Crimson Solar Project PA/EIS/EIR

Figure 3.3-4
Special-Status Plant Species



SOURCE: AECOM

Crimson Solar Project PA/EIS/EIR

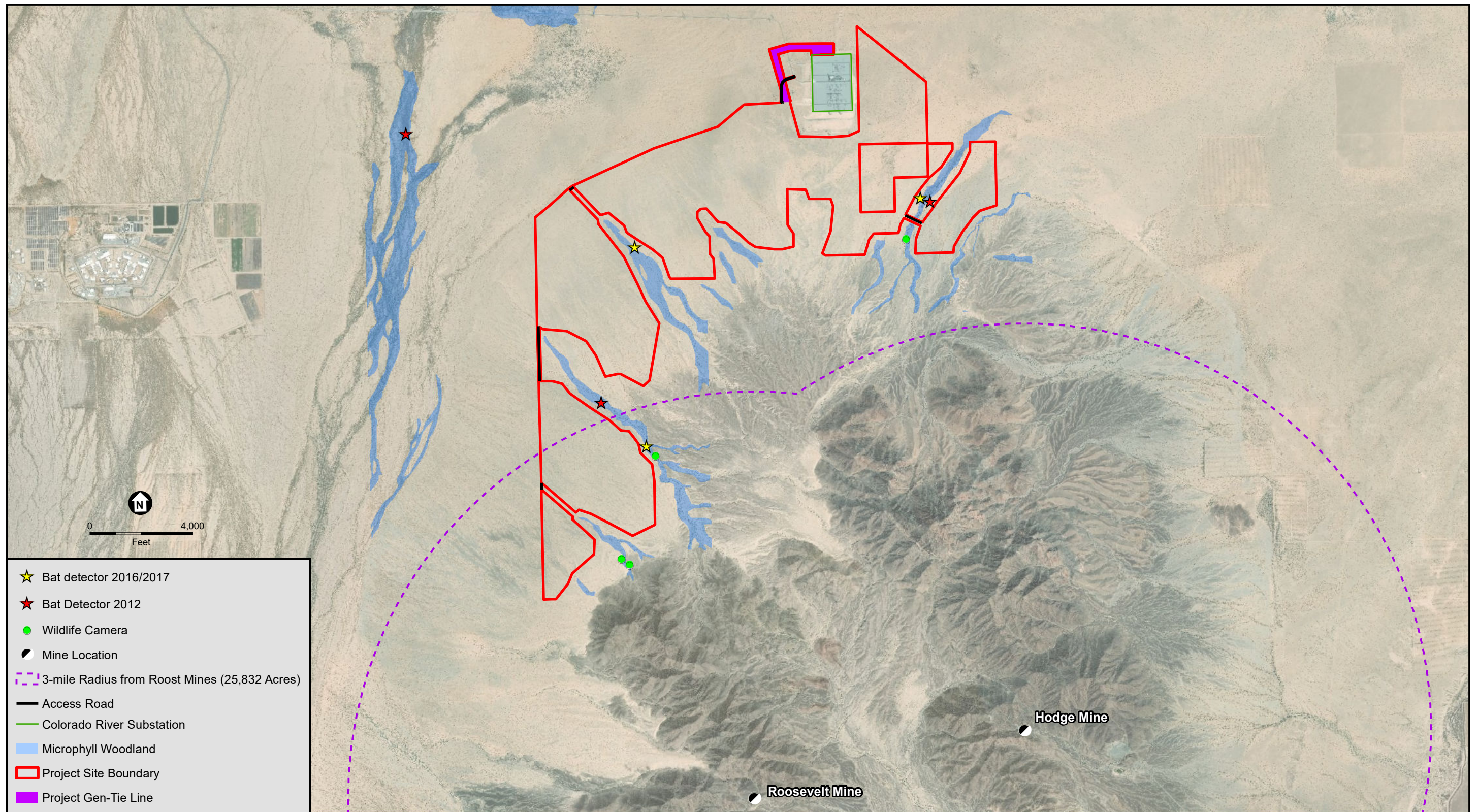


SOURCE: AECOM

Crimson Solar Project PA/EIS/EIR



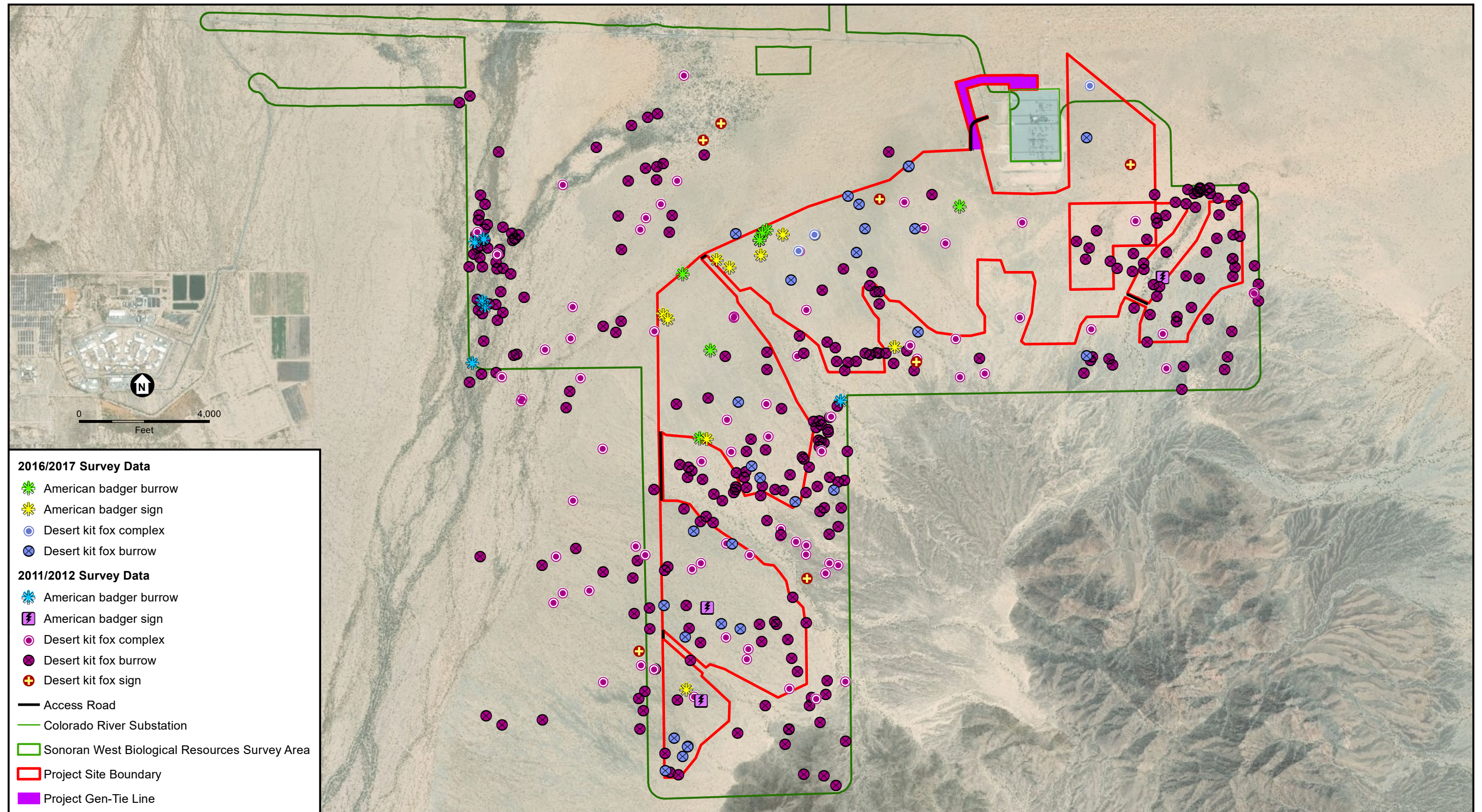
Figure 3.3-7
Burrowing Owl Occurrences



SOURCE: AECOM

Crimson Solar Project PA/EIS/EIR

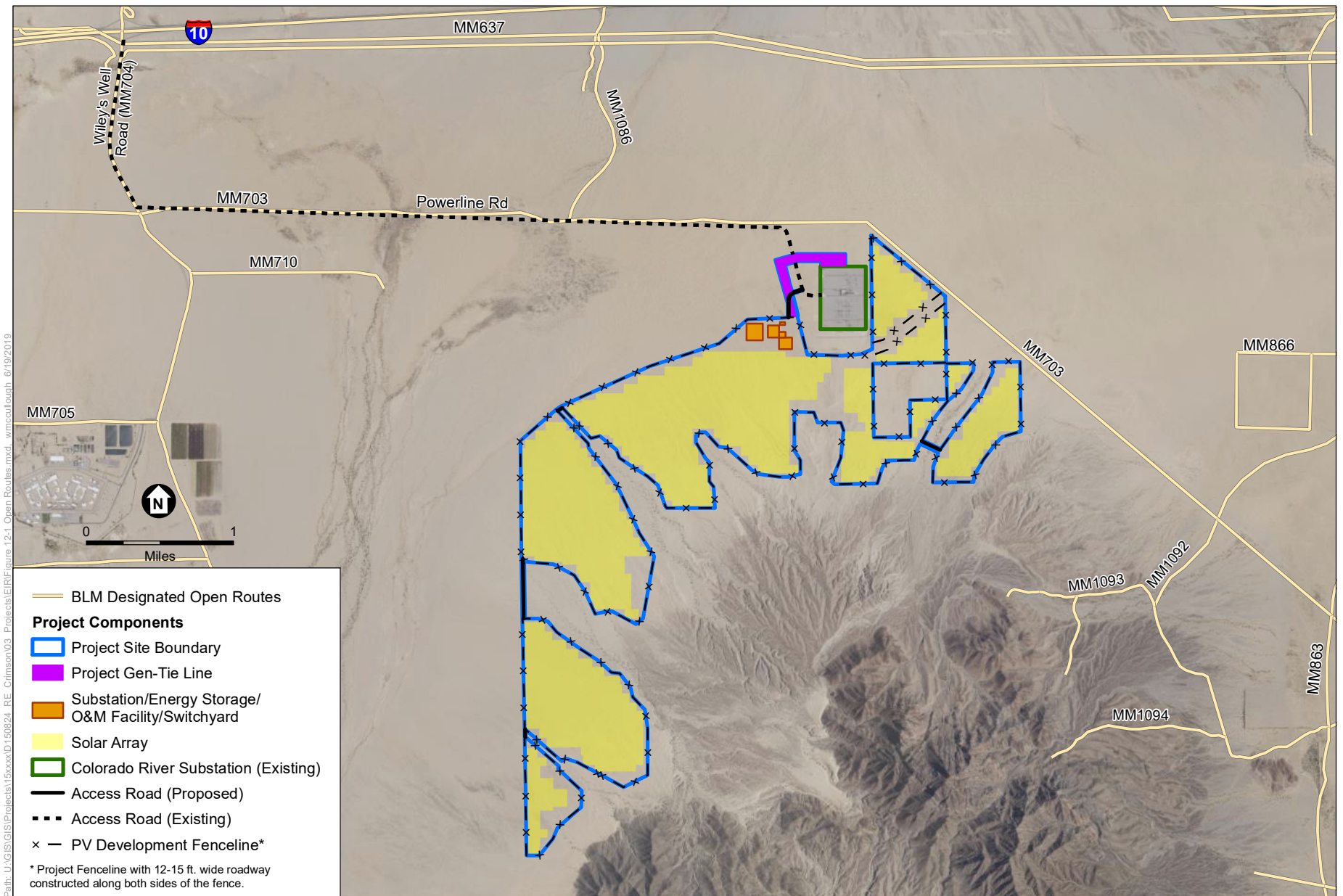
Figure 3.3-8
Bat and Wildlife Camera Surveys



SOURCE: AECOM

Crimson Solar Project PA/EIS/EIR

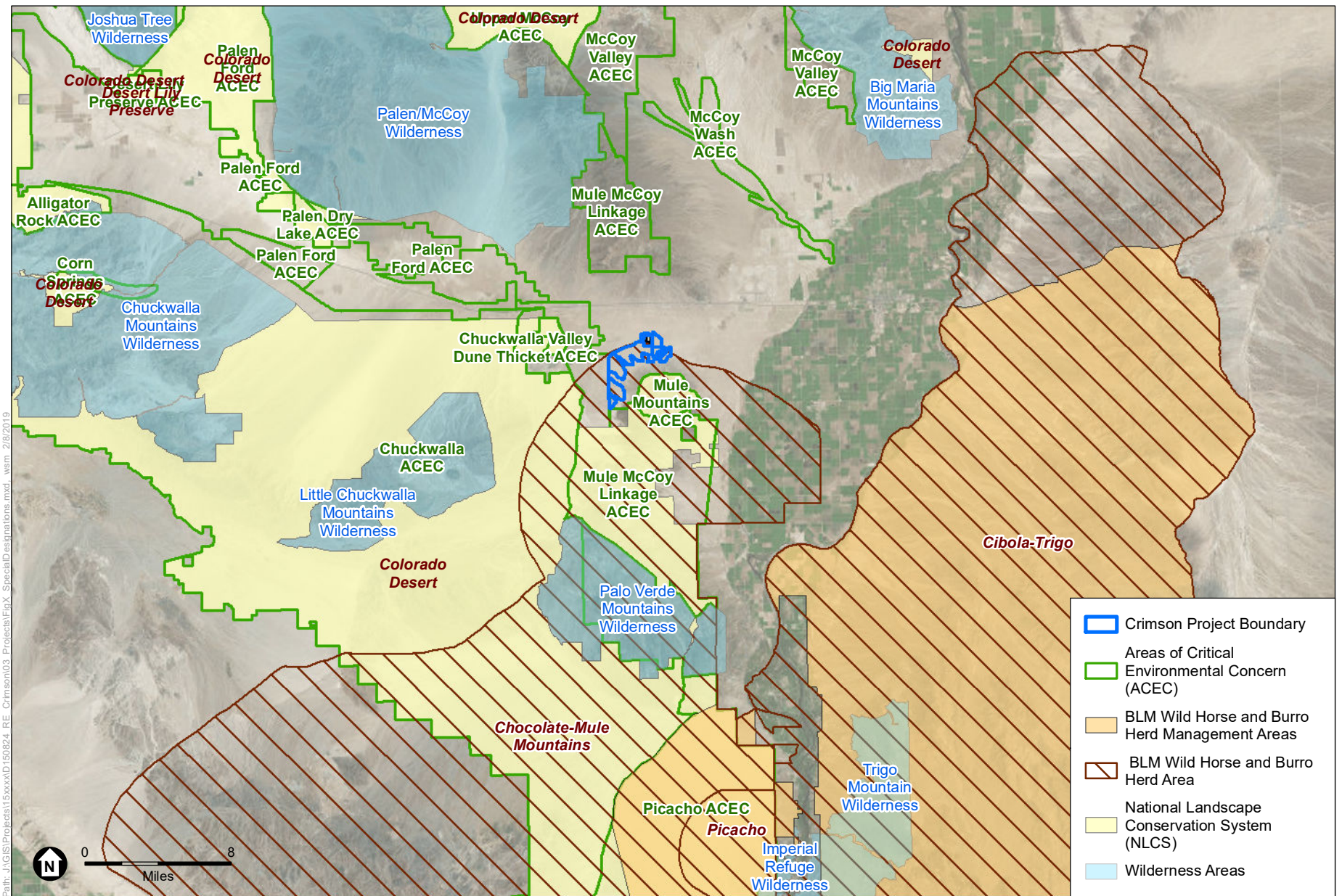
Figure 3.3-9
Desert Kit Fox and American Badger Occurrences



SOURCE: ESRI, 2018; ESA, 2018; BLM

Crimson Solar Project PA/EIS/EIR

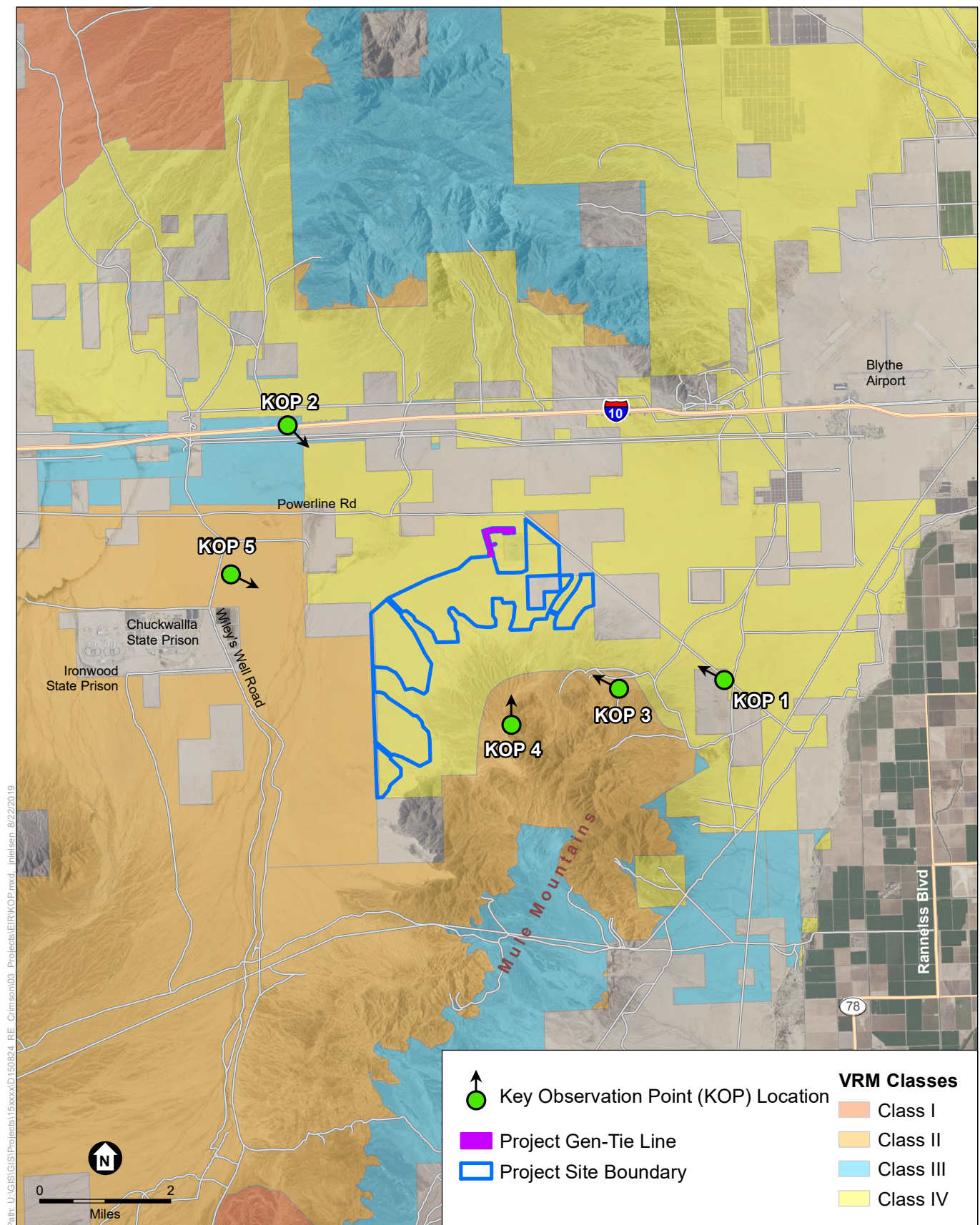
Figure 3.12-1
Open Routes



SOURCE: ESRI, 2018; BLM.

Recurrent Energy Crimson Solar EIS

Figure 3.14-1
Special Designations



SOURCE: AECOM, 2019

Crimson Solar Project PA/EIS/EIR

Figure 3.17-1
Key Observation Points



Existing Conditions



Simulation

SOURCE: AECOM, 2019

Crimson Solar Project PA/EIS/EIR

Figure 3.17-2
Existing Conditions and Simulation
Key Observation Point 1



Existing Conditions



Simulation

SOURCE: AECOM, 2019

Crimson Solar Project PA/EIS/EIR

Figure 3.17-3
Existing Conditions and Simulation
Key Observation Point 2



Existing Conditions



Simulation

SOURCE: AECOM, 2019

Crimson Solar Project PA/EIS/EIR

Figure 3.17-4
Existing Conditions and Simulation
Key Observation Point 3



Existing Conditions



Simulation

SOURCE: AECOM, 2019

Crimson Solar Project PA/EIS/EIR

Figure 3.17-5
Existing Conditions and Simulation
Key Observation Point 4



Existing Conditions

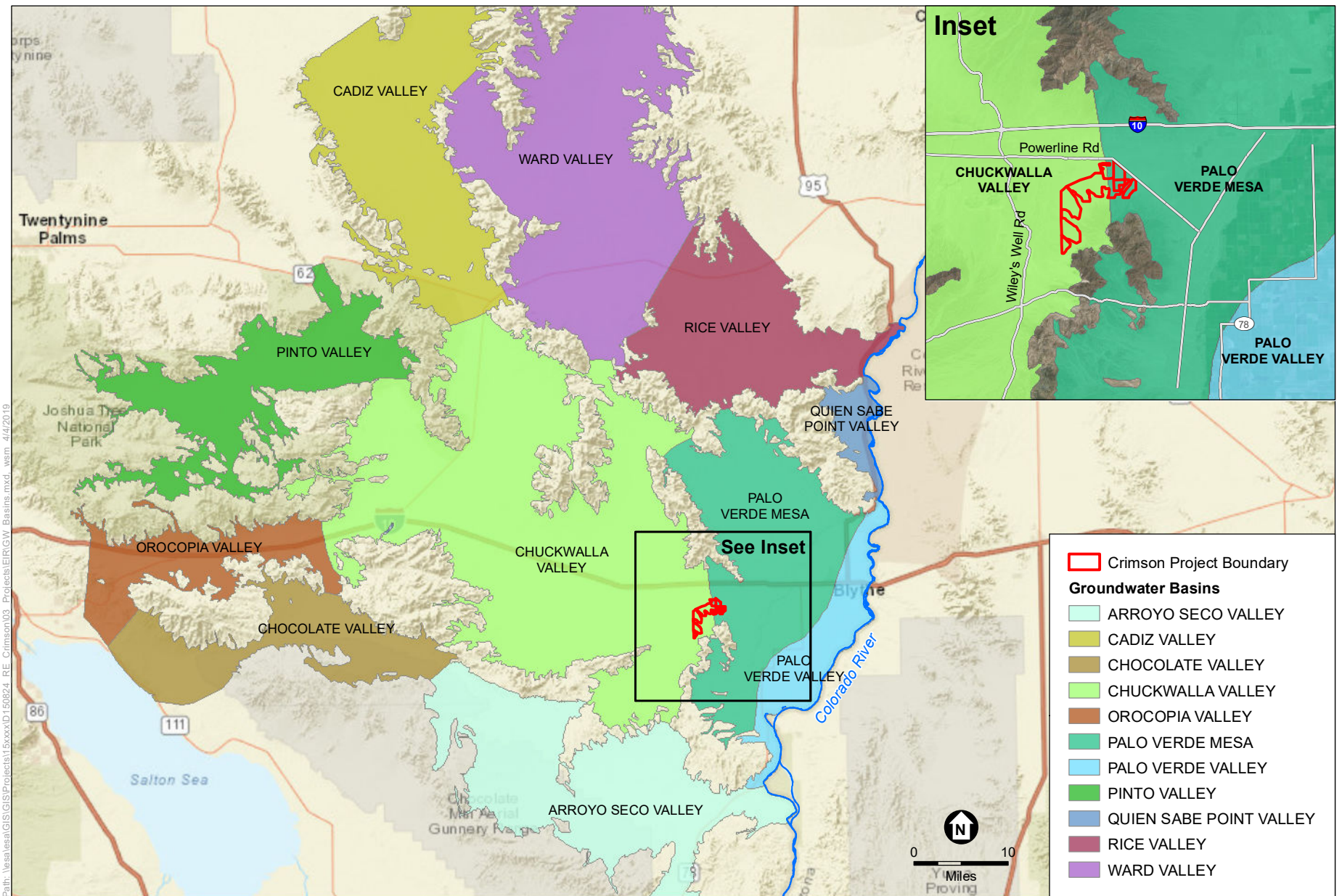


Simulation

SOURCE: AECOM, 2019

Crimson Solar Project PA/EIS/EIR

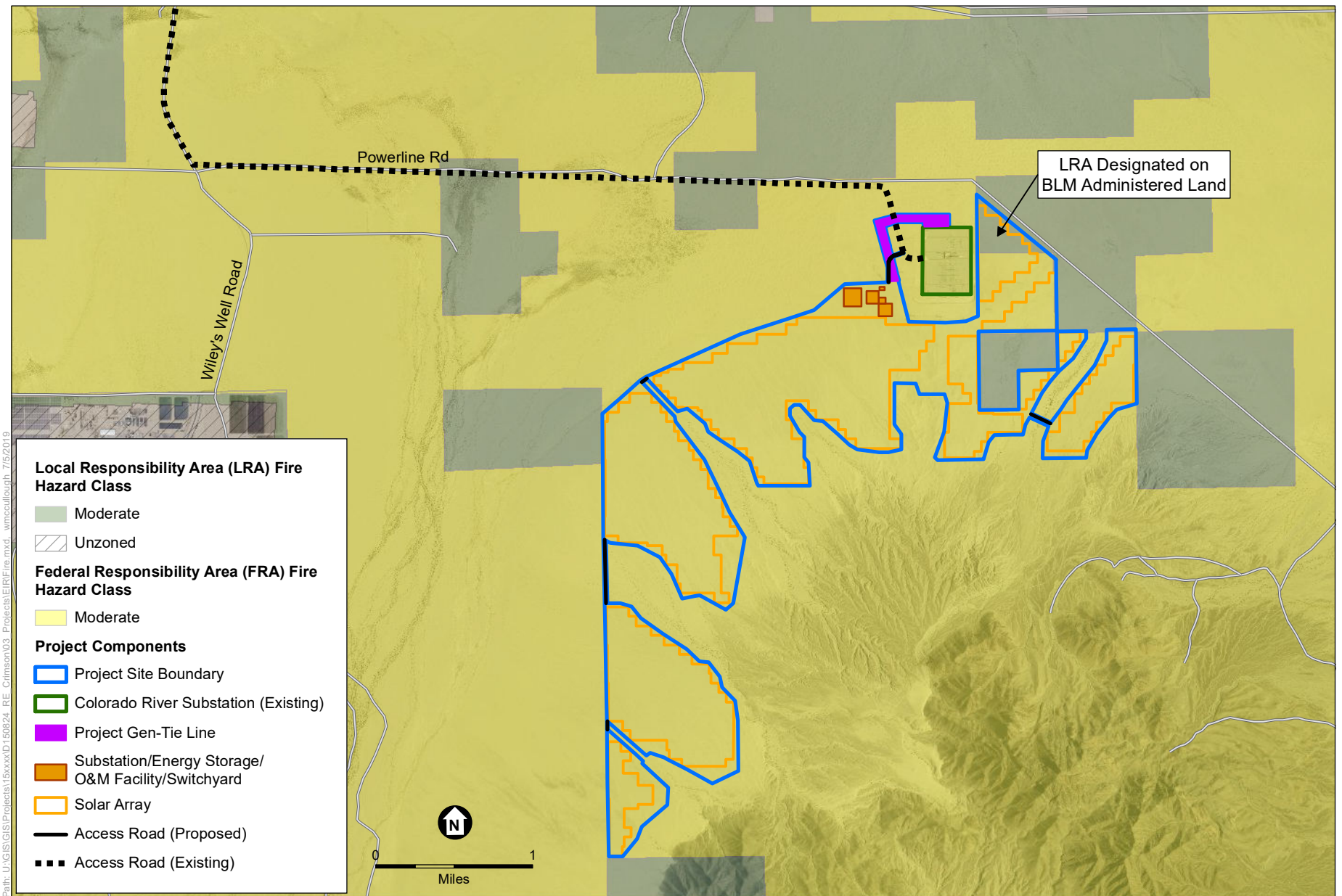
Figure 3.17-6
Existing Conditions and Simulation
Key Observation Point 5



SOURCE: DWR, 2015

Crimson Solar Project PA/EIS/EIR

Figure 3.18-1
Groundwater Basins



SOURCE: ESRI, 2018; ESA, 2018; CalFire, 2007

Crimson Solar Project PA/EIS/EIR

Figure 3.19-1
Fire Hazard Zones in the Project Vicinity

Appendix B

Mitigation Measures

APPENDIX B

Mitigation Measures

The lead agencies have developed mitigation measures to avoid or reduce potential adverse environmental effects associated with the Project and alternatives. The full text of the mitigation measures is provided in this appendix. These measures would be implemented during all appropriate phases of the Project, from initial ground breaking and construction, to operation and maintenance, and through closure and decommissioning. These measures refer to the “Project Owner” rather than the “Applicant” in anticipation of defining the responsibilities of Sonoran West Solar Holdings, LLC in the event that the Project is approved. For purposes of implementation of these measures, the Project Owner is defined as Sonoran West Solar Holdings, LLC, its successors and assigns, and/or its contractors.

For several of the mitigation measures presented here, the Applicant has submitted, and the Lead Agencies have reviewed, draft resource- or process-specific mitigation plans; in each such case, the draft plan is appended to the Draft PA/EIR/EIS. Where the Lead Agencies have determined that the draft plans submitted by the Applicant may not adequately avoid, minimize, or mitigate impacts, additional details to be incorporated into final mitigation plans are provided in mitigation measures. Based on the review process described in specific mitigation measures, the Applicant (or Project Owner) would revise draft plans as needed and submit them to the specified agencies for review, comment, and/or approval.

Seven mitigation measures require compensatory mitigation: BIO-18, BIO-19, BIO-20, BIO-26, BIO-28, BIO-29, and BIO-33. The CDCA Plan, as amended by the NECO Plan, identifies compensatory mitigation requirements for impacts to the Mojave desert tortoise and Mojave fringe-toed lizard. Additionally, BLM anticipates that the Biological Opinion to be prepared by USFWS will identify required compensatory mitigation to address impacts to the Mojave desert tortoise under the Endangered Species Act. CDFW has exercised its authority under the California Environmental Quality Act (CEQA) to require compensatory mitigation for loss of listed birds. The remaining measures have been considered and incorporated by BLM as part of California state laws, plans, and programs that require compensatory mitigation, in accordance with BLM Instruction Memorandum 2019-018.

Air Resources

AQ-1: Dust Control Plan. In the event that the Project Owner secures the necessary approvals for the Project and selects a construction contractor, the specific logistics for construction and operation of the Project can then be finalized, and it would at that time be practicable and feasible to develop a detailed Dust Control Plan for the Project. The Project Owner shall develop and implement a Dust Control Plan that describes the fugitive dust control measures that shall be implemented and monitored at all locations of proposed facility construction activities during operation and maintenance. The Project Owner shall submit the plan to MDAQMD and the County of Riverside for review and approval no less than 60 days prior to the start of construction. The Project Owner shall incorporate the plan into all contracts and contract specifications for construction work. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction and operation activities to such a degree that Project-generated visible fugitive dust plumes are prevented from leaving the Project site. The plan shall:

- Describe each active operation that may result in the generation of fugitive dust;
- Identify activities likely to be sources of fugitive dust, e.g., earth moving, storage piles, vehicular traffic; and

- Describe the control measures the Project Owner will apply to each of the sources identified. The descriptions shall be sufficiently detailed to demonstrate that the Project Owner is using the best available control measures required by the air quality districts and the County of Riverside.

A designated representative of the Project Owner shall submit documentation to BLM's Authorized Officer in Monthly Compliance Reports to demonstrate that visible fugitive dust plumes are prevented from leaving the Project site and to show that the Project Owner is adhering to all applicable rules, including, but not limited to, the following control measures:

- a. Visible speed limit signs shall be posted at the site entrance(s).
- b. No vehicle shall exceed 25 miles per hour (mph) on paved roads or 15 mph on unpaved roads. Speeds shall be reduced if visible dust emissions occur.
- c. Street sweeping and trackout devices shall be used at the construction site. If visible soil material is carried into adjacent public streets, sweep streets daily or wash trucks and equipment before entering public streets.
- d. Excavation, spoils, access roads, storage piles, and other sources of fugitive dust (parking areas, staging areas, other) shall be frequently watered or stabilized if construction activity causes persistent visible emissions of fugitive dust beyond the work area.
- e. Apply water or chemical soil stabilizers to form and maintain a crust on inactive construction areas (disturbed lands that are unused for four consecutive days).
- f. Cover stockpiles and suspend construction work when winds exceed 25 mph.
- g. Stockpiles not in active use shall be covered at all times regardless of ambient wind speed.
- h. Pre-water soils prior to clearing and trenching.
- i. Pre-moisten dirt, sand, and loose materials prior to transport, import, and export.
- j. Cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads.
- k. Dedicate a water truck or high-capacity hose to every soil screening operation.
- l. Minimize drop height of material through screening equipment.
- m. Reduce the amount of disturbed area where possible.
- n. Plant vegetative ground cover in disturbed areas as soon as possible following construction activities.
- o. Installing wind fencing or the equivalent for all perimeter fencing, to a minimum of four feet of height or the top of all perimeter fencing. This wind fencing requirement may be superseded by local ordinance, rule or project-specific biological mitigation prohibiting wind fencing.
- p. Installing the following signage, which shall be erected not later than the commencement of construction: A minimum 48 inch high by 96 inch wide sign containing the following shall be located within 50 feet of each project site entrance, meeting the specified minimum text height, black text on white background, on one inch A/C laminated plywood board, with the lower edge between six and seven feet above grade, with the contact name of a responsible official for the site and a local or toll-free number that is accessible 24 hours per day:

“[Site Name] {four inch text}
[Project Name/Project Number] {four inch text}
IF YOU SEE DUST COMING FROM {four inch text}
THIS PROJECT CALL: {four inch text}
[Contact Name], PHONE NUMBER XXX-XXXX {six inch text}
If you do not receive a response, Please Call {three inch text}
The MDAQMD at 1-800-635-4617 {three inch text}”

The Project Owner or its designated representative shall obtain approval from the MDAQMD and the County of Riverside prior to any deviations from fugitive dust control measures specified in the approved Dust Control Plan. A justification statement used to explain the technical and safety reason(s) that preclude the use of required fugitive dust control measures shall be submitted to the appropriate agency for review. The provisions of the Dust Control Plan shall also apply to project decommissioning activities.

- AQ-2: **Diesel Engine Standards.** The construction contractor shall use off-road construction diesel engines that meet the Tier 4 Final California Emissions Standards, unless it is infeasible for all off-road equipment to have Tier 4-compliant engines because such an engine is not available for a particular type of off-road equipment. In such circumstances, the BLM AO will allow the use of Tier 4 Interim or Tier 3 engines on a case-by-case basis when the contractor has documented that no Tier 4 Final equipment, or emissions equivalent retrofit equipment, is available for a particular equipment type that must be used to complete construction. Documentation shall consist of signed written statements from at least two local construction equipment rental firms. In addition, all on-highway vehicles used for construction of the Project that are under direct control of the Project Owner or construction contractor shall meet or exceed the USEPA and California Air Resource Board exhaust emissions standards for model year 2014, including the use of newer heavy-duty highway compression-ignition engines (e.g., long-haul trucks, refuse haulers, shuttle buses, etc., that are over 19,500 pounds).
- AQ-3: **Idling Policy.** In order to ensure that idling time for on road vehicles with a gross vehicular weight rating of 10,000 pounds or greater does not exceed the 5-minute limit established in Title 13 CCR Section 2485, and that idling time for off-road engines does not exceed the 5-minute limit established in Title 13 CCR Section 2449(d)(3), the Project Owner and/or its construction contractor(s) shall prepare and implement a written idling policy and distribute it to all equipment operators. The idling policy for the 5-minute idling limit shall cover all on road vehicles (regardless of gross vehicular weight rating) and shall further require that for all diesel-powered off-road engines, the idling limit is reduced to 2 minutes, while maintaining the exceptions specified in Title 13 CCR Section 2449(d)(3). Clear signage of these requirements shall be posted for workers at the entrances to the Project Site.
- AQ-4: **Construction Equipment Maintenance.** The construction contractor shall maintain construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- AQ-5: Thirty days prior to commencement of construction, the Project Owner or construction contractor shall notify the MDAQMD of the expected construction phases of the Project, so it can consider the multiple projects that may be undergoing construction at the same time.

Biological Resources

General Measures

- AQ-1: **Dust Control Plan** (see Air Resources section)
- BIO-1: **Designated Biologist(s).** Prior to issuance of the Notice to Proceed, the Project proponent shall designate at least one Designated Biologist (DB) to the Project.

DB Approval: The DB shall be approved by the BLM, USFWS, and CDFW, hereafter referred to as the Resource Agencies. The Project proponent shall submit the resume of the proposed DB(s) with at least three references and contact information to each of the Resource Agencies. If the DB is not also a USFWS and CDFW Authorized Biologist (AB) for desert tortoise, a separate AB shall be approved by the Resource Agencies and be present onsite for measures associated with the federal- and state-listed desert tortoise. AB qualifications and responsibilities are detailed in BIO-21.

DB Responsibilities: The Project proponent shall ensure that the DB(s) performs the activities described below during all pre-construction site mobilization activities, construction-related ground-disturbance, grading, boring, trenching, commissioning, or other activities that may impact biological resources. The DB may be assisted by the approved Biological Monitor(s) (BM(s)) but shall remain the contact for the Project proponent and the Resource Agencies.

- a) The DB shall be responsible for overseeing monitoring and compliance with protective measures for the biological resources. Approval from the CDFW and the USFWS would be necessary for the monitoring or handling of federally and state listed wildlife species.
- b) The DB shall maintain communications with the appropriate personnel (project manager, resident engineer) to ensure that issues relating to biological resources are appropriately and lawfully managed. The DB shall also be present to verify compliance with all conservation measures.
- c) The DB shall submit reports that document compliance with biological resources mitigation, minimization, and avoidance measures to the Resource Agencies as described under BIO-3.
- d) The DB shall be onsite during all vegetation clearing and grubbing during Project construction habitat to be impacted.
- e) The DB may present the Worker Environmental Awareness Training (WEAP) described under BIO-19.
- f) The DB shall ensure proper implementation of protective measures developed in coordination with USFWS and CDFW to avoid all impacts to all encountered sensitive species as well as other nesting birds.
- g) The DB shall immediately notify the resident engineer to halt work, if necessary, and coordinate with the Resource Agencies to ensure the proper implementation of species and habitat protection measures.
- h) The DB shall report any breach of the conservation measures within 24 hours of its occurrence to the Resource Agencies.

BIO-2: Biological Monitors. The Project Owner shall employ BMs to support Project compliance activities as needed.

BM Approval: The BM(s) shall be approved by the BLM, USFWS, and CDFW, hereafter referred to as the Resource Agencies. The Project proponent or DB shall submit the resumes, at least three references, and contact information of the proposed BMs to the Resource Agencies. The resumes shall demonstrate, to the satisfaction of both agencies, the appropriate education and experience to accomplish the assigned biological resource tasks.

BM Responsibilities: BMs shall assist in conducting surveys and in monitoring of site mobilization activities and all vegetation and ground-disturbing activities, including pre-construction phase activities. BMs shall not be allowed to handle desert tortoise without direct oversight of an AB and approval from Resource Agencies.

BIO-3: Biological Resources Mitigation, Monitoring, and Reporting Plan (BRMMRP). Prior to the issuance of the Notice to Proceed, a BRMMRP shall be developed for review and approval by the BLM and CDFW and part of the issuance of the ROW Grant. The BRMMRP shall provide a matrix to document implementation and monitor effectiveness of all biological mitigation measures. The BRMMRP shall incorporate all EIS/EIR mitigation measures, including measures included in resource management plans, and all permit-required mitigation. The BRMMRP shall ensure that all measures intended to avoid or reduce impacts are appropriately implemented, documented, and reported to the applicable agencies.

During construction activities, quarterly and final compliance reports shall be provided to the Resource Agencies documenting the effectiveness of mitigation measures, level of take associated with the Project, and practicality of the protection measures that are in place and making recommendations for modifying the measures to enhance species protection, as needed. The report shall also provide information on the overall biological resources-related activities conducted, including the worker awareness training, clearance/pre-activity surveys, monitoring activities, and any observed desert tortoises, including injuries and fatalities. Biological issues also shall be covered in the ongoing compliance reporting required by the BLM.

- BIO-4: Delineation of Work Areas.** Prior to initiation of construction, the Project Proponent shall ensure that the anticipated impact zones, including staging areas, equipment access, and disposal or temporary placement of spoils, are delineated with stakes and flagging to avoid natural resources. No construction-related activities shall occur outside of the designated impact area (i.e., Project site). Staging, stockpiling, and materials storage areas shall be delineated as described under BIO-5.
- BIO-5: Staging, Stockpiling, and Materials Storage.** During construction, the Project proponent shall ensure that all construction materials, staging, employee parking, storage, dispensing, fueling, and maintenance activities are located in upland areas outside of sensitive habitat and DDWW, and that measures, as specified in the Drainage, Erosion, and Sediment Control Plan (Appendix U) are taken to prevent any potential runoff from entering waters of the State. Staging areas shall be located within permanent impact areas or previously disturbed sites within the Project site. Spoils shall be stockpiled only in areas subject to grading and disturbance and shall be placed to minimize impacts to native vegetation.
- BIO-6: Vehicle Access and Speed Limits.** During construction, personnel shall only access the site via Powerline Road and shall maintain the posted speed limit of 25 mph. Speed limits on roads or anywhere within the Project site shall not exceed 15 mph.
- Cross-country vehicle and equipment use outside of the designated Project site (including the gen-tie line) and access roads shall be prohibited. All vehicles passing or turning around shall do so within the designated Project site and access roads.
- During operations, all vehicles and site access shall remain on designated Project roads. No off-road travel shall occur. To minimize the likelihood for vehicle strikes of wildlife species a speed limit of 25 miles per hour shall be established for travel along Powerline Road. Speed limits shall be clearly marked by the proponent, and workers shall be made aware of these limits and the penalties authorized for exceeding them.
- BIO-7: Equipment Parking and Storage.** During construction, parking and storage of Project-related equipment and vehicles shall occur within the desert tortoise-exclusion fencing. Anytime a vehicle or construction equipment is parked in unfenced desert tortoise habitat, the ground under the vehicle shall be inspected for the presence of desert tortoise before the vehicle is moved. This inspection shall involve both the front and rear tires, in front of each tire, and behind each tire. If a desert tortoise is observed, it shall be left to move on its own. If it does not move within 15 minutes, the AB, or BM under the direct supervision of an AB, shall remove and relocate the desert tortoise to a safe location.
- BIO-8: Hazardous Spills.** During construction and operations, all vehicles and equipment shall be in proper working condition to ensure that there is no potential for releases or spills of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The DB shall be informed of any hazardous spills within 24 hours. Hazardous spills shall be immediately cleaned up according to the specifications established by the BLM California Hazardous Materials Specialist and the contaminated soil shall be properly disposed of at a hazardous waste facility permitted by the California Department of Toxic Substance Control. Servicing of construction equipment shall only take place in designated areas or offsite. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

Fueling of equipment shall take place within existing paved roads and not within 50 feet of washes or native desert habitats. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary before equipment use may resume.

- BIO-9: **Prevent Ponding.** During construction, a DB, AB, or BM shall patrol construction watering areas to ensure that water does not puddle for extended periods of time (generally several hours) and thereby attract desert tortoise, Couch's spadefoot, common ravens, and other wildlife to the site. The Project Owner will avoid diverting water to soils of soil series that the NRCS has determined are frequent ponding sites, as specified in the preliminary NRCS Riverside East soil survey information provided by the NRCS Victorville Soil Survey Office for the project site. Should extended puddling be observed, the DB, AB, or BM shall instruct the construction crew to cease watering within that location until the area has dried and implement re-grading or other measure to prevent extended puddling from recurring.
- BIO-10: **Debris and Trash Disposal.** During construction and operations, all non-hazardous spoils, trash, and debris shall be removed by the construction contractor offsite as-needed to a solid waste disposal facility permitted by the California Department of Resources Recycling and Recovery (CalRecycle). Non-hazardous spoils and debris (not including food items) shall be stored within the Project site until removal and protected from dispersal by wind and water erosion. Trash and food items shall be contained in closed containers at all times and removed daily to reduce the attractiveness to opportunistic predators such as common ravens, coyotes, desert kit foxes, and other predators that may prey on sensitive species.
- BIO-11: **Pets and Firearms.** During construction and operations, workers shall be prohibited from bringing pets (except service dogs) and firearms (except those in possession of authorized security personnel or local, state, or federal law enforcement officials) to the site.
- BIO-12: **Wildlife Entrapment Avoidance.** During construction and operations, the following shall be implemented:
- a. **Backfill Trenches.** At the end of each workday, the DB or BM shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations), both outside and within the area fenced with desert tortoise exclusion fencing, have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise-exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically throughout the day, at the end of each workday and at the beginning of each day by the DB or a BM. Should a tortoise or other wildlife become trapped, an AB shall remove and relocate the individual as described in the Desert Tortoise Relocation/Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.
 - b. **Avoid Entrapment of Desert Tortoise and/or Burrowing Owl.** All construction pipes, culverts, or similar structures with a diameter greater than 3 inches, stored less than 8 inches aboveground for one or more nights, shall be inspected for any wildlife before the material is moved, buried or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks.
- BIO-13: **Lighting.** During construction, if construction activities occur at night, all Project lighting (e.g., staging areas, equipment storage sites, roadway) shall be directed downward onto the roadway or construction site and away from sensitive habitat. Light glare shields shall also be used to reduce the extent of illumination into adjoining areas and above into night skies.

During operations, the Project's lighting system shall provide the minimum illumination required to meet safety and security objectives and shall be oriented to minimize additional illumination in areas not pertinent to the facility. Project design shall include the following specific lighting features:

- 1) No permanent lights shall be installed within sensitive habitat.
- 2) Any lighting adjacent to sensitive habitat shall be directed or shielded away from the habitat, and motion-sensitive lighting shall be utilized adjacent to sensitive habitat so that there is not a constant source of light illuminating the surrounding habitat.
- 3) Light glare shields shall be used to reduce the extent of illumination into adjoining areas and above into night skies.
- 4) Full cut-off luminaires will be used to minimize uplighting.
- 5) Lights will be directed downward or toward the area to be illuminated.
- 6) Light fixtures will not spill light beyond the Project boundary.
- 7) Lights in highly illuminated areas that are not occupied on a continuous basis will have switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.
- 8) Where practicable, vehicle mounted lights will be used for night maintenance activities.
- 9) Where practicable, consistent with safety and security, lighting will be kept off when not in use.

Operational lighting requirements pursuant to this measure shall be incorporated into the lighting plan required by Mitigation Measure VIS-1.

BIO-14: Storm Water Pollution Prevention Plan (SWPPP) and Drainage, Erosion, and Sediment Control Plan (DESCP).

Prior to issuance of the Notice to Proceed, the Project proponent shall prepare an Agency-approved SWPPP and a DESCP to comply with BLM, USFWS, CDFW, and RWQCB requirements. The Project shall employ a comprehensive system of management controls, including site-specific BMPs, to minimize erosion and storm water contact with contaminants and thereby reduce exposure of wildlife and plants to pollutants in the storm water.

BIO-15: Wildfire Prevention.

During construction, wildfire risk reduction measures shall be implemented, consistent with the Fire Prevention Plan requirements outlined in Mitigation Measure FIRE-1. Vehicles shall not drive or park drive or where catalytic converters could ignite dry vegetation. In times of high fire hazard (e.g., red flag warnings, PAL E designations), vehicles and equipment shall carry firefighting equipment or high fire risk construction activities shall be halted, consistent with Mitigation Measure FIRE-1. The use of shields, protective mats, or other fire prevention equipment shall be used during grinding, welding, or other spark-generating activities to prevent or minimize the potential for ignitions. Smoking shall be prohibited within vegetated areas.

BIO-16: Weed Management.

Prior to construction, the Project proponent shall prepare a BLM and CDFW-approved Weed Management Plan (a draft is included in Draft EIS/EIR/PA Appendix I). The Weed Management Plan shall include measures to reduce the potential for introducing non-native plant species to the site and to treat non-native plants, if introduced to the Project site or vicinity. Including but not limited to the following. During construction and operations, the introduction of non-native plant species shall be avoided and controlled wherever possible, and may be achieved through physical or chemical (pending both BLM and CDFW approval) removal and prevention. Preventing non-native plants from entering the site via vehicular sources shall include measures such as the use of rumble strips (e.g., Trackclean) or other method(s) of vehicle cleaning for vehicles coming and going from the site. Earth-moving equipment shall be cleaned prior to transport to the Project site. Weed-free rice straw or other certified weed-free straw shall be used for erosion control. Weed populations introduced into the site during construction shall be eliminated by chemical and/or mechanical means approved by the Resource Agencies and in accordance with applicable federal, state, and local regulations.

- BIO-17: Worker Environmental Awareness Program (WEAP).** Prior to construction, the Project proponent shall develop a WEAP to be approved by the Resource Agencies. The WEAP shall contain information on all special-status species, vegetation communities, non-native invasive weed species (and how to reduce/limit their spread), and all general biological mitigation measures as well as all specific protection measures for special-status species. The WEAP shall be administered to all Project personnel and shall include documentation of training with training acknowledgements signed by each worker. The WEAP shall be implemented to all Project personnel prior to their work during site preconstruction, construction, operation, and decommissioning. The WEAP shall:
1. Be developed by or in consultation with the DB, AB, or BM and consist of an onsite or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants;
 2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes, reptiles, or other wildlife shall be harmed;
 3. Place special emphasis on desert tortoise and desert kit fox, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
 4. Include a discussion of fire prevention measures to be implemented by workers during Project activities; request workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;
 5. Describe the temporary and permanent habitat protection measures to be implemented at the Project site;
 6. Identify events that require notification of the DB, AB, or BM, including but not limited to (1) desert tortoise observations; (2) special-status species observations in the work area; (3) observations of dead or injured wildlife within or near the work area; (4) accidental impacts outside of the designated work area, and (5) accidental spills of contaminants (within 24 hours);
 7. Provide contact information and describe the chain of communication for biological resources-related issues. Identify who to contact if there are further comments and questions about the material discussed in the program; and
 8. Include a training acknowledgment form to be signed by each worker indicating that they received training and agree to abide by the guidelines.
 9. The WEAP can be administered by a competent individual(s) or by media acceptable to CDFW the DB and the BLM AO. Any prerecorded presentation shall be accompanied by a formal process that allows submission of questions to the AB or BM that shall be read and answered within 24 hours of submission.

Resource-Specific Measures

As part of these resource-specific measures, this document incorporates by reference the mitigation measures within the following biological resource management plans that have been prepared for the Project and are included in Appendix I:

- Desert Tortoise Translocation Plan (BIO-23)
- Raven Management Plan (BIO-25)
- Couch's Spadefoot Management Plan (BIO-27)
- Burrowing Owl Management Plan (BIO-29)
- American Badger and Desert Kit Fox Monitoring and Management Plan (BIO-30)

- Nesting Bird Management Plan (BIO-31)
- Bird and Bat Conservation Strategy (BIO-32)
- Decommissioning Plan (BIO-34)

Vegetation Communities

BIO-18: **Vegetation Communities Restoration and Compensation.**

Restoration Plan: Prior to issuance of the Notice to Proceed, the Project proponent shall prepare and obtain approval from the Resources Agencies of a plan to restore areas subject to temporary impacts during the construction period. While all impacts will be mitigated as permanent due to the long re-establishment time required for desert vegetation, certain portions of the project site may only be impacted during construction, including, but not limited to portions of the gen-tie line and, if Alternative B is selected, disturbance areas that would be avoided by DE-2 and DE-3. The Project Owner shall be responsible for preparing an accurate map of temporarily disturbed areas upon completion of construction. Only native plant species which would naturally occur within the disturbed habitats shall be used for restoration. Seed tags shall be submitted to the Resource Agencies at least 14 days before the date of proposed seeding for acceptance. Restoration activities shall be implemented within 30 days of construction completion or during the soonest appropriate planting season.

For all temporarily disturbed areas, the Restoration Plan shall include a description of proposed methods for topsoil salvage and replacement, plant/seed salvage including salvage of succulents, seeding techniques, inoculation of native microbial organisms for plant mycorrhizae and for biotic soil crust formation, methods to stabilize and shape soil surface to reduce soil erosivity, and techniques to increase soil fertility and water holding capacity. Plant salvage measures shall follow applicable state and federal regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.

A monitoring and reporting protocol shall be a requisite part of the Plan, and the following performance standards shall be met by the end of monitoring year 2:

1. at least 80 percent of the species observed within the temporarily disturbed areas shall be native species that naturally occur in desert scrub habitats; and
2. relative cover and density of plant species within the temporarily disturbed areas shall be equal to or greater than 60 percent of native background density.

If these standards are not met, remedial restoration measures shall be prepared and submitted to the Resource Agencies for approval prior to implementation.

Sensitive Vegetation Community Restoration or Compensation: Permanent impacts on Creosote Bush–White Bursage/Big Galleta Grass Association (estimated at 289.4 acres) shall be compensated through a combination of compensation and restoration at a minimum 1:1 ratio. Habitat compensation shall be accomplished through Resource Agency-approved land preservation or mitigation fee payment for the purpose of habitat compensation of lands supporting comparable habitats to those lands impacted by the Project. Restoration may be appropriate as mitigation for permanent impacts provided that restoration is demonstrated to be feasible and the restoration effort is implemented pursuant to the restoration plan described above.

BIO-19: **Riparian Habitat.** The Project Owner shall implement the following measures to avoid, minimize and mitigate for direct and indirect impacts to riparian vegetation (microphyll woodlands) and ephemeral washes and riparian habitat:

1. Prior to construction, the BM shall verify that demarcation of boundary fencing avoids microphyll woodlands by an approximate buffer of 200 feet, with the exception of crossing locations where two access road crossings occur within microphyll woodlands (the northeast

- access road and the middle-western access road). At these locations, crossing widths shall be microsituated to avoid mature trees and constructed with the minimum width necessary to minimize direct impacts to the drainage. When the Project Owner or Contractor to Project Owner follows these BMPs, mitigation to replace lost woodlands would be avoided. If mature trees cannot be avoided at wash crossings and impacts to microphyll woodlands exceed 0.01 acre, compensatory mitigation shall be provided as described below.
2. *Compensatory Mitigation:* If the Project results in direct impacts to state-jurisdictional streams and riparian habitat, the Project Owner shall provide BLM and CDFW-approved compensatory mitigation at a ratio of 3:1 for any impacts greater than 0.01 acre to microphyll woodlands and 1:1 for all other directly impacted ephemeral washes. Based on anticipated project impacts of up to 1.2 acres of microphyll woodlands and 90.6 acres of unvegetated channel, resulting mitigation requirements would total up to 3.6 acres for microphyll woodlands and 90.6 acres for unvegetated channel. Compensatory mitigation shall be subject to BLM and CDFW approval and include preservation, enhancement, restoration, and/or creation on lands protected by acquisition, easement, or other legal mechanism and shall provide in-kind or higher value habitat. If lands are acquired, the terms and conditions of this acquisition shall be as described in Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements. Mitigation for impacts to state waters shall occur within the same watershed where the Project occurs and/or surrounding watersheds, as close to the Project site as possible. So long as security is posted in accordance with Provision 33 below (Security for Implementation of Mitigation), the Project Owner shall acquire, in fee or in easement, the land, no more than 18 months after the start of Project ground-disturbing activities.
 3. *Security for Implementation of Mitigation:* Prior to issuance of the Notice to Proceed, the Project Owner shall provide financial assurances to the Resource Agencies to guarantee that an adequate level of funding is available to provide compensatory mitigation, as described in this condition. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the Resource Agencies in the form of an irrevocable letter of credit, a pledged savings account or Security prior to initiating ground-disturbing Project activities. Prior to submittal, the Security shall be approved by the Resource Agencies to ensure funding is adequate. (See Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements, for a discussion of the assumptions used in calculating the Security.) The Security amounts may change based on land costs or the estimated costs of enhancement and endowment. The final amount due shall be determined by the PAR or PAR-like analysis conducted pursuant to BIO-26, Part 3, Compensation Lands Acquisition Requirements, and approved by the Resource Agencies. The final mitigation acreage is also subject to CDFW concurrence with Project impacts to waters of the state and riparian areas that were developed by the Project Owner.
 4. *Preparation of Long Term Management Plan (LTMP):* The Project Owner shall submit to the Resource Agencies a draft LTMP for approval that reflects site-specific enhancements for the jurisdictional areas on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the jurisdictional areas, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control.
 5. *Code of Regulations:* Prior to construction, the Project Owner shall provide a copy of the BRMMP and CDFW permits to all contractors, subcontractors, and the Project Owner's Project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFW personnel upon demand. The BLM AO reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the Project Owner if the BLM AO in consultation with CDFW, determines that the Project Owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:

- a. The information provided by the Project Owner regarding streambed alteration is incomplete or inaccurate;
 - b. New information becomes available that was not known to it in preparing the terms and conditions; or
 - c. The Project or Project activities as described in the EIS/EIR have changed.
6. *Best Management Practices:* The Project Owner shall also comply with the following conditions to protect drainages near the Project Disturbance Area:
- a. The Project Owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows and ponding.
 - b. The Project Owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the Project Owner to ensure compliance.
 - c. Spoil sites shall be located within the Project site and at least 30 feet from the boundaries and drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.
 - d. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from Project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. The Project Owner or any party working under contract or with the permission of the Project Owner shall immediately remove any such materials placed within a drainage or where the materials may enter a drainage.
 - e. The Project Owner shall prevent any broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature from entering into, or being placed where rainfall or runoff may wash the materials into waters of the state.
 - f. When operations are completed, any excess materials or debris shall be removed from the work area as soon as possible and shall not remain for longer than 5 days following completion of operations. No rubbish shall be deposited, even temporarily, within 150 feet of the high water mark of any drainage.
 - g. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.

Special-Status Plants

BIO-20: Special-Status Plant Avoidance, Minimization, and Compensation.

Avoidance and Minimization: Prior to and during construction, the Project proponent shall identify and implement site design modifications to minimize impacts on special-status plants along Project access roads and the gen-tie line including:

1. Limit the extent of work areas;
2. Microsite roads and linear features to avoid known and newly discovered occurrences; and
3. Drive and crush vegetation as an alternative to blading of roads to preserve the seed bank.

Environmentally Sensitive Areas (ESAs): Prior to the start of vegetation or ground-disturbing activities, a qualified botanist shall designate environmentally sensitive areas (ESAs) around special-status plants outside of the Project site within 100 feet of the limits of disturbance. This includes areas identified to have special-status plant species during prior surveys. The locations of environmentally sensitive areas shall be clearly marked on construction drawings and shall be flagged in the field. The boundaries of the ESAs shall be marked on drawings and/or flagged in the field a minimum of 20 feet from the occurrence. Where this is not possible due to construction constraints, other protection measures, such as silt-fencing and sediment controls, may be employed to protect the occurrences. Equipment and vehicle maintenance areas, and wash areas, shall be located 100 feet from the upgradient side of any ESAs. ESAs shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing or sediment controls. Violations of the ESA boundaries could result in work stoppages and/or compensation for damages to the resource being protected.

Vegetation Trimming: During O&M, staff shall be trained to identify rare plant species known to occur on site as part of the WEAP (BIO-17), and vegetation trimming shall be conducted to allow special-status species to set seed prior to trimming.

Compensation: For unavoidable impacts to Harwood's eriastrum, the Project Owner shall provide compensatory mitigation at a 1:1 ratio through one of the following options: (1) Acquisition and protection of habitat supporting the species, (2) restoration/enhancement of habitat occupied by the species on protected public lands, (3) or in-lieu fee payment to support these activities. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer. The Project Owner shall provide funding for the acquisition and/or restoration/ enhancement, initial improvement, and long-term maintenance and management of the acquired or restored lands. The actual costs to comply with this condition will vary depending on the Project disturbance area, the actual costs of acquiring compensation habitat, the actual costs of initially improving the habitat, the actual costs of long-term management as determined by a Property Analysis Record (PAR) or similar methodology, and other transactional costs related to the use of compensatory mitigation. The Project Owner shall comply with other related requirements of this measure, as follows:

1. ***Compensatory Mitigation by Acquisition.*** The requirements for the acquisition initial protection and habitat improvement, and long-term maintenance and management of compensation lands for state and Federally protected plant species include all of the following:
 - 1.1. ***Selection Criteria for Acquisition Lands.*** The compensation lands selected for acquisition may include any of the following three categories:
 - 1.1.1. ***Occupied Habitat, No Habitat Threats.*** The compensation lands selected for acquisition shall be occupied by the species and shall be characterized by site integrity and habitat quality that are required to support the species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the species on the proposed acquisition lands should be viable, stable or increasing (in size and reproduction).
 - 1.1.2. ***Occupied Habitat, Habitat Threats.*** Occupied compensation lands characterized by habitat threats may also be acquired as long as the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive, non-native plants) and is accompanied by a Revegetation Plan as described in Mitigation Measure BIO-18 above.
 - 1.1.3. ***Unoccupied but Adjacent.*** The Project Owner may also acquire habitat for which occupancy by the species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The Project Owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term

sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the species.

- 1.2. *Review and Approval of Compensation Lands Prior to Acquisition.* The Project Owner shall submit a formal acquisition proposal to the BLM AO describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above, and must be approved by the BLM AO.
- 1.3. *Compensation Land Management Plan.* The Project Owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the plant occurrences. The Management Plan shall be submitted for review and approval to the BLM AO.
- 1.4. *Integrating Plant Mitigation with Other Mitigation lands.* If all or any portion of the acquired Mojave desert tortoise or other required compensation lands meet the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for plant mitigation.
- 1.5. *Compensation Lands Acquisition Requirements.* The Project Owner shall comply with the following requirements relating to acquisition of the compensation lands after the BLM AO, has approved the proposed compensation lands:
 - 1.5.1. *Preliminary Report.* The Project Owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the BLM AO. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the BLM AO. For conveyances to the state, approval may also be required from the California Department of General Services, the Fish and Game Commission and the Wildlife Conservation Board.
 - 1.5.2. *Title/Conveyance.* The Project Owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the BLM AO. Any transfer of a conservation easement or fee title may be to CDFW or an organization qualified to hold title to and manage compensation lands (pursuant to California Government Code §65965), to BLM, or another public agency approved by the BLM AO. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFW or another entity approved by the BLM AO. If an entity other than CDFW holds a conservation easement over the compensation lands, the BLM AO may require that CDFW or another entity approved by the BLM AO, in consultation with CDFW, be named a third party beneficiary of the conservation easement. The Project Owner shall obtain approval of the BLM AO of the terms of any transfer of fee title or conservation easement to the compensation lands.
 - 1.5.3. *Initial Protection and Habitat Improvement.* The Project Owner shall fund activities that the BLM AO requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands. The costs of these activities are

estimated to be \$330 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy. A qualified organization, CDFW or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code §65965), if it meets the approval of the BLM AO in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

- 1.5.4. *Property Analysis Record.* Upon identification of the compensation lands, the Project Owner shall conduct a PAR or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the BLM AO before it can be used to establish funding levels or management activities for the compensation lands.
- 1.5.5. *Long-term Maintenance and Management Funding.* The Project Owner shall deposit the endowment (with an entity qualified pursuant to Government Code sections 65965-65968, as amended and approved by BLM and CDFW) a non-wasting capital long-term maintenance and management fee in the amount determined through the PAR analysis conducted for the compensation lands.
- 1.5.6. *Long-term Maintenance and Management Fund Entity.* The BLM AO, in consultation with CDFW, may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity.
- 1.5.7. *Interest, Principal, and Pooling of Funds.* The Project Owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:
 - i. *Interest.* Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the BLM AO and is designed to protect or improve the habitat values of the compensation lands.
 - ii. *Withdrawal of Principal.* The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the BLM AO or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the species on the compensation lands.
 - iii. *Pooling Long-Term Maintenance and Management Funds.* An entity approved to hold long-term maintenance and management funds for the Project may pool those funds with similar non-wasting funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this Project must be tracked and reported individually to the BLM AO.
- 1.5.8. *Other Expenses.* In addition to the costs listed above, the Project Owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review

costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

1.5.9. *Mitigation Security.* The Project Owner shall provide financial assurances in accordance with Mitigation Measure VEG-10.2 to the BLM AO to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of ground-disturbing Project activities. Financial assurances shall be provided to the BLM AO in the form of an irrevocable letter of credit, a pledged savings account or another form of approved security (“Security”). The amount of the Security shall be \$2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the BLM AO, the Project Owner shall obtain the BLM AO’s approval of the form of the Security. The BLM AO may draw on the Security if the BLM AO determines the Project Owner has failed to comply with the requirements specified in this condition. The BLM AO may use money from the Security solely for implementation of the requirements of this condition. The BLM AO’s use of the Security to implement measures in this condition may not fully satisfy the Project Owner’s obligations under this condition, and the Project Owner remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the Project Owner in whole or in part upon successful completion of the associated requirements in this condition.

2. *Compensatory Mitigation by Habitat Enhancement/Restoration:* As an alternative or adjunct to land acquisition for compensatory mitigation, the Project Owner may undertake habitat enhancement or restoration for the plant species. Examples of suitable enhancement projects include but are not limited to the following:

- i) control unauthorized vehicle use into an occurrence (or pedestrian use if clearly damaging to the species);
- ii) control of invasive non-native plants that infest or pose an immediate threat to an occurrence;
- iii) exclude grazing by wild burros or livestock from an occurrence; or
- iv) restore lost or degraded hydrologic or geomorphic functions critical to the species by restoring previously diverted flows, removing obstructions to the wind sand transport corridor above an occurrence, or increasing groundwater availability for dependent species.

If the Project Owner elects to undertake a habitat enhancement project for mitigation, the project must meet the following performance standards: The proposed enhancement project shall achieve rescue of an off-site occurrence that is currently assessed, based on the NatureServe threat ranking system (Master et al. 2009; see also Morse et al. 2004) with one of the following threat ranks:

- a) long-term decline >30 percent;
- b) an immediate threat that affects >30 percent of the population, or
- c) has an overall threat impact that is High to Very High. “Rescue” would be considered successful if it achieves an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”).

If the Project Owner elects to undertake a habitat enhancement project for mitigation, they shall submit a Habitat Enhancement/Restoration Plan to the BLM AO for review and approval, and shall provide sufficient funding for implementation and monitoring of the Plan. The amount of the Security shall be \$2,280 per acre, using the estimated cost per acre for Mojave desert tortoise mitigation as a best available proxy for every acre of habitat supporting the plant species which is directly or indirectly impacted by the Project. The amount of the security may be adjusted based on the actual costs of implementing the enhancement, restoration and monitoring. The implementation and monitoring of the enhancement/restoration may be undertaken by an appropriate third party such as NFWF, subject to approval by the BLM AO. The Habitat Enhancement/Restoration Plan shall include each of the following:

- 2.1. *Goals and Objectives.* Define the goals of the restoration or enhancement project and a measurable course of action developed to achieve those goals. The objective of the proposed habitat enhancement plan shall include restoration of a plant occurrence that is currently threatened with a long-term decline. The proposed enhancement plan shall achieve an improvement in the occurrence trend to “stable” or “increasing” status, or downgrading of the overall threat rank to slight or low (from “High” to “Very High”).
- 2.2. *Historical Conditions.* Provide a description of the pre-impact or historical conditions (before the site was degraded by weeds or grazing or ORV, etc.), and the desired conditions.
- 2.3. *Site Characteristics.* Describe other site characteristics relevant to the restoration or enhancement project (e.g., composition of native and pest plants, topography and drainage patterns, soil types, geomorphic and hydrologic processes important to the site or species).
- 2.4. *Ecological Factors.* Describe other important ecological factors of the species being protected, restored, or enhanced such as total population, reproduction, distribution, pollinators, etc.
- 2.5. *Methods.* Describe the restoration methods that will be used (e.g., invasive exotics control, site protection, seedling protection, propagation techniques, etc.) and the long-term maintenance required. The implementation phase of the enhancement must be completed within five years.
- 2.6. *Budget.* Provide a detailed budget and time-line, and develop clear, measurable, objective-driven annual success criteria.
- 2.7. *Monitoring.* Develop clear, measurable monitoring methods that can be used to evaluate the effectiveness of the restoration and the benefit to the affected species. The Plan shall include a minimum of five years of quarterly monitoring, and then annual monitoring for the remainder of the enhancement project, and until the performance standards for rescue of a threatened occurrence are met. At a minimum the progress reports shall include: quantitative measurements of the projects progress in meeting the enhancement project success criteria, detailed description of remedial actions taken or proposed and contact information for the responsible parties.
- 2.8. *Reporting Program.* The Plan shall ensure accountability with a reporting program that includes progress toward goals and success criteria. Include names of responsible parties. 9. Contingency Plan. Describe the contingency plan for failure to meet annual goals. 10. Long-term Protection. Include proof of long-term protection for the restoration site. For private lands this would include conservations easements or other deed restrictions; projects on public lands must be contained in a Desert Wildlife Management Area, Wildlife Habitat Management Area, or other land use protections that will protect the mitigation site and species.

Desert Tortoise

BIO-21: Desert Tortoise Authorized Biologist (AB). A minimum of 30 days prior to construction, the Project Owner or DR shall submit to the Resource Agencies a list of personnel they want approved as AB(s) along with their qualifying documents. An AB may also fill the roles of DB or BM, if approved for those roles by the Resource Agencies.

AB Approval: The AB shall be approved by the Resource Agencies and shall be permitted to handle desert tortoises. No Project activities shall begin until an AB is approved by the Resource Agencies.

AB Responsibilities: The Project Owner shall ensure that the AB(s) performs the following activities:

- a) The AB shall be responsible for all surveys, trainings, compliance monitoring, and reporting related to the desert tortoise.
- b) ABs shall be authorized to handle and relocate desert tortoise when necessary. BMs shall ensure compliance with the protection measures and may conduct surveys and compliance monitoring, but shall not be allowed to handle desert tortoise without direct oversight of an AB.
- c) The AB shall be notified of all desert tortoise observations, including injuries and mortalities.
- d) The AB shall notify the Resource Agencies within 24 hours of any desert tortoise injuries or mortalities.
- e) The AB shall be on site during fencing activities.
- f) The AB shall have the right to halt all activities that are in violation of the desert tortoise protection measures. Work shall proceed only after hazards to the desert tortoise are removed and the species is no longer at risk, or the individual has been moved from harm's way by the AB.
- g) The AB shall have in their possession a copy of all compliance measures while work is being conducted onsite.

BIO-22: Desert Tortoise Exclusion Fence. Prior to construction, all portions of the Project site subject to driving or construction disturbance shall be enclosed with a permanent desert tortoise-exclusion fence to keep desert tortoise in habitat adjacent to the site from entering the site during construction and operations phases.

The access roads between development areas shall have temporary desert tortoise-exclusion fencing installed along their length through the washes in areas with the highest desert tortoise density (between the two southern-most development areas).

All desert tortoise exclusion fencing shall follow the specifications for desert tortoise exclusion fence in the USFWS 2009 *Desert Tortoise Field Manual*, as referenced in the Desert Tortoise Translocation Plan (Appendix I), or the latest USFWS guidance. Following completion of construction, the desert tortoise-exclusion fencing along these access roads between development areas shall be removed and desert tortoise-exclusion gates with grates shall be installed at each end of the access road between development areas.

All fence construction shall be monitored by an AB or appointed monitors to verify that no desert tortoise is harmed. Following installation, the fencing shall be inspected monthly and within 24 hours after all major rainfall events. Damage to the fencing shall be repaired immediately.

BIO-23: Desert Tortoise Pre-Construction Clearance Surveys. Prior to construction, desert tortoise clearance surveys shall be conducted to locate and remove desert tortoises from within the Project site area to be enclosed with a permanent desert tortoise-exclusion fence prior to grading or actions which might result in harm to a desert tortoise or which remove tortoise habitat. Clearance surveys for desert tortoise shall occur across the entire Project site following installation of the desert

tortoise-exclusion fence. Survey methods shall meet the standards established by the USFWS in the 2009 Desert Tortoise Field Manual, or latest USFWS guidance, and follow the following procedures, subject to modification by USFWS and CDFW authorizations. A minimum of two clearance perpendicular passes shall be completed after desert tortoise-exclusion fencing is installed, and these passes shall coincide with heightened desert tortoise activity, from late March through May and during September through October. This measure shall maximize the probability of finding all desert tortoise. Desert tortoises found shall be moved by an AB or BM under direct supervision in accordance with a BLM, CDFW, and USFWS-approved Desert Tortoise Translocation Plan (Appendix I). After two consecutive clearance passes with no desert tortoise found construction activities can commence. For areas not enclosed by exclusion fencing, preconstruction clearance surveys shall be conducted within 24 hours prior to the onset of surface disturbance and a Biological Monitor shall be present in the vicinity of construction activities at all times.

Following site clearance, a report shall be prepared by the DB to document the clearance surveys, the capture and release locations of all desert tortoise found, individual desert tortoise data, and other relevant data. This report shall be submitted to the Resource Agencies.

BIO-24: Resource Agency Notifications. During construction and operations, the following shall occur:

Dead or Injured Tortoises: If a dead or injured desert tortoise is found, the AB shall make initial notification to the Resource Agencies within 24 hours of its finding. The notification must be made both by telephone and in writing to the nearest USFWS Field Office, located in Palm Springs, California, and to the CDFW contact listed in the Project's Incidental Take Permit. The report shall include the date and time of the finding or incident (if known), location of the specimen, a photograph, cause of injury/death (if known), and other pertinent information. Desert tortoise fatally injured as a result of Project-related activities shall be submitted by the AB for necropsy at a facility recommended by USFWS as outlined in Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoises (Berry 2003). Desert tortoises with non-fatal injuries shall be transported to a nearby qualified veterinarian (approved by the Resource Agencies prior to construction) for treatment at the expense of the proponent. If an injured desert tortoise does not recover, the Resource Agencies shall be contacted for direction concerning the final disposition of the desert tortoise.

Emergency Response Impacts: For emergency response situations, the AB and/or DB shall immediately notify the nearest USFWS Field Office, located in Palm Springs, California, and to the CDFW contact listed in the Project's Incidental Take Permit. As a part of this response, the agency representatives may require additional measures to protect the desert tortoise. During any emergency responses by Project staff or specialized responders to a scenario involving an imminent threat related to human health, fire, hazardous waste, or repairs requiring off-road vehicle and equipment use, the Resource Agencies may also require measures to recover damaged habitat.

BIO-25: Raven Monitoring, Management, and Control Plan. Prior to issuance of the Notice to Proceed, the Project proponent shall prepare a Raven Monitoring, Management, and Control Plan (Appendix I) that is consistent with the most current USFWS-approved raven management guidelines and submit it to the Resource Agencies for approval. The management plan shall include but not be limited to a program to monitor raven presence in the Project vicinity, determine if raven numbers are increasing, and to implement raven control measures as needed based on monitoring results. The purpose of the plan is to avoid any Project-related increases in raven numbers during construction, operation, and decommissioning. The Project Owner shall also provide funding for implementation of the USFWS Regional Raven Management Program. The Project Owner shall submit payment to the Project sub-account of the Renewable Energy Action Team (REAT) Account held by NFWF to support the USFWS Regional Raven Management Program. The one-time fee shall be as described in the cost allocation methodology or based on current guidance as provided by USFWS or CDFW. Based on an estimated contribution of \$105 per acre impacted, the fee is expected to total \$262,962

for impacts to 2,504.4 acres. The actual fee would be determined based on the latest practice and based on the impact acreage of the selected Project Alternative.

BIO-26: Desert Tortoise Compensatory Mitigation. Prior to issuance of the notice to proceed, the Project Owner shall provide compensatory mitigation via land acquisition or in-lieu fee payment at a 1:1 ratio for impacts to 2,504.4 acres within the Alternative A footprint, adjusted to reflect the final footprint of the selected alternative. To satisfy this measure, the Project Owner shall acquire and protect and transfer 1 acre of Mojave desert tortoise habitat for every acre of habitat within the final Project footprint, and provide associated funding for the acquired lands, as specified below. The Project Owner may choose to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to California Fish and Game Code §§ 2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the CDFW to fully mitigate the impacts identified herein.

The timing of the mitigation shall correspond with the timing of the site disturbance activities. However, if security is posted in accordance with 3.h. below (Mitigation Security), the Project Owner shall complete the acquisition, protection, and transfer of all lands and record any required conservation easements no later than 18 months from the time the resource impact occurs. Extensions must be approved by CDFW and the Authorizing Officer.

If compensation lands are acquired in fee title or in easement, the requirements for acquisition, initial improvement and long-term management of compensation lands shall include all of the following:

1. ***Selection Criteria for Compensation Lands.*** The compensation lands selected for acquisition in fee title or in easement shall have at a minimum:
 - a. be within the Chuckwalla DWMA or, if sufficient land is unavailable, in other locations within the Colorado Desert Recovery Unit;
 - b. be located outside of a DFA;
 - c. provide habitat for all life stages of Mojave desert tortoise with capacity to regenerate naturally when disturbances are removed;
 - d. be prioritized near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
 - e. be connected to lands with Mojave desert tortoise habitat equal to or better quality than the Project site, ideally with populations that are stable, recovering, or likely to recover;
 - f. not have a history of intensive recreational use or other disturbance that does not have the capacity to regenerate naturally when disturbances are removed or might make habitat recovery and restoration infeasible;
 - g. not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
 - h. not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
 - i. have water and mineral rights included as part of the acquisition, unless the Resource Agencies agree in writing to the acceptability of land.
 - j. have live desert tortoise on the conserved lands or on lands abutting the conserved lands.
2. ***Review and Approval of Compensation Lands Prior to Acquisition.*** The Project Owner shall submit a formal acquisition proposal to the Resource Agencies describing the parcel(s) intended for compensatory acquisition. This acquisition proposal shall discuss the suitability of the

proposed parcel(s) as compensation lands for Mojave desert tortoise in relation to the criteria listed above. Approval from the Resource Agencies shall be required prior to acquisition of all compensatory mitigation parcels.

3. ***Compensation Lands Acquisition Requirements.*** To provide for the acquisition and perpetual protection and management of the compensation lands, the Project Owner shall comply with the following requirements:
 - a. *Preliminary Report.* The Project Owner, or approved third party, shall provide a recent (within 1 year) preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the Resource Agencies. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the Resource Agencies. For conveyances to the state, approval may also be required from the California Department of General Services, the Fish and Game Commission, and the Wildlife Conservation Board.
 - b. *Title/Conveyance.* The Project Owner shall transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement. Transfer of either fee title or an approved conservation easement will usually be sufficient, but in some situations, e.g., the donation of lands burdened by a conservation easement to BLM, shall require that both types of transfers be completed. Any transfer of a conservation easement or title must be to CDFW, a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended, or to BLM under terms approved by the Authorizing Officer and CDFW. If CDFW does not hold the conservation easement, CDFW shall be expressly named in the approved conservation easement as a third-party beneficiary.
 - c. *Initial Habitat Improvement Fund.* The Project Owner shall fund the initial protection and habitat improvement of the compensation lands. The interim management period shall be a minimum of three years from the date of land acquisition and protection and full funding of the Endowment and includes expected management following start-up activities. Alternatively, a non-profit organization may hold the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code §65965) and if it meets the approval of CDFW and the Authorizing Officer. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.
 - d. *Property Analysis Record.* Upon identification of the compensation lands, the Project Owner shall conduct a PAR or PAR-like analysis to establish and get approval from the Resource Agencies regarding the amount of the appropriate long-term maintenance and management fee to fund the in-perpetuity management of the acquired mitigation lands.
 - e. *Long-term Maintenance and Management Fund.* The Project Owner shall deposit the endowment (with an entity qualified pursuant to Government Code sections 65965-65968, as amended and approved by BLM and CDFW) a non-wasting capital long-term maintenance and management fee in the amount determined through the PAR analysis conducted for the compensation lands.
 - f. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund or designate another entity to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

- g. *Interest and Principal.* The Project Owner, the BLM AO and CDFW shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:
- Interest. Interest generated from the initial capital long-term maintenance and management fee shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.
 - Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFW or the approved third-party long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.
 - Other expenses. In addition to the costs listed above, the Project Owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to title and document review costs, expenses incurred from other state agency reviews, and overhead related to providing compensation lands to CDFW or an approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.
- h. *Mitigation Security.* The Project Owner shall provide financial assurances to the BLM AO and CDFW with copies of the document(s) to the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measures described herein. These funds shall be used solely for implementation of the measures associated with the Project in the event the Project Owner fails to comply with the requirements specified in this measure and shall be returned to the Project Owner upon successful compliance with the requirements in this measure. The BLM AO's or CDFW's use of the security to implement required measures may not fully satisfy the Project Owner's obligations under this condition. Financial assurance can be provided to the BLM AO and CDFW in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved in advance in writing by CDFW and the BLM AO. Security shall be provided in the amounts calculated as follows (amounts can change based on current assessments at time of Security):
- h.1. land acquisition costs for compensation land, calculated at \$1300/acre.
 - h.2. initial protection and improvement activities on the compensation land, calculated at \$330/acre.
 - h.3. Long term maintenance and management fee, calculated at \$1,450 an acre.
- The amount of security shall be adjusted for any change in the Project footprints for each phase (acquisition, initial protection/improvement, and long-term management and maintenance) as described above.
- i. Acquisition of compensation lands may be delegated to a third party, such as a private or non-governmental organization. Land acquisition, initial protection or maintenance, and management activities shall be approved by BLM and CDFW and implemented within 18 months of start of construction.

Couch's Spadefoot

BIO-27: **Couch's Spadefoot Protection Plan.** Prior to issuance of the Notice to Proceed, the Project proponent shall prepare a Couch's Spadefoot Protection Plan (see Appendix I) to be approved by the BLM and CDFW. The plan shall include the following:

1. **Habitat Survey Protocol and Results:** Figures showing the areas surveyed and the location of potential breeding habitat in relation to proposed Project features. The plan shall also include a survey protocol to locate potential future breeding ponds.
2. **Avoidance and Minimization Measures:** A description of measures that would be implemented to avoid impacts to potential breeding ponds, such as buffers, protective fencing or other barriers, worker's education, minimizing construction traffic within the vicinity of breeding ponds, and biological monitoring.
3. **Monitoring and reporting requirements:** Any observations of live or dead Couch's spadefoots shall be reported to BLM. If a live toad is observed, the DB or BM shall monitor the toad to ensure it is safely out of harm from construction activities.

Mojave Fringe-toed Lizard

BIO-28: **Mojave Fringe-Toed Lizard and Desert Dunes.** During construction, the Project proponent shall minimize impacts to dune habitat associated with linear features that support Mojave fringe-toed lizards. Roads shall be kept at-grade to avoid blocking local sand transport.

For impacts to Mojave fringe-toed lizard habitat that cannot be avoided, the Project proponent shall provide compensatory mitigation under the CDCA Plan, as amended. This shall be accomplished either by land acquisition acceptable to the Resource Agencies, or a Resource Agency-assessed financial contribution calculated based on the final construction footprint. Direct permanent impacts to both occupied and unoccupied Mojave fringe-toed lizard habitat shall be mitigated at a ratio of 3:1, with a minimum 1:1 ratio to include Desert Dune habitat. Estimated mitigation would total 1,636.8 acres, based on 545.6 acres of estimated impacts under Alternative A. Actual mitigation shall be based on impacts of the selected Project Alternative.

Mitigation may include compensation lands purchased in fee or in easement in whole or in part, for impacts to Mojave fringe-toed lizard habitat. Without this mitigation, the project would not be consistent with the land use plan, with which BLM is required to comply. As required under CEQA MFTL is a species of special concern and impacts to the species and habitat should be mitigated to less than significant. If compensation lands are acquired, the Project Owner shall provide funding for the acquisition in fee title or in easement, initial habitat improvements and long-term maintenance and management of the compensation lands. Compensation shall be initiated or completed within 188 months from the time the resource impact occurs. Extensions must be approved by the BLM AO and CDFW.

1. **Criteria for Compensation Lands:** The compensation lands selected for acquisition shall:
 - a. Be deposits of eolian or fine windblown sands typically associated with dunes (at a minimum of 1:1), as well as washes, hillsides, margins of dry lakes, and sandy hummocks, preferably within the McCoy Valley or Chuckwalla Valley, outside of DFAs. To the extent feasible, land should have the potential to contribute to Mojave fringe-toed lizard habitat connectivity and build linkages between known populations of Mojave fringe-toed lizards and preserve lands with suitable habitat;
 - b. Be occupied with Mojave fringe-toed lizards or be connected to lands currently occupied by Mojave fringe-toed lizard;

- c. To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
 - d. Provide quality habitat for Mojave fringe-toed lizard, that has the capacity to regenerate naturally when disturbances are removed;
 - e. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
 - f. Not contain hazardous wastes that cannot be removed to the extent the site is suitable for habitat;
 - g. Not be subject to property constraints (i.e. mineral leases); and
 - h. Be on land for which long-term management is feasible.
2. ***Security for Implementation of Mitigation:*** The Project Owner shall provide financial assurances to the BLM AO and CDFW to guarantee that an adequate level of funding is available to implement the acquisitions, maintenance and enhancement of Mojave fringe-toed lizard habitat as described in this measure. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO and CDFW according to the measures outlined in Mitigation Measure Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements. The final amount due shall be determined by an updated appraisal and a PAR or PAR-like analysis conducted as described in Mitigation Measure Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements.
 3. ***Preparation of the Land Management Plan:*** The Project Owner shall submit to the Resource Agencies a draft Management Plan for approval that reflects site-specific enhancement measures for the Mojave fringe-toed lizard habitat on the acquired compensation lands. The objective of the Management Plan shall be to enhance the value of the compensation lands for Mojave fringe-toed lizards, and may include enhancement actions such as weed control, fencing to exclude livestock, erosion control, or protection of sand sources or sand transport corridors.

Western Burrowing Owl

BIO-29: Burrowing Owl Mitigation.

Burrowing Owl Management Plan: Prior to issuance of the Notice to Proceed, the Project proponent shall prepare an agency-approved Burrowing Owl Management Plan (see Appendix I) subject to BLM and CDFW approval. This plan shall include biologist qualifications, and methods for passive relocation, burrow closure, and monitoring of burrowing owls. Focused surveys shall additionally be performed to verify the absence of burrows owls and avoid impacts to this species prior to and during construction consistent with CDFW 2012 Staff Report of Burrowing Owl Mitigation recommendations (e.g., CDFW 2012). The preconstruction survey methodology, need for artificial replacement burrows, burrow monitoring, and reporting requirements shall be detailed in the Burrowing Owl Management Plan.

Burrowing Owl Compensatory Mitigation: If preconstruction surveys determine the presence of burrowing owls that would be impacted by the Project, consistent with CDFW mitigation guidance (California Burrowing Owl Consortium 1993) the Project Owner shall acquire, in fee or in easement, land suitable to support a resident population of burrowing owls and shall provide funding for the enhancement and long-term management of these compensation lands based on 6.5 acres per pair or individual bird documented during the preconstruction survey as anticipated to be impacted by the Project. Compensation shall be initiated or completed within 12 months from the time the resource impact occurs, unless a 6-month extension is approved by the Authorizing Officer. The

responsibilities for acquisition and management of the compensation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the BLM AO, in consultation with CDFW prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat.

- a. *Criteria for Burrowing Owl Mitigation Lands.* The terms and conditions of this acquisition or easement shall be as described in as described in Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements, with the additional criteria to include: 1) the mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must be within the currently known range for burrowing owl. The burrowing owl mitigation lands may be included with the Mojave desert tortoise mitigation lands ONLY if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acreage required for Mojave desert tortoise compensation lands, the Project Owner shall fulfill the requirements described below in this measure.
- b. *Security.* If the burrowing owl mitigation land is separate from the acreage required for Mojave desert tortoise compensation lands, the Project Owner or an approved third party shall complete acquisition of the proposed compensation lands within the time period specified for this acquisition (see the verification section at the end of this measure). Alternatively, financial assurance can be provided by the Project Owner to the BLM AO and CDFW, according to the measures outlined in Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements. These funds shall be used solely for implementation of the measures associated with the Project. Financial assurance can be provided to the BLM AO in the form of an irrevocable letter of credit, a pledged savings account, or another form of security (“Security”) prior to initiating ground-disturbing Project activities. Prior to submittal, the Security shall be approved by the BLM AO in consultation with CDFW and the USFWS to ensure funding. The final amount due shall be determined by an updated appraisal and PAR analysis conducted as described in Mitigation Measure BIO-26, Part 3, Compensation Lands Acquisition Requirements.

Desert Kit Fox and American Badger

- BIO-30: **Desert Kit Fox and American Badger Management Plan.** Prior to issuance of the Notice to Proceed, the Project proponent shall prepare a Desert Kit Fox and American Badger Management Plan (Appendix I) that defines the strategy for management of kit foxes and badgers, subject to the BLM and CDFW approval. The plan shall include methodologies for pre-construction clearance surveys, den monitoring, passive relocation, and burrow excavation and closure.

Birds and Bats

- BIO-31: **Nesting Bird Management and Monitoring Plan.** Prior to issuance of the Notice to Proceed, the Project proponent shall prepare and obtain approval of a Nesting Bird Management and Monitoring Plan (Appendix I) from the Resource Agencies. This plan shall include protocols related to the methodology or pre-construction nesting bird surveys, nest buffers, and minimization and avoidance measures for nesting birds.
- BIO-32: **Bird and Bat Conservation Strategy.** Prior to issuance of the Notice to Proceed, the Project proponent shall finalize and obtain approval of a Bird and Bat Conservation Strategy (BBCS; Appendix I) from the Resource Agencies, and shall demonstrate to the Lead Agencies that Project design guidelines included in the BBCS have been incorporated into final Project design. The BBCS shall specify the Project phase(s) applicable to each measure and the Project proponent shall implement requirements of the BBCS throughout all phases of the Project as specified. The BBCS shall include the following:

- (1) Describe baseline conditions for bird and bat species present within the Project site, including results of site-specific surveys.
- (2) Assess potential risk to bird and bats based on the proposed activities, including all potential risks identified in the EIS/EIR.
- (3) Specify conservation measures that will be employed to avoid, minimize, and/or mitigate any potential adverse effects to these species. Specifically, to minimize the potential for avian electrocutions and collisions with above ground lines, wires, fences, the communications tower, and solar panels, the BBCS shall include, but not be limited to, the following measures:
 - (a) Project design guidelines consistent with the Avian Power Line Interaction Committee's (APLIC's) Suggested Practices for Avian Protection On Power Lines (2006; "Electrocution Manual") and Reducing Avian Collisions with Power Lines (2012; "Collision Manual") to the maximum extent feasible. Where APLIC suggested design guidelines are not feasible, the BBCS shall explain why and what alternatives have been considered to achieve the electrocution and/or collision reduction objectives.
 - (b) The latest applicable communication tower guidance, including the USFWS's Communication Tower Guidance (2018) and the Federal Communications Commission's Opportunities to Reduce Bird Collisions with Communications Towers While Reducing Tower Lighting Costs (2017).
 - (c) The latest monitoring, detection, and avoidance measures applicable to photovoltaic projects, including measures in Avian Mortality at Solar Energy Facilities in Southern California: A Preliminary Analysis (Kagan et al. 2014), such as incorporation of visual cues into panel design (e.g., UV-reflective or solid, contrasting bands spaced no further than 28 cm apart), to the maximum extent feasible.
 - (d) Lighting minimization measures consistent with Mitigation Measure BIO-13.
- (4) Describe the incidental bird and bat mortality and injury monitoring and reporting that will take place during construction.
- (5) Describe the post-construction avian and bat mortality monitoring and reporting of the deaths and injuries of birds and bats from collisions with facility features such as, but not limited to, transmission lines, tower structures (e.g., meteorological towers), and the solar field. The study design shall be approved by the BLM AO and CDFW in coordination with USFWS, and shall be incorporated into the Project's BRMMRP (see Mitigation Measure BIO-3).
- (6) Specify the process for using the monitoring data to inform an adaptive management program that would avoid and minimize Project-related avian and bat impacts.
- (7) Specify the conservation measures that would be implemented if found necessary through the adaptive management program. Such measures could potentially include efforts to make panels more visible to birds (e.g., white borders around panel edges, or the use of noise deterrents).
- (8) Post-construction mortality monitoring and reporting shall be required for a minimum of two years, including the following project components: PV solar panel arrays (a minimum of 40% survey coverage per year), perimeter fencing (100% survey coverage per year), and the gen-tie line (a minimum of 50% survey coverage per year).

BIO-33: CDFW Special-Status Bird Collision Compensatory Mitigation. The Project Owner shall provide compensatory mitigation to offset impacts on species affected by the Project's creation of a hazard that may result in the direct loss of individual birds and their future offspring. The type of mitigation is based on the three main groups of birds present on the project site: raptors, passerines, and riparian/water-associated birds, to ensure that the categories of bird species anticipated to be impacted by the Project will benefit from the enhanced and conserved habitat.

The Project Owner shall provide for the permanent protection of 225 acres of habitat that benefits one or more species within these three species groupings. Specifically, to mitigate for the direct loss of riparian/water-associated and passerine birds, the Project Owner shall enhance and conserve 175 acres of riparian breeding habitat. The conservation areas shall meet general breeding habitat requirements for the categories of bird species present or presumed to be present on the Project site. The remaining 50 acres of compensatory habitat shall meet breeding habitat requirements for raptors. A total of 25 acres of mitigation for impacts on raptors may be nested within or overlap with the desert tortoise mitigation, if the desert tortoise habitat provides raptor breeding opportunities such as burrows and rock outcroppings for species like the burrowing owl. The final 25 acres of mitigation for impacts on raptors shall meet breeding habitat requirements for one or more of the remaining raptor species. All acquisition of habitat must be permanently protected through a conservation easement. The Project Owner shall identify and seek CDFW approval for the compensatory habitat and conservation easement prior to the start of Project construction, and shall demonstrate the acquisition and permanent protection of these 225 acres to CDFW prior to commencement of Project operation.

Decommissioning

BIO-34: **Decommissioning Plan.** Prior to issuance of the Notice to Proceed, the Project proponent shall prepare a BLM and Resources Agency-approved Decommissioning Plan (Appendix I). The plan shall describe methods and requirements for site re-contouring, restoration of drainages, revegetation, soil restoration, weed management, and restoration monitoring, reporting and performance standards. This plan must be consistent with VIS-5.

Greenhouse Gas Emissions

No mitigation is required.

Cultural, Tribal, and Historic Resources

CUL-1: **NHPA Section 106 Memorandum of Agreement.** The BLM's execution of a Memorandum of Agreement (MOA) for the Project shall occur, if required, in accordance with Section 106 of the NHPA. The MOA shall be prepared in consultation with the ACHP, SHPO, the Applicant, Native American Tribes, and other identified consulting parties. The MOA will be binding on the BLM and Applicant. The MOA shall be executed prior to the ROD. The MOA will contain measures to avoid, minimize, and mitigate adverse effects to historic properties; procedures for unanticipated effects and post-review discoveries; a plan to comply with NAGPRA and other laws governing the discovery of human remains; and a program of monitoring and protecting historic properties during construction as well as during operations and decommissioning. Resolution of adverse effects to historic properties will be developed in consultation with consulting parties and may require data recovery excavations, public interpretation, and other activities.

CUL-2: **Historic Properties Treatment Plan and Long-Term Management Plan.** Where National Register of Historic Places (NRHP)- and California Register of Historical Resources (CRHR)-eligible or listed cultural resources cannot be protected from adverse direct and/or indirect effects, the Applicant shall comply with appropriate treatment(s) to mitigate adverse effects that will be detailed in a Historic Properties Treatment Plan (HPTP) developed as part of the MOA process described in CUL-1 (and appended to the MOA) prepared for the Project prior to issuance of the NTP. As necessary the Applicant shall also prepare a Long-Term Management Plan for protection and management of NRHP- and CRHR-eligible cultural resources during Project operations and decommissioning.

CUL-3: Identification of Human Remains. For human remains discovered on BLM-administered land, the plan for securing the discovery site and subsequent actions shall be included in the Monitoring and Discovery Plan required under Mitigation Measure CUL-5. In the event of a discovery, the BLM must be contacted immediately and State Health and Safety Code §7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. If the discovery is determined to be subject to NAGPRA (25 USC § 3001 and 43 CFR 10), the plan will describe the necessary process for notification of tribes and subsequent steps as required by law and regulations.

For human remains discovered on state or private lands, State Health and Safety Code §7050.5 states that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin. Further, pursuant to PRC §5097.98(b), remains shall be left in place and free from disturbance until a final decision as to treatment and disposition has been made. If the Riverside County Coroner determines the remains to be Native American, the NAHC shall be contacted within the period specified by law. The NAHC shall identify the “Most Likely Descendant,” who shall then make recommendations to and engage in consultation with CDFW and property owner concerning the treatment of the remains as provided in PRC §5097.98. The landowner may reach an agreement with the Most Likely Descendant for treating and disposing of human remains pursuant to state CEQA Guidelines §15064.5(d). Human remains from other ethnic/cultural groups with recognized historical associations to the Project area shall also be subject to consultation between appropriate representatives from that group and the CDFW.

CUL-4: Cultural Resources Personnel and Project Documentation for Cultural Resources Personnel. Prior to the issuance of a Notice to Proceed (NTP) by BLM for the Project, the Project Owner shall obtain the services of a Project Archaeologist and one or more alternates, if alternates are needed. The Project Archaeologist shall manage all monitoring, mitigation, curation, and reporting activities for the Project. The Project Archaeologist shall have a primarily administrative and coordination role for the Project. The Project Archaeologist may obtain the services of additional cultural resources specialists, if needed, to assist in monitoring, mitigation, and curation activities. The Project Archaeologist shall have a BLM California cultural resource use permit and all supervisory cultural resource field staff (Principal Investigators and Field Directors or Crew Chiefs) shall be listed on that permit and otherwise meet the requirements outlined in BLM Manual 8150. The Project Owner shall ensure that the Project Archaeologist makes recommendations regarding the eligibility for listing in the NRHP and CRHR of any cultural resources that are newly discovered or that may be affected in an unanticipated manner.

Prior to the issuance of the NTP by BLM for the Project, the Project Owner shall provide the Project Archaeologist with copies of the EIS/EIR/PA and maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas, and other project facilities. Maps shall include the appropriate USGS quadrangles and maps at an appropriate scale (e.g., 1:2400 or 1" = 200') for plotting cultural features or materials. If the Project Archaeologist requests enlargements or strip maps for linear facility routes, the Project Owner shall provide copies to the Project Archaeologist and BLM project manager. The BLM project manager shall review map submittals and, in consultation with the Project Archaeologist, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to BLM project manager approval of maps and drawings, unless such activities are specifically approved by the BLM project manager. Ground disturbance is defined as any of the following activities: mowing, grading, disk and roll, pile or stake driving, mechanical excavation, drilling, digging, trenching, blasting, and using high pressure water to cut into the ground. If construction of the Project would proceed in phases, maps and drawings not previously provided shall be provided to the Project Archaeologist and BLM project manager prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the Project Archaeologist and BLM project manager. Weekly, until ground disturbance is completed, the project construction manager

shall provide to the Project Archaeologist and BLM project manager a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week. The Project Owner shall notify the Project Archaeologist and BLM project manager of any changes to the scheduling of the construction phases.

CUL-5: Monitoring and Discovery Plan. Prior to issuance of the NTP, the Applicant (or Project Owner) shall prepare and submit for approval to the BLM a Plan for Archaeological Monitoring, Post-Review Discoveries, and Unanticipated Effects (also referred to as a Monitoring and Discovery Plan or MDP). The MDP shall either be appended to the MOA if an MOA is required or will be standalone document.

On the basis of NRHP and CRHR eligibility determinations, the BLM may work with the Applicant to relocate Project design components to avoid or minimize adverse effects to significant cultural resource values. Where operationally feasible, NRHP- or CRHP-eligible cultural resources shall be protected from direct Project impacts by Project redesign. Project design features may also be used to reduce indirect effects to eligible resources to less than adverse.

Where NRHP- or CRHR-eligible cultural resources cannot be protected from direct and/or indirect effects by Project design, the Applicant shall comply with appropriate mitigative treatment(s) in the MOA and HPTP.

The MDP shall describe a program for avoiding and monitoring those NRHP- and CRHR-eligible cultural resources that can be avoided during Project construction. (Management of these resources during operations and decommissioning shall be addressed in a Long-Term Management Plan described in CUL-3.) For example, the MDP may require that protective fencing or other markers, at the BLM's discretion, be erected and maintained to protect these resources from inadvertent adverse effects during construction. The MDP shall also include maps and narrative discussion of areas considered to be of high sensitivity for discovery of buried archaeological resources. The MDP shall detail provisions for monitoring construction activities in these high-sensitivity areas. It shall also detail the methods, consultation procedures, and timelines for addressing all post-review discoveries as well as unanticipated effects to identified historic properties. To comply with the requirements of CUL-3, the MDP shall include a NAGPRA plan outlining procedures for addressing the discovery of human remains and other NAGPRA objects, including securing the discovery site, notifying the Coroner and tribes, and implementing subsequent steps required by law and regulations.

In addition, the MDP shall include the following specific elements:

1. A general research design that:
 - a. Charts a timeline of all research activities;
 - b. Recapitulates the existing paleoenvironmental, prehistoric, ethnohistoric, ethnographic, and historic contexts and adds to these the additional context of the non-military, historic-period occupation and use of the Chuckwalla Valley/Palo Verde Mesa area, to create a comprehensive historic context for the project vicinity;
 - c. Poses archaeological research questions and testable hypotheses specifically applicable to the archaeological resource types known for this area, based on the research questions developed on the archaeological and historical literature pertinent to this area; and
 - d. Clearly articulates why it is in the public interest to address the research questions that it poses.
2. Protocols shall be specified for the treatment of known and newly discovered prehistoric and historic-period archaeological resource types.
3. Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to cultural

- resources materials and documentation resulting from evaluation and data recovery at both known prehistoric and historic-period archaeological sites and any NRHP- and CRHR-eligible (as determined by the BLM) prehistoric and historic-period archaeological sites discovered during construction. A prescriptive treatment plan shall be included for limited data types.
4. The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground disturbance and post-ground-disturbance analysis phases of the Project shall be specified.
 5. Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.
 6. All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.
 7. The commitment to record on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all encountered cultural resources over 50 years of age shall be stated. In addition, the commitment to curate all archaeological materials excavated and/or recovered as a result of fieldwork under the MDP (i.e., data recovery), in accordance with 36 CFR Part 79 (or if applicable, the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections).
 8. The commitment of the Project Owner to pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the Project shall be stated. The Project Owner shall, through the Project Archaeologist, identify a curation facility that will accept cultural resources materials resulting from the project cultural resources investigations.
 9. The Project Archaeologist shall attest to having access to equipment and supplies necessary for site mapping, photography, and recovery of all cultural resource materials (that cannot be treated prescriptively) from previously identified NRHR-eligible and CRHR-eligible archaeological resources and from NRHR-eligible and CRHR-eligible resources that are encountered during ground disturbance.
 10. The contents, format, and review and approval process of the final Cultural Resource Report (CRR; see CUL-6) shall be described.
 11. Monitoring recommendations for different areas of the direct APE including the level of monitoring intensity based on subsurface sensitivity shall be described.
 12. Procedures for discoveries of human remains including a NAGPRA plan shall be included.
 13. Tribal Participation Plan is strongly encouraged, and if completed should be appended to the MDP.

As described in CUL-4 the Project Archaeologist shall manage all monitoring, mitigation, curation, and reporting activities under the MDP. The Project Archaeologist shall have a primarily administrative and coordination role for the Project. The Project Archaeologist may obtain the services of additional cultural resource specialists, if needed, to assist in monitoring, mitigation, and curation activities. The Project Archaeologist shall have a BLM California cultural resource use permit and all supervisory cultural resource field staff (Principal Investigators and Field Directors or Crew Chiefs) shall be listed on that permit and otherwise meet the requirements outlined in BLM Manual 8150. The Project Owner shall ensure that the Project Archaeologist makes

recommendations regarding the eligibility for listing in the NRHP and CRHR of any cultural resources that are newly discovered or that may be affected in an unanticipated manner.

The MDP shall address monitoring reporting. On forms provided by the BLM project manager, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of noncompliance with the mitigation measures. Copies of the daily monitoring logs shall be provided by the Project Archaeologist to the BLM, if requested by the BLM project manager. From these logs, the Project Archaeologist shall compile a monthly monitoring summary report to be submitted for BLM review monthly. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended. The Project Archaeologist or alternate shall report daily to the BLM project manager on the status of the Project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the Project Archaeologist and approved by the BLM project manager. In the event that the Project Archaeologist believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the BLM project manager for review and approval prior to any change in the level of monitoring. Cultural resources monitoring activities are the responsibility of the Project Archaeologist. Any interference with monitoring activities, removal of a monitor from duties assigned by the Project Archaeologist, or direction to a monitor to relocate monitoring activities by anyone other than the Project Archaeologist shall be considered non-compliance with these Mitigation Measures. Upon becoming aware of any incidents of non-compliance with the Mitigation Measures the Project Archaeologist and/or the Project Owner shall notify the BLM project manager by telephone or e-mail within 24 hours. The Project Archaeologist shall also recommend corrective action to resolve the problem or achieve compliance with the Mitigation Measures. When the issue is resolved, the Project Archaeologist shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided monthly for the review of the BLM project manager.

The MDP shall address the authority to halt ground disturbance during construction. The Project Owner shall only grant authority to halt ground disturbance during construction to the Project Archaeologist, alternate Project Archaeologist, and other supervisory cultural resource field staff (i.e., PI or Field Director listed on the BLM California cultural resource use permit) in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the Project Archaeologist. In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the BLM), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting shall continue during the Project's ground-disturbing activities elsewhere. Additional procedures regarding halting ground disturbance to address a post-review discovery or unanticipated effects shall be described in the MDP.

CUL-6: Cultural Resources Monitoring Report and Cultural Resources Report (CRR). Cultural Resources Monitoring Reports shall be required and must meet BLM requirements. The report shall include documentation of the required cultural/historical sensitivity training for the construction staff held during the pre-grade meeting (see CUL-7). BLM and CDFW shall review the report to determine adequate compliance. The details of the report's structure and contents will be described in the MDP (see CUL-5).

The CRR, if required as the result of a discovery during construction, shall conform to BLM Cultural Resource Use Permit stipulations regarding reporting which include, but are not limited to, those listed in the California Office of Historic Preservation's Preservation Planning Bulletin Number 4(a) December 1989, Archaeological Resource Management Reports (ARMR): Recommended Contents and Format (ARMR Guidelines) for the Preparation and Review of Archaeological Reports.

- CUL-7: Worker Environmental Awareness Program (WEAP).** Prior to issuance of a NTP by the BLM and for the duration of ground disturbance (as defined in CUL-4), the Project Owner shall provide Worker Environmental Awareness Program (WEAP) training to all workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The training shall be prepared by the Project Archaeologist, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The Project Archaeologist shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:
1. A discussion of applicable laws and penalties under the law;
 2. Samples or visuals of artifacts that might be found in the project vicinity;
 3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
 4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
 5. Instruction that only the Project Archaeologist, alternate Project Archaeologist, and supervisory cultural resource field staff have the authority to halt ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the Project Archaeologist;
 6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the Project Archaeologist or supervisory cultural resource field staff, and that redirection of work would be determined by the construction supervisor and the Project Archaeologist;
 7. An informational brochure that identifies reporting procedures in the event of a discovery;
 8. An acknowledgement form signed by each worker indicating that they have received the training; and
 9. A sticker that shall be placed on hard hats indicating that environmental training has been completed.
 10. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the BLM project manager.
- CUL-8: CDFW Archaeological Resources Treatment Plan (CEQA only).** Prior to the initiation of ground-disturbing activities, CDFW will require the Project Owner to retain a Secretary of the Interior-qualified archaeologist to develop and implement an Archaeological Resources Treatment Plan (Treatment Plan) that will address the 23 historical resources determined eligible for the California Register under CEQA. The purpose of the Treatment Plan is to document the procedures to be followed to ensure avoidance or minimization of impacts to cultural resources consistent with CEQA Guidelines Section 15126.4(b), and to lay out a detailed program of mitigation for direct impacts to cultural resources during implementation. The Treatment Plan shall cover all project activities across the entire Project site, and for the life of the Project. For cultural resources located on BLM-administered lands, the Treatment Plan shall be subject to review and approval by the BLM.
- The Treatment Plan shall include, but not be limited to, the following elements, and shall be consistent with all other mitigation measures contained in this document, including treatment requirements developed as part of an MOA (CUL-1) and Historic Properties Treatment Plan (CUL-2) if these documents become necessary:

- Specific measures to be taken to avoid impacts, where possible, to the 23 significant cultural resources that have been determined by CDFW to be historical resources, such as the designation of Environmentally Sensitive Areas. The 23 historical resources are listed in Table 3.5-1 of this document.
- Preparation and implementation of a data recovery plan to be used to guide the data recovery excavation of the 23 historical resources eligible under California Register criterion 4, and that cannot be avoided. The data recovery plan shall include, minimally, a regional cultural setting, appropriate regional research questions, field and laboratory methods for the data recovery effort, and analysis and reporting requirements. For data recovery affecting archaeological resources on BLM-administered land, fieldwork will require a BLM-issued Archaeological Resources Protection Act (ARPA) permit.
- Identification and implementation of specific treatment measures to be followed for the 6 resources determined eligible under California Register criterion 1 due to tribal importance, and that cannot be avoided. The treatment measures shall be developed through consultation among CDFW, Native American Heritage Commission-listed traditionally culturally affiliated tribes, BLM as the land owner. The treatment measures shall mitigate for impacts as they relate to the resources' significance under criterion 1. Treatment measures may include detailed resource documentation, preparation of interpretative or educational materials, or other measures identified in coordination with tribes.

Following implementation of data recovery excavation and other treatment protocols, a report documenting the methods and results of the data recovery and treatment program shall be prepared by the SOI-qualified archaeologist, following Archaeological Resources Management Report (ARMR) guidelines, and shall be submitted to CDFW and BLM for review and approval.

CUL-9: CDFW Tribal Cultural Resources (CEQA only). Prior to construction, all construction personnel will receive training from a qualified cultural resources specialist regarding the appropriate work practices necessary to effectively comply with the applicable environmental laws and regulations. This training will include a presentation or prepared materials detailing procedures to be followed upon discovery or suspected discovery of tribal cultural resources (TCRs). If potential archaeological resources, TCRs, or human remains are discovered during project activities, then work will cease in the immediate vicinity of the find. If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in Mitigation Measure CUL-5 (Monitoring and Discovery Plan) in conjunction with the following provisions specific to the management of TCRs. The Project Archaeologist or another qualified cultural resources specialist under his/her supervision will be contacted to inspect the find, and to assess if the resource is of Native American origin or otherwise has potential to be considered a TCR. If the resource is a potential TCR, the lead agency will be immediately contacted. Depending on the nature of the find, if the lead agency determines, pursuant to Public Resources Code Section 21074 (a)(2), that the find appears to be a TCR in its discretion and supported by substantial evidence, the Native American Heritage Commission-listed traditionally culturally affiliated tribes shall be contacted and provided a reasonable period of time to make recommendations. These representatives will be provided the opportunity to inspect the find on site. The lead agency will review recommendations, enlisting the aid of a qualified archaeologist or other specialists if needed, and move forward with management options determined to be reasonable and feasible. The project may recommence ground-disturbance activities in the vicinity of the find after it has complied with agency-approved recommendations. If human remains are found, then the procedures outlined in Mitigation Measure CUL-3 will be implemented.

CUL-10: Tribal Observer (CEQA only). Prior to any ground disturbances within the Project area, the Project Owner shall enter into a contract with and retain monitors designated by Tribal representatives as directed by CDFW pursuant to its AB 52 consultation efforts. These monitors shall be known as the Tribal Observers for this Project. Documentation of retention and correspondence shall be submitted to the CDFW.

Energy Conservation

No mitigation is required.

Geology and Soil Resources

- AQ-1: **Dust Control Plan** (see Air Resources section)
BIO-5: **Staging, Stockpiling, and Materials Storage** (see Biological Resources section)
BIO-14: **SWPPP and DESCP** (see Biological Resources section)
BIO-18: **Restoration Plan** (see Biological Resources section)
BIO-19: **Jurisdictional Waters and Riparian Habitat** (see Biological Resources section)

Hazards and Hazardous Materials

- BIO-8: **Hazardous Spills** (see Biological Resources section)

Land Use, Lands, and Realty

No mitigation is required.

Noise

No mitigation is required.

Paleontological Resources

- PALEO-1: **Paleontological Resource Monitoring and Mitigation Plan.** Prior to the start of any Project-related construction activities, the Project Owner shall retain a BLM-approved paleontologist to create and implement a Project-specific Paleontological Resource Monitoring and Mitigation Plan to be approved by the BLM. The qualified paleontologist shall be responsible for implementing all the paleontological conditions of approval and for using qualified personnel to assist in this work.
- PALEO-2: **Preconstruction Resource Collection.** Prior to the initiation of any ground-disturbing activities, including geotechnical work, grubbing, or grading, all scientifically significant specimens will be collected from the surface of the Project site. This includes the specimens noted but not collected during prior surveys by AECOM (2018), as well as any previously undiscovered localities that may have been exposed by erosion in the interim. The qualified paleontologist will work with the BLM to develop project-specific significance definitions, sampling protocols, and procedures for screening sites for microfauna (as identified by the AECOM survey [2018]). Collection activities shall be conducted in accordance with BLM guidelines, and carried out by BLM-approved paleontological staff (2007, 2009). Any paleontological fieldwork occurring on lands administered by the BLM will require a Paleontological Resources Use Permit issued by the BLM state office. All specimens collected shall be curated with a BLM-approved repository.
- PALEO-3: **Worker Environmental Awareness Program (WEAP).** Prior to the start of Project-related construction activities, a WEAP shall be developed by the qualified paleontologist. The WEAP shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources. The training program shall also include the set of reporting procedures that workers are to follow if paleontological resources are encountered during Project activities. The WEAP may be combined with other environmental training programs for the project.

PALEO-4: Construction Measures. Construction phase measures shall be defined within a Project-specific Paleontological Monitoring and Mitigation Plan prepared during the pre-construction phase and shall include the following:

- All ground-disturbing activities shall be monitored by a BLM-approved paleontologist. The level and intensity of monitoring during ground-disturbing activities shall be described in the Project-specific Paleontological Monitoring and Mitigation Plan.
- The Project-specific Paleontological Monitoring and Mitigation Plan shall include procedures for fossil eggshell discovery and recovery. If fossil eggshell specimens are recovered from deep augering (8 to 20 feet), some shall be radiocarbon dated to determine the age of subsurface deposits. The sample size for dating shall be determined by the qualified paleontologist, in consultation with the BLM.
- One standard sediment sample as defined by SVP (2010) shall be processed from each of the seven legal township sections impacted. These samples may be collected during construction activities and utilize materials excavated for construction of the Project. Separate sampling is not required.
- Recovered significant fossils shall be prepared, identified, reported, and curated in a BLM-approved paleontological repository.

PALEO-5: Paleontological Resources Monitoring Report. The Project Owner shall ensure preparation of a paleontological resources monitoring report by the qualified paleontologist. The report shall be completed following the analysis of any recovered fossil materials and related information. The contents of the report shall be described in the Paleontological Monitoring and Mitigation Plan and shall include, but not be limited to, a description and inventory list of recovered fossil materials (if any); a map showing the location of paleontological resources found in the field; determinations of scientific significance; and a statement by the qualified paleontologist that project impacts to paleontological resources have been mitigated.

Recreation and Public Access (Off-Highway Vehicles)

REC-1: Temporary Route Closure. No less than 60 days prior to construction, the Project Owner shall coordinate with the Authorized Officer (AO) administering NECO Plan designated Open Route MM703 (Powerline Road) to establish temporary closure of the route to avoid construction area hazards, if the route is deemed unsafe to use during construction. Coordination shall include determination of the most appropriate detour routes for OHV users, including consideration of existing conditions at the time such coordination occurs (e.g., if other nearby projects result in changes in the local open route system). The Project Owner shall post a public notice of the temporary route closure and detour routes at the locations listed below. The notice shall include highly visible materials, colors, and/or finishes and large primary text to attract the attention of OHV users; such design details shall be specified by the AO. The notice shall provide a map of the closure and alternate routes, and shall specify penalties for any off-route OHV activities. The Project Owner shall document its coordination efforts with the AO and submit this documentation to the BLM and other agencies affected at least 30 days prior to construction. Signage locations include, but may not be limited to the following (the NECO Plan AO may require additional locations):

- a. Intersection of Wiley's Well Road and open route MM712, in an orientation visible to southbound travelers on Wiley's Well Road and westbound travelers on MM712.
- b. Intersection of open routes MM1086 and MM712, in an orientation visible to southbound travelers on MM1086 south of this intersection.
- c. Intersection of open routes MM703 and MM1092, in an orientation visible to northbound travelers on MM703 northwest of this intersection.

Furthermore, the NECO Plan AO may require changes to the required information and location of detour signage, at the Project Owner's expense, if route closures associated with any nearby projects would affect the accuracy or adequacy of the posted signage during the period of MM703 closure associated with this project.

- REC-2: **LTVA Permit Documentation.** Prior to construction, the BLM shall document the number of permits issued and visitor-days for the Mule Mountains and Midland LTVAs for the previous two fiscal years and provide this information to the Project Owner to establish a baseline for use without the Project. During construction, the BLM shall monitor the use of the Mule Mountains and Midland LTVAs, including through the number of permits purchased compared to typical years and through observation during normal patrols. If an increase of 15 percent or more in the number of permits issued compared to prior years occurs, and if BLM determines that use of LTVAs by Project construction workers is resulting in physical deterioration of developed campground facilities or natural elements, or resulting in the accumulation of excess trash, the Project Owner shall provide for additional garbage pickup service, janitorial visits, and maintenance and repairs, as needed, to ensure that Project-related use does not cause substantial physical deterioration within the LTVAs, consistent with BLM management performance standards for the LTVA. BLM shall conduct quarterly reviews of LTVA use and inform the Project Owner in writing if and when use exceedances and physical deterioration are confirmed and shall provide specific itemized estimates of the additional necessary services to maintain the LTVA consistent with a typical level of use. The Project Owner shall provide appropriate funding to BLM based on these estimates within 30 days of written notification, or if approved by the BLM AO, shall contract with service providers to provide these additional services directly within 45 days of written notification. If funding is provided, the BLM shall ensure that the documented services are provided within 30 days of receipt of funds. The Project Owner shall also coordinate with the County of Riverside to provide either hardening of the access roads (e.g., Wiley's Well Road) or monthly blading during the LTVA season.

Socioeconomics, Environmental Justice, Population and Housing

No mitigation is required.

Special Designations

No mitigation is required.

Transportation

No mitigation is required.

Utilities and Public Services

- BIO-15: **SWPPP and DESCP** (see Biological Resources section)
- BIO-16: **Weed Management** (see Biological Resources section)
- BIO-32: **Bird and Bat Conservation Strategy** (see Biological Resources section)
- FIRE-1: **Fire Safety Plan** (see Wildland Fire Ecology section)
- WAT-1: **Groundwater Monitoring and Reporting Plan** (see Water Resources section)
- WAT-2: **Colorado River Water Supply Plan** (see Water Resources section)

PSU-1: Waste Recycling Plan (WRP). Prior to issuance of a grading and/or building permit, the Project Owner shall submit a WRP to the Lead Agencies and to the Riverside County Department of Waste Resources. At a minimum, the WRP must identify the materials (i.e., solar panels, cardboard, concrete, asphalt, wood, etc.) that will be generated by construction and development; the projected amounts of each; the applicable state and local laws and regulations governing waste disposal and recycling (e.g., Department of Toxic Substances Control regulations regarding photovoltaic modules); the measures/methods that will be taken to recycle, reuse, and/or reduce the amount of materials; the facilities and/or haulers that will be utilized; and the targeted Project-specific recycling or reduction rate. During construction, the project site shall have, at a minimum, two bins: one for waste disposal and the other for the recycling of Construction and Demolition (C&D) materials. Additional bins are encouraged to be used for further source separation of C&D recyclable materials, and shall be provided if required by applicable state and local laws. The Project Owner shall maintain accurate records (receipts) for recycling of C&D recyclable materials and solid waste disposal; arrangements for such receipts can be made through the franchise hauler.

Prior to final building inspection, the Project Owner shall present evidence (i.e., receipts or other type of verification) to demonstrate project compliance with the approved WRP to the Planning Division of the Riverside County Department of Waste Resources. Receipts must clearly identify the amount of waste disposed and C&D materials recycled.

Prior to Lead Agency approval of the Decommissioning Plan in Mitigation Measure BIO-34, the Project Owner shall submit a WRP to the Lead Agencies and the Riverside County Department of Waste Resources. At a minimum, the WRP must identify the materials (i.e., solar panels, cardboard, concrete, asphalt, wood, semiconductor materials, etc.) that will be generated by the decommissioning and closure of the facility, the projected amounts, the measures/methods that will be taken to recycle, reuse, and/or reduce the amount of materials, the facilities and/or haulers that will be utilized, and the targeted recycling or reduction rate. During the decommissioning and closure, the project site shall have, at a minimum, two (2) bins: one for waste disposal and the other for the recycling of Construction and Demolition (C&D) materials. Disposal of any toxic semiconductor materials, such as cadmium telluride, copper indium gallium selenide, gallium indium phosphide, and gallium arsenide, will follow existing or future regulations from the Department of Toxic Substances Control. Additional bins are encouraged to be used for further source separation of C&D recyclable materials. Accurate record keeping (receipts) for recycling of C&D recyclable materials and solid waste disposal must be kept. Arrangements can be made through the franchise hauler.

Visual Resources

AQ-1: Dust Control Plan (see Air Resources section)

BIO-18: Vegetation Communities Restoration and Compensation (see Biological Resources section)

VIS-1: Design. Prior to construction, the BLM Compliance Project Manager (CPM) and Project Owner shall meet with one or more BLM landscape architects and/or other scenic resource specialists trained in BLM Visual Resources Management and approved by the BLM CPM to coordinate on the VRM mitigation strategy and confirm the compliance checking schedule and procedures. The BLM landscape architect(s) and/or approved scenic resource specialist(s) shall review the Project final design drawings and construction documents for completeness with regard to the visual mitigation elements, assuring that requirements and commitments are adequately addressed.

The Project Owner and/or its contractor(s) shall integrate the following visual design elements into the construction plans, details, drawings, and specifications (including, but not be limited to, grubbing and clearing, vegetation thinning and clearing, grading, restoration, drainage, and structural plans) submitted to BLM and CDFW. Visual design elements shall be measureable by size and able to be monitored while under construction, while operational, and when decommissioned, and plans

must demonstrate how VRM objectives will be met, monitored, and measured for conformance. Visual design elements must at a minimum include:

1. ***Reduce contrast caused by graded roads:*** To reduce contrast caused by exposing un-oxidized soils and rock in roadways, at select locations of concern from KOPs, spot applications of a product such as Permeon shall be used to dull and darken the ground plane in a short time.
2. ***Color treat structures to reduce contrasts with the existing landscape:*** The Project Owner shall color treat all operation and maintenance facilities, rear surfaces of the modules, frames, tracker structures (if applicable), and other ancillary on-site facilities using a BLM standard environmental color that is identified through a site study for color and texture selection and approved by the BLM. Grouped structures shall be treated with the same color. Further, materials, coating, or paints having little or no specular or reflective qualities shall be used on structures including, but not limited to, buildings, tanks, fences, fence railings, poles, aboveground pipes and culverts, and reverse sides of signs and guardrails. Substation equipment shall be specified with a low-reflectivity neutral finish. Insulators at substations and on takeoff equipment shall be non-reflective and non-refractive. The surfaces of substation structures shall be given low-reflectivity finishes with neutral colors that contrast minimally with the surrounding landscape. Chain-link fences shall have a dulled, darkened finish to reduce contrast.
3. ***Lighting:*** The Project Owner shall prepare a lighting plan that documents how security and safety lighting will be designed and installed to minimize night-sky impacts during facility operation. The lighting plan shall include the safety and security reasons that require the need for all nighttime lighting on the facility. Wherever feasible, consistent with safety and security, lighting shall be kept off when not in use. The lighting plan shall include a process for promptly addressing and mitigating complaints about potential lighting impacts. The Project Owner shall submit the lighting plan to the BLM for review and approval at least 30 days prior to construction. The lighting plan must include, but is not limited to the following specifications:
 - a. *Nighttime lighting* – Except as required to meet safety and security requirements, there shall be no exterior nighttime lighting on the Project site during operation. For these purposes, “nighttime” means the period of time between two hours after sunset until sunrise.
 - b. *Number and installation* – Lighting for facilities shall not exceed the minimum number of lights and brightness required for safety and security, and shall not cause excessive reflected glare. Lights shall be directed downward or toward the area to be illuminated. All fixtures must be mounted properly, at the proper angle. Light fixtures shall not spill light beyond the Project boundary.
 - c. *Lighting types* – Lighting shall be amber in color when accurate color rendition is not required. Use of low-pressure sodium lamps or yellow LED lighting or equivalent is required, and no bluish-white lighting shall be used in permanent outdoor lighting. Except as required to meet minimum safety and security requirements, all permanent lighting shall use full cutoff luminaires that are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the light source), and must meet the Illuminating Engineering Society (IES) glare requirement limiting intensity of light from the luminaire in the region between 80 and 90 degrees from the ground.
 - d. *Timers or motion detectors* – Lights in highly illuminated areas that are not occupied on a continuous basis shall be equipped with timer switches or motion detectors so that the lights operate only when the area is occupied.
 - e. *Protection of biological resources* – The lighting plan shall incorporate operational lighting requirements of Mitigation Measure BIO-13 to ensure that biological resources are protected from nighttime lighting as specified therein.

4. Access road and gen-tie design shall minimize vegetation and ground disturbance and take advantage of existing clearings wherever feasible.
5. Along all off-site access roads, all internal access roads 16 feet or wider, and the gen-tie route, all graveled surfaces, areas to be permanently cleared of vegetation, and (if applicable) cut slopes shall be treated with BLM-approved rock stains or other color treatment appropriate with the surrounding landscape.
6. Openings in vegetation for facilities, structures, and roads shall be feathered and shaped to repeat the size, shape, and characteristics of naturally occurring openings.
7. The gen-tie line shall utilize nonspecular conductors and nonreflective coatings on insulators.

VIS-2: Construction. The Project Owner and/or its contractor(s) shall reduce visual impacts during construction through the following measures:

1. Ensure that equipment operators receive training on visual impact mitigation objectives and activities before construction activities begin.
2. Preserve existing rocks, native vegetation, drainage patterns, and other natural characteristics to the extent feasible.
3. Edges of grubbed and graded areas shall be feathered to reduce form and line contrasts with the existing landscapes.
4. In areas not requiring permanent grubbing and grading, use brush-beating or mowing or use protective surface matting rather than removing vegetation to the extent feasible.
5. Mulch and spread slash from vegetation removal to cover fresh soil disturbances as part of the Restoration Plan described in Mitigation Measure BIO-18.
6. If graveled surfaces are used during construction, reduce the visual color contrast of graveled surfaces with BLM-approved color treatment practices.
7. Use removable or washable markings to indicate surveyor construction activity limits; no paint or permanent discoloring agents shall be applied to rocks or vegetation.
8. Remove all stakes and flagging from the construction area and dispose of them in an approved facility after use.
9. Ensure that lighting for evening construction does not exceed the minimum number of lights and brightness required for safety and security, and does not cause excessive reflected glare. No night lighting shall be used outside of construction hours unless controlled by a timer or motion detector so that it remains off when not in use.

VIS-3: Operation and Maintenance. Terms and conditions for VRM mitigation compliance shall be maintained and monitored on an annual basis for the life of the project for compliance with visual objectives, adaptive management adjustments, and modifications listed below and as necessary and approved by the BLM landscape architect or other designated visual/scenic resource specialist. Minimum measures are as follows:

1. The Project Owner shall maintain revegetated surfaces until a self-sustaining stand of vegetation which does not require supplemental water or fertilizer is re-established and visually adapted to the undisturbed surrounding vegetation.
2. No new disturbance shall be created during operation without completion of a VRM analysis and approval by the BLM AO. If new disturbances are approved by the BLM AO during operation, interim restoration shall be undertaken as soon as possible after disturbances.
3. Painted facilities shall be kept in good repair and repainted when color fades or flakes.

4. Color-treated solar panel backs/supports shall be kept in good repair, and retreated when color fades or flakes.

VIS-4: Glint and Glare Mitigation and Monitoring. Consistent with Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands, the Project Owner shall prepare and submit to the BLM a Glint and Glare Mitigation and Monitoring plan that identifies mitigation measures to minimize the intensity, duration, and geographic extent of glint and glare visible from publicly accessible locations, and provides for monitoring of the effectiveness and maintenance of such measures. The plan shall include, but not be limited to, the following information and mitigation and monitoring requirements:

1. Based on final design including panel and mounting type and solar array configuration, complete final glare modeling for each KOP evaluated in the EIS/EIR using the ForgeSolar PV planning and glare analysis tool.
2. Based on final modeling, program solar tracker arrays contributing to glare to turn away from affected KOPs during the times of day when glare visible at that KOP is generated. This programming need only be applied to the panels/arrays that would cause the glare, as modeled, if generation of glare is limited to a portion of the Project site.
3. Use panels made with textured glass surfaces to diffuse reflected light, or if the use of textured glass panels is found not to be technically feasible, the plan shall describe the reason for its infeasibility.
4. If glare with the potential for temporary after-image remains visible to drivers on I-10, coordinate with Caltrans to place signs warning drivers of the potential for hazardous glare.

VIS-5: Decommissioning and Site Reclamation. The Project Owner shall prepare a Decommissioning and Site Reclamation Plan, covering visual impact mitigation measures, and submit to BLM for approval prior to construction. The following decommissioning and reclamation activities and practices shall be included in the plan and implemented to mitigate visual impacts:

1. Pre-development visual conditions shall be documented and the visual elements of form, line, color, and texture shall be restored to pre-development visual compatibility or to that of the surrounding landscape setting conditions, whichever achieves the better visual quality and most ecologically sound outcome, as approved by the BLM.
2. The plan shall require that all aboveground and near-ground structures be removed. Some structures shall be removed only to a level below the ground surface that will allow reclamation/restoration. Any topsoil that is removed during decommissioning activities shall be salvaged, stockpiled, and reapplied during final reclamation as described under item 6.
3. The plan shall include provisions for monitoring and determining compliance with the Project's visual mitigation and reclamation objectives.
4. Soil borrow areas, cut-and-fill slopes, berms, water bars, and other disturbed areas shall be contoured to approximate naturally occurring slopes, thereby avoiding form and line contrasts with the existing landscapes. The Project Owner shall contour to a rough texture (i.e., use large rocks/boulders, grade uneven surfaces, and/or vegetation mulches/debris) in order to trap seed and to discourage off-road travel, thereby reducing associated visual impacts.
5. A combination of seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas, and staging of decommissioning activities enabling direct transplanting shall be utilized. Where feasible, native vegetation shall be used for revegetating to establish a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape.

6. Any topsoil that has been removed and stockpiled during decommissioning activities shall be reapplied to disturbed areas, and the areas shall be revegetated by using a mix of native species selected for visual compatibility with existing vegetation, where applicable, or by using a mix of native and non-native species if necessary to ensure successful restoration. Gravel and other surface treatments shall be removed or buried.
7. Rocks, brush, and vegetal debris shall be restored whenever possible to approximate preexisting visual conditions.
8. Edges of revegetated areas shall be feathered to reduce form and line contrasts with the existing landscapes.
9. The Plan shall include a decommissioning VRM Monitoring schedule, terms for monitoring, and the conditions and methods of measurement for determining compliance.

Water Resources

BIO-14: **SWPPP and DESCP** (see Biological Resources section)

WAT-1: **Groundwater Monitoring, Reporting, and Mitigation Plan.** Before the Project Owner or its contractors use groundwater pumped from any well (onsite or offsite) that extracts water from the Chuckwalla Valley Groundwater Basin (CVGB) or Palo Verde Mesa Groundwater Basin (PVMGB), the Project Owner shall retain a BLM-approved qualified hydrogeologist to develop a Groundwater Monitoring, Reporting, and Mitigation Plan (GMRMP), in coordination with the BLM, to ensure that groundwater wells surrounding the Project site and Project supply well(s) are not adversely affected by project activities. The Project Owner shall submit the GMRMP to the BLM for review and approval. Additionally, although no Groundwater Sustainability Agencies (GSAs) has been established for the Riverside County portions of the CVGB and PVMGB, in the event that such agencies have been established when the GMRMP is developed, the Project Owner also shall submit the plan to the GSAs. The Project Owner must obtain BLM approval for the GMRMP prior to the start of construction of any groundwater well or prior to the start of pumping from any existing well in the CVGB or PVMGB, and shall implement the approved GMRMP throughout any Project phase that pumps groundwater for consumptive use.

The GMRMP shall provide detailed methodology for monitoring site groundwater levels and comparisons for levels within the basin including identification of the closest private wells to the Project site. Monitoring shall be performed during pre-construction, construction, and operation of the project, with the intent to establish pre-construction and project-related groundwater level and quantitatively compared against observed and simulated trends near the project pumping wells. The GMRMP shall include a schedule for submittal of quarterly data reports by the project owner to the designated agencies and the GSAs, if established, for the duration of the construction period. These quarterly data reports shall be prepared and submitted for review and approval, and shall include water level monitoring data and effect on the nearest offsite private wells. The designated agencies shall determine whether groundwater wells surrounding the project site and project supply well(s) are adversely affected by project activities in a way that requires additional mitigation and, if so, shall determine what measures are needed. Examples of additional mitigation could include cessation of pumping at the Project site until groundwater levels return to levels that allow nearby wells to resume pre-Project pumping levels or compensation for whatever additional equipment is necessary to lower nearby pumps to levels that can adequately continue pumping, if approved by the designated agencies. After the completion of construction, the Project owner and the BLM shall jointly evaluate the effectiveness of the GMRMP and determine if monitoring frequencies or procedures should be revised or eliminated.

WAT-2: **Colorado River Water Supply Plan.** Prior to the onset of water pumping for consumptive use, the project owner shall prepare a Colorado River Water Supply Plan (Plan) and submit this Plan to the

BLM and the Colorado River Board of California for review and approval, and to the Metropolitan Water District of Southern California (MWD; this agency holds a contract to provide a legally authorized and reliable water supply to replace water from the Colorado River) for review and comment. These agencies together are referred to as the “designated agencies.” The Plan shall demonstrate the availability of and identify best available measures that will be taken to replace water on an acre-foot to acre-foot basis, if the project results in consumption of any water from below the Colorado River Accounting Surface. These measures will ensure that no allocated water from the Colorado River is consumed without entitlement to that water. The plan shall also include monitoring and reporting protocols to ensure that water conservation/offset activities are effectively implemented and achieve the intended purpose of replacing Colorado River water diversions. If the project does not result in diversion of Colorado River water (via pumping from near [within +/- 0.84 feet at the 95-percent confidence level], equal to, or below the identified accounting surface elevation for the well-used for water supply) it will not be necessary to implement the water conservation/offset activities identified in the Colorado River Water Supply Plan. However, the Plan must be approved by all the designated agencies prior to project-related groundwater pumping so that if at any time during the Project it is determined that groundwater is being produced from below the Colorado River Accounting Surface at the well-used for water supply, the requirements described in this measure shall be immediately implemented, starting with the cessation of groundwater pumping and calculation of the quantity of groundwater pumped from below the accounting surface.

Wildland and Fire Ecology

BIO-15: **Wildfire Prevention** (see Biological Resources section)

BIO-16: **Weed Management** (see Biological Resources section)

FIRE-1: **Fire Safety Plan.** The Project Owner shall prepare and implement a Fire Safety Plan to ensure the safety of workers and the public during Project construction, operation and maintenance, and decommissioning activities. The Project Owner must provide the Fire Safety Plan to the BLM for review and approval and to the Riverside County Fire Department (RCFD) for review and comment before the BLM will issue a Notice to Proceed (NTP). The Fire Safety Plan shall include, but not be limited to, the following elements:

1. Procedures for minimizing potential ignition, including, but not limited to, vegetation clearing, parking requirements/restrictions, idling restrictions, smoking restrictions, proper use of gas-powered equipment, and hot work restrictions.
2. Work restrictions during Red Flag Warnings and High to Extreme Fire Danger days.
3. All internal combustion engines used at the Project site shall be equipped with spark arrestors. Spark arrestors shall be in good working order.
4. Once initial two-track roads have been cut and initial fencing completed, light trucks and cars shall be used only on roads where the roadway is cleared of vegetation. Mufflers on all cars and light trucks shall be maintained in good working order.
5. Fire rules shall be posted on the project bulletin board at the contractor’s field office and areas visible to employees.
6. Equipment parking areas and small stationary engine sites shall be cleared of all flammable materials.
7. Fire suppression equipment requirements when spark-generating work is being implemented.
8. Smoking shall be prohibited in all vegetated areas and within 50 feet of combustible materials storage, and shall be limited to paved areas or areas cleared of all vegetation.

9. Each Project construction site (if construction occurs simultaneously at various locations) and the proposed solar plant site shall be equipped with fire extinguishers and fire-fighting equipment sufficient to extinguish small fires.
10. The Project Owner shall coordinate with the BLM and RCFD to create a training component for emergency first responders to prepare for specialized emergency incidents that may occur at the Project site.
11. All construction workers, plant personnel, and maintenance workers visiting the plant and/or transmission lines to perform maintenance activities shall receive training on fire prevention procedures, the proper use of fire-fighting equipment, and procedures to be followed in the event of a fire. Training records shall be maintained and be available for review by the BLM and RCFD. Fire prevention procedures shall be included in the Project's Worker Environmental Awareness Program (WEAP) (Mitigation Measure BIO-17).
12. Vegetation near all solar panel arrays, ancillary equipment, and access roads shall be controlled through periodic cutting and spraying of weeds, in accordance with the Weed Management Plan.
13. The BLM and RCFD shall be consulted during plan preparation and fire safety measures recommended by these agencies included in the plan.
14. The plan shall list fire prevention procedures and specific emergency response and evacuation measures that would be required to be followed during emergency situations.
15. All on-site employees shall participate in annual fire prevention and response training exercises with the BLM and RCFD.
16. The plan shall list all applicable wildland fire management plans and policies established by state and local agencies and demonstrate how the Project will comply with these requirements.
17. The Project Owner shall designate an emergency services coordinator from among the full-time on-site employees who shall perform routine patrols of the site during the fire season equipped with a portable fire extinguisher and communications equipment. The Project Owner shall notify the BLM and RCFD of the name and contact information of the current emergency services coordinator in the event of any change.
18. Remote monitoring of all major electrical equipment (transformers and inverters) will screen for unusual operating conditions. Higher than nominal temperatures, for example, can be compared with other operational factors to indicate the potential for overheating which under certain conditions could precipitate a fire. Units could then be shut down or generation curtailed remotely until corrective actions are taken.
19. Fires ignited onsite shall be immediately reported to BLM and the RCFD.

The engineering, procurement, and construction contract(s) for the project shall clearly state the requirements of this mitigation measure.

Appendix C

Acronyms and Abbreviations, Glossary, References

APPENDIX C

Acronyms and Abbreviations, Glossary, and References

Acronyms and Abbreviations

AB	Authorized Biologist
AC	Alternating current
ACEC	Area of Critical Environmental Concern
ACECs	Areas of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
ADT	Average daily traffic volumes
AFY	Acre-feet per year
AMSL	Above mean sea level
AO	Authorized Officer
APE	Area of Potential Effects
APLIC	Avian Power Line Interaction Committee
APNs	Assessor's Parcel Numbers
ARB	Air Resources Board
ASCE	American Society of Civil Engineers
BAAB	Blythe Army Air Base
BBCS	Bird and Bat Conservation Strategy
BLM	Bureau of Land Management
BMPs	Best Management Practices
BMSP	Blythe Mesa Solar Project
BPD	Blythe Police Department
BRMMRP	Biological Resources Mitigation, Monitoring, and Reporting Plan
BRTR	Biological Resources Technical Report
CAAQS	California Air Quality Standards
C-AMA	California-Arizona Maneuver Area
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CBOC	California Burrowing Owl Consortium
CCD	Census County Division
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CDTFA	California Department of Tax and Fee Administration
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act

CFGC	California Fish and Game Commission
CFR	Code of Federal Regulations
CH ₄	Methane
CHRIS	California Historical Resources Information System
CHU	Critical Habitat Unit
CIWMP	Countywide Integrated Waste Management Plan
CMA	Congestion Management Agency
CMAs	Conservation and Management Actions
CNDDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CO	Carbon monoxide
CO ₂	Carbon dioxide
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRMP	Cultural Resources Monitoring Plan
CRPR	California Rare Plant Rank
CRS	Colorado River Substation
CUPA	Certified Unified Program Agency
CVGB	Chuckwalla Valley Groundwater Basin
CVSP	Chuckawalla Valley State Prison
CWA	Clean Water Act
DB	Designated Biologist
DC	Direct Current
DEH	Department of Environmental Health
DESCP	Drainage, Erosion, and Sediment Control Plan
DFA	Development Focus Area
DOI	Department of the Interior
DOT	California Department of Transportation
DPR	Department of Park and Recreation
DRECP	Desert Renewable Energy Conservation Plan
DTC	Desert Training Center
DTSC	Department of Toxic Substances Control
DWMA	Desert Wildlife Management Area
DWR	Department of Water Resources
ECCMP	Environmental and Construction Compliance Monitoring Program
EIA	Energy Information Administration
EIC	Eastern Information Center
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EMFs	Electromagnetic fields
EPA	Environmental Protection Agency
ESAs	Environmentally Sensitive Areas
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHSZs	Fire Hazard Severity Zones
FHWA	Federal Highway Administration
FIRMs	Flood Insurance Rate Maps
FLPMA	Federal Land Policy and Management Act of 1976

FRAs	Federal responsibility areas
FTA	Federal Transit Administration
GHGs	Greenhouse gases
GWP	Global warming potentials
GWR	Groundwater Recharge
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons
HMANA	Hawk Migration Association of North America
HMA	Herd management areas
HMBP	Hazardous Materials Business Plan
HPTP	Historical Properties Treatment Plan
HVAC	Heating, ventilation and air conditioning equipment
I-10	Interstate 10
IEC	International Electrotechnical Commission
IEPR	Integrated Energy Policy Report
IES	Illuminating Engineering Society
IOUs	Investor-owned utilities
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
ISP	Ironwood State Prison
ITP	Incidental Take Permit
KOPs	Key Observation Points
LEID	Low-environmental impact design
LOS	Level of service
LR2000	BLM's Legacy Rehost 2000
LRA	local responsibility area
LSAA	Lake and Streambed Agreement
LTVA	Long-Term Visitor Area
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MLD	Most Likely Descendant
MMRCP	Mitigation Monitoring, Reporting, and Compliance Program
MND	Mitigated Negative Declaration
MUC-L	Multiple Use Class Limited Use
MUCs	Multiple use classes
MUN	Municipal and Domestic Supply
MW	Megawatts
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NCAs	National Conservation Areas
NCCP	Natural Community Conservation Plan
NECO	Desert Coordinated Management Plan
NEPA	National Environmental Policy Act
NFWF	National Fish and Wildlife Foundation
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic and Safety Administration

NO ₂	Nitrogen dioxide
NOA	Notice of Availability
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NTP	Notice to Proceed
NWCG	National Wildfire Coordinating Group
O ₃	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OHV	Off-highway vehicles
OSHA	Occupational Safety and Health Administration
OWTS	Onsite Wastewater Treatment Systems
PA	Plan Amendment
PCE	Passenger Car Equivalent
PFCs	Perfluorocarbons
PFYC	Fossil Yield Classification System
PM	Particulate Matter
POD	Plan of Development
PPV	Peak particle velocity
PRC	Public Resources Code
PRPA	Paleontological Resources Preservation Act
PSD	Prevention of Significant Deterioration
PUP	Pesticide Use Proposal
PV	Photovoltaic
PVC	Polyvinyl Chloride
PVMGB	Palo Verde Mesa Groundwater Basin
PVUSD	Palo Verde Unified School District
PVVAP	Palo Verde Valley Area Plan
PVUTA	Palo Verde Valley Transit Agency
RCDEH	Riverside County Department of Environmental Health
RCDWR	Riverside County Department of Waste Resources
RCFD	Riverside County Fire Department
RCNM	Roadway Construction Noise Model
RCP	Regional Comprehensive Plan
RCRA	Resource Recovery Act of 1976
RCSD	Riverside County Sheriff's Department
RCTC	Riverside County Transportation Commission
REAT	Renewable Energy Action Team
RMIS	Recreation Management Information System
RMS	Root Mean Square
ROD	Record of Decision
ROVE	Highway Vehicle Enforcement Program
ROW	Right-of-way
RPOSD	Regional Park and Open-Space District

RPS	Renewables Portfolio Standard
RV	Recreational Vehicle
RWQCBs	Regional Water Quality Control Boards
SCADA	Comprehensive Supervisory Control and Data Acquisition
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SDSs	Safety Data Sheets
SEZ	Solar Energy Zone
SF6	Sulfur Hexafluoride
SGHAT	Solar Glare Hazard Analysis Tool
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plans
SMARTS	Stormwater Multiple Applications and Report Tracking Systems
SMZs	Sand Migration Zones
SO2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPRR	Southern Pacific Rail Road
SR	State Route
SRAs	Within State Responsibility Areas
SS	Status Species
SSC	Species of Special Concern (CDFW)
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TDS	Total Dissolved Solids
UL	Underwriters Laboratory
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency's
USFS	U.S. Forest Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
UXO	Construction Unexploded Ordnance
MEC	Munitions and Explosives of Concern
VOCs	Volatile Organic Compounds
VRM	Visual Resource Management
VRTR	Visual Resources Technical Report
WBWG	Western Bat Working Group
WDRs	Waste Discharge Requirements
WEAP	Worker Environmental Awareness Program
WHMA	Wildlife Habitat Management Area
WSA	Water Supply Assessment
WSAs	Wilderness Study Areas

Glossary

A

Air Basin: A regional area defined for state air quality management purposes based on considerations that include topographic features that influence meteorology and pollutant transport patterns, and political jurisdiction boundaries that influence the design and implementation of air quality management programs.

Air Quality Control Region: A regional area defined for federal air quality management purposes based on considerations that include topographic features that influence meteorology and pollutant transport patterns, and political jurisdiction boundaries that influence the design and implementation of air quality management programs.

Alluvium: A fine-grained fertile soil consisting of mud, silt, and sand deposited by flowing water on flood plains, in river beds, and in estuaries.

Alluvial Fan: A fan-shaped material of water-deposited material.

Ambient Air Quality Standards (AAQS): A combination of air pollutant concentrations, exposure durations, and exposure frequencies that are established as thresholds above which adverse impacts to public health and welfare may be expected. Ambient air quality standards are set on a national level by the U.S. Environmental Protection Agency. Ambient air quality standards are set on a state level by public health or environmental protection agencies as authorized by state law.

Ambient Air: Outdoor air in locations accessible to the general public.

Area of Critical Environmental Concern (ACEC): A special management area designated by BLM to protect significant historic, cultural, or scenic values; fish and wildlife resources; natural process or systems; and/or natural hazards; that:

- a. has more than locally significant qualities which give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource;
- b. has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change;
- c. has been recognized as warranting protection in order to satisfy national priority concerns or to carry out the mandates of Federal Land Management and Practices Act (FLMPA);
- d. has qualities which warrant highlighting in order to satisfy public or management concerns about safety and public welfare; and/or
- e. poses a significant threat to human life and safety or to property.

Area of Potential Effects (APE): The geographic area or areas within which an action may directly or indirectly cause changes in the character or use of historic properties, if such properties exist.

Attainment Area: An area that has air quality as good as or better than a national or state ambient air quality standard. A single geographic area may be an attainment area for one pollutant and a non-attainment area for others.

B

Best Management Practices (BMPs): A practice or combination of practices that are determined to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts.

C

Cancer: A class of diseases characterized by uncontrolled growth of somatic cells. Cancers are typically caused by one of three mechanisms: chemically induced mutations or other changes to cellular DNA; radiation induced damage to cellular chromosomes; or viral infections that introduce new DNA into cells.

Carbon Monoxide (CO): A colorless, odorless gas that is toxic because it reduces the oxygen-carrying capacity of the blood.

Characteristic: A distinguishing trait, feature, or quality.

Characteristic Landscape: The established landscape within an area being viewed. This does not necessarily mean a naturalistic character. It could refer to an agricultural setting, an urban landscape, a primarily natural environment, or a combination of these types.

Climate: A statistical description of daily, seasonal, or annual weather conditions based on recent or long-term weather data. Climate descriptions typically emphasize average, maximum, and minimum conditions for temperature, precipitation, humidity, wind, cloud cover, and sunlight intensity patterns; statistics on the frequency and intensity of tornado, hurricane, or other severe storm events may also be included.

Community Noise Equivalent Level (CNEL): A 24-hour average noise level rating with a 5 dB penalty factor applied to evening noise levels and a 10 dB penalty factor applied to nighttime noise levels. The CNEL value is very similar to the Day-Night Average Sound Level (Ldn) value, but includes an additional weighting factor for noise during evening hours.

Contrast: Opposition or unlikeness of different forms, lines, colors, or textures in a landscape.

Contrast Rating: A method of analyzing the potential visual impacts of proposed management activities.

Corrosive Soils: Potential soil-induced electrochemical or chemical action that could corrode or deteriorate concrete, reinforcing steel in concrete structures, and bare-metal structures.

Cretaceous: In geologic history the third and final period of the Mesozoic era, from 144 million to 65 million years ago, during which extensive marine chalk beds formed.

Criteria Pollutant: An air pollutant for which there is a national ambient air quality standard (carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, inhalable particulate matter, fine particulate matter, or airborne lead particles).

Critical Habitat: Habitat designated by the U.S. Fish and Wildlife Service under Section 4 of the federal Endangered Species Act and under the following criteria: 1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and that may require special management of protection; or 2) specific areas outside the geographical area by the species at the time it is listed but that are considered essential to the conservation of the species.

Cryptobiotic Soils: A type of biological soil crust that occurs in hot desert areas, such as the Mojave and Sonoran deserts, comprised of a complex mosaic of cyanobacteria, lichens, mosses, or other bacteria. Cyanobacterial filaments weave through the top few millimeters of soil, gluing loose particles together and forming a matrix that stabilizes and protects soil surfaces from erosive forces (BLM, 2001).

Cultural Modification: Any man-caused change in the land form, water form, vegetation, or the addition of a structure which creates a visual contrast in the basic elements (form, line, color, texture) of the naturalistic character of a landscape.

Cultural Resource: A location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological and historical sites, structures, buildings, objects, artifacts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains or areas where significant human events occurred, even

though evidence of the events no longer remains. And they may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups.

Cultural Resource Integrity: The condition of a cultural property, its capacity to yield scientific data, and its ability to convey its historical significance. Integrity may reflect the authenticity of a property's historic identity, evidenced by the survival or physical characteristics that existed during its historic or prehistoric period, or its expression of the aesthetic or historic sense of a particular period of time.

Cultural Resource Survey: A descriptive listing and documentation, including photographs and maps of cultural resources. Included in an inventory are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and on-the-ground surveys of varying intensity.

Class I: A professionally prepared study that compiles, analyzes, and synthesizes all available data on an area's cultural resources. Information sources for this study include published and unpublished documents, BLM inventory records, institutional site files, and state and National Register files. Class I inventories may have prehistoric, historic, and ethnological and sociological elements. These inventories are periodically updated to include new data from other studies and Class II and III inventories.

Class II: A professionally conducted, statistically based sample survey designed to describe the probable density, diversity, and distribution of cultural properties in a large area. This survey is achieved by projecting the results of an intensive survey carried out over limited parts of the target area. Within individual sample units, survey aims, methods, and intensities are the same as those applied in Class III inventories. To improve statistical reliability, Class II inventories may be conducted in several phases with different sample designs.

Class III: A professionally conducted intensive survey of an entire target area aimed at locating and recording all visible cultural properties. In a Class III survey, trained observers commonly conduct systematic inspections by walking a series of close interval parallel transects until they have thoroughly examined an area.

D

Day/Night Average Sound Level (Ldn): A 24-hour average noise level rating with a 10 dB penalty factor applied to nighttime noise levels. The Ldn value is very similar to the CNEL value, but the CNEL value does not include any weighting factor for noise during evening hours.

Decibel (dB): A generic term for measurement units based on the logarithm of the ratio between a measured value and a reference value. Decibel scales are most commonly associated with acoustics (using air pressure fluctuation data); but decibel scales sometimes are used for ground-borne vibrations or various electronic signal measurements.

Desert Pavement: A surface covering of closely packed rock fragments of pebble or cobble size found on desert soils.

Distance Zones: A subdivision of the landscape as viewed from an observer position. The subdivision (zones) includes foreground-middle ground, background, and seldom seen.

E

Enhancement: A management action designed to improve visual quality.

Equivalent Average Sound Pressure Level (Leq): The decibel level of a constant noise source that would have the same total acoustical energy over the same time interval as the actual time-varying noise condition being measured or estimated. Leq values must be associated with an explicit or implicit averaging time in order to have practical meaning.

Erosion: A natural process whereby soil and highly weathered rock materials are worn away and transported to another area, most commonly by wind or water.

Ethnographic Resources: Resources representing the heritage of a particular ethnic or cultural group, such as Native Americans or African, European, Latino, or Asian immigrants. They may include traditional resource-collecting areas, ceremonial sites, value-imbued landscape features, cemeteries, shrines, or ethnic neighborhoods and structures.

Excavation: The scientific examination of an archaeological site through layer-by-layer removal and study of the contents within prescribed surface units, e.g. square meters.

Expansive Soils: A soil which significantly changes its volume in horizontal and vertical planes with changes in moisture content.

F

Fault (active): A fault that has had surface displacement during Holocene time (last 11,000 years).

Fault (potentially active): A Quaternary-age (last 1.8 million years) fault that lacks evidence of Holocene-age displacement.

Fluvial: Of, relating to, or occurring in a river.

Form: The mass or shape of an object or objects which appear unified, such as a vegetative opening in a forest, a cliff formation, or a water tank.

G

Geomorphic Province: Naturally defined geologic regions that display a distinct landscape or landform.

Glare: The sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility. See Glint.

Glint: A momentary flash of light resulting from a spatially localized reflection of sunlight.

Greenhouse Gas (GHG): A gaseous compound that absorbs infrared radiation and re-radiates a portion of that back toward the earth's surface, thus trapping heat and warming the earth's atmosphere.

H

Habitat: A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

Hazardous Air Pollutant (HAP): Air pollutants which have been specifically designated by relevant federal or state authorities as being hazardous to human health. Most HAP compounds are designated due to concerns related to: carcinogenic, mutagenic, or teratogenic properties; severe acute toxic effects; or ionizing radiation released during radioactive decay processes.

Hertz (Hz): A standard unit for describing acoustical frequencies measured as the number of air pressure fluctuation cycles per second. For most people, the audible range of acoustical frequencies is from 20 Hz to 20,000 Hz.

Historical Site: A location that was used or occupied after the arrival of Europeans in North America (ca. A.D. 1492). Such sites may consist of physical remains at archaeological sites or areas where significant human events occurred, even though evidence of the events no longer remains. They may have been used by people of either European or Native American descent.

Holocene: Of, denoting, or formed in the second and most recent epoch of the Quaternary period, which began 10,000 years ago at the end of the Pleistocene.

Hydrocarbons: Any organic compound containing only carbon and hydrogen, such as the alkanes, alkenes, alkynes, terpenes, and arenes.

Hydrocompaction: Generally is limited to young soils that were deposited rapidly in a saturated state, most commonly by a flash flood. The soils dry quickly, leaving an unconsolidated, low density deposit with a high percentage of voids.

I

Indian Tribe: Any American Indian group in the United States that the Secretary of the Interior recognizes as possessing tribal status (listed periodically in the Federal Register).

Invasive Species: An exotic species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13122, 2/3/99).

Isolate: Non-linear, isolated archaeological features without associated artifacts.

K

Key Observation Point (KOP): One or a series of points on a travel route or at a use area or a potential use area, where the view of a management activity would be most revealing.

L

Landscape Character: The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, color, and texture. These factors give the area a distinctive quality which distinguishes it from its immediate surroundings.

Landscape Features: The land and water form, vegetation, and structures which compose the characteristic landscape.

Landslide: A slope failure that involves downslope displacement and movement of material either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces.

Leasable Minerals: Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

Line: The path, real or imagined, that the eye follows when perceiving abrupt differences in form, color, or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types, or individual trees and branches.

Liquefaction: A condition in which a saturated cohesionless soil may lose shear strength because of a sudden increase in pore water pressure caused by an earthquake.

Locatable Minerals: Minerals subject to exploration, development, and disposal by staking mining claims as authorized by the Mining Law of 1872, as amended. This includes deposits of gold, silver, and other uncommon minerals not subject to lease or sale.

M

Maintenance Area: An area that currently meets federal ambient air quality standards but which was previously designated as a nonattainment area. Federal agency actions occurring in a maintenance area are still subject to Clean Air Act conformity review requirements.

Memorandum of Understanding (MOU): A written but noncontractual agreement between two or more agencies or other parties to take a certain course of action.

Metropolitan Statistical Areas (MSAs): A geographical region with a relatively high population density at its core and close economic ties throughout the area, delineated for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics.

Mineral Material Disposal: The sale of sand, gravel, decorative rock, or other materials defined in 43 CFR 3600.

Mining Claim: A mining claim is a selected parcel of Federal Land, valuable for a specific mineral deposit or deposits, for which a right of possession has been asserted under the General Mining Law. This right is restricted to the development and extraction of a mineral deposit. The rights granted by a mining claim protect against a challenge by the United States and other claimants only after the discovery of a valuable mineral deposit. The two types of mining claims are lode and placer. In addition, mill sites and tunnel sites may be located to provide support facilities for lode and placer mining.

Mitigation: Mitigation includes: (a) Avoiding the impacts altogether by not taking an action or parts of an action, (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, (e) Compensating for the impact by replacing or providing substitute resources or environments (40 CFR §1508.20).

N

National Pollutant Discharge Elimination System (NPDES): The NPDES permit program has been delegated in California to the State Water Resources Control Board. These sections of the CWA require that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the United States must obtain a state certification that the discharge complies with other provisions of the Clean Water Act.

National Register of Historic Places: The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e. districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register.

Native American: Indigenous peoples of the western hemisphere.

Nitric Oxide (NO): A colorless toxic gas formed primarily by combustion processes that oxidize atmospheric nitrogen gas or nitrogen compounds found in the fuel. Nitric oxide is a precursor of ozone, nitrogen dioxide, numerous types of photochemically generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere over a period that may range from several hours to a few days.

Nitrogen Dioxide (NO₂): A toxic reddish gas formed by oxidation of nitric oxide. Nitrogen dioxide is a strong respiratory and eye irritant. Most nitric oxide formed by combustion processes is converted into nitrogen dioxide by subsequent oxidation in the atmosphere. Nitrogen dioxide is a criteria pollutant in its own right, and is a precursor of ozone, numerous types of photochemically generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids.

Nitrogen Oxides (NO_x): A group term meaning the combination of nitric oxide and nitrogen dioxide; other trace oxides of nitrogen may also be included in instrument-based NO_x measurements. Nitrogen oxides are a precursor of ozone, photochemically generated nitrate particles (including PAN), and atmospheric nitrous and nitric acids.

Non-native Species: A plant species that has been introduced, either intentionally or not, to a new geographical area. Non-native species can be, but are not necessarily invasive. See also Invasive Species.

Noxious Weed: According to the Federal Noxious Weed Act (PL 93-629), a weed that causes disease or has other adverse effects on man or his environment and therefore is detrimental to the agricultural and commerce of the United States and to the public health.

Nonattainment Area: An area that does not meet a federal or state ambient air quality standard. Federal agency actions occurring in a federal nonattainment area are subject to Clean Air Act conformity review requirements.

O

Off-Highway Vehicle (OHV): A vehicle operated exclusively off public roads and highways on lands that are open and accessible to the public, and includes racing motorcycles, trail bikes, mini bikes, dune buggies, all-terrain vehicles, jeeps, and snowmobiles.

Organic Compounds: Compounds of carbon containing hydrogen and possibly other elements (such as oxygen, sulfur, or nitrogen). Major subgroups of organic compounds include hydrocarbons, alcohols, aldehydes, carboxylic acids, esters, ethers, and ketones. Organic compounds do not include crystalline or amorphous forms of elemental carbon (graphite, diamond, carbon black, etc.), the simple oxides of carbon (carbon monoxide and carbon dioxide), metallic carbides, or metallic carbonates.

Overdraft condition: A condition in which the total volume of water being extracted from the groundwater basin would be greater than the total recharge provided to the basin.

Ozone (O₃): A compound consisting of three oxygen atoms. Ozone is a major constituent of photochemical smog that is formed primarily through chemical reactions in the atmosphere involving reactive organic compounds, nitrogen oxides, and ultraviolet light. Ozone is a toxic chemical that damages various types of plant and animal tissues and which causes chemical oxidation damage to various materials. Ozone is a respiratory irritant, and appears to increase susceptibility to respiratory infections. A natural layer of ozone in the upper atmosphere absorbs high energy ultraviolet radiation, reducing the intensity and spectrum of ultraviolet light that reaches the earth's surface.

P

Paleontological Resources (Fossils): The physical remains of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are for understanding past environments, environmental change, and the evolution of life.

Paleontology: A science dealing with the life forms of past geological periods as known from fossil remains.

Paleozoic Era: An era of geologic time (600 million to 280 million years ago) between the Late Precambrian and the Mesozoic eras and comprising the Cambrian, Ordovician, Silurian, Devonian, Mississippian, Pennsylvanian, and Permian periods.

Particulate Matter: Solid or liquid material having size, shape, and density characteristics that allow the material to remain suspended in the atmosphere for more than a few minutes. Particulate matter can be characterized by chemical characteristics, physical form, or aerodynamic properties. Categories based on aerodynamic properties are commonly described as being size categories, although physical size is not used to define the categories. Many components of suspended particulate matter are respiratory irritants. Some components (such as crystalline or fibrous minerals) are primarily physical irritants. Other components are chemical irritants (such as sulfates, nitrates, and various organic chemicals). Suspended particulate matter also can contain compounds (such as heavy metals and various organic compounds) that are systemic toxins or necrotic agents. Suspended particulate matter or compounds adsorbed on the surface of particles can also be carcinogenic or mutagenic chemicals. See PM₁₀ and PM_{2.5}.

Peak Ground Acceleration (PGA): A common measure of ground motion during an earthquake. The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. Unlike measures of magnitude, which provide a single measure of earthquake energy, PGA varies from place to place, and is dependent on the distance from the epicenter and the character of the underlying geology (e.g. hard bedrock, soft sediments, or artificial fills).

pH (parts hydrogen): a measure of the acidity or basicity of a water-based solution. Pure water is considered neutral with a pH of 7, while solutions with a pH less than 7 are said to be acidic and solutions with a pH greater than 7 are basic or alkaline.

Physiographic Province: An extensive portion of the landscape normally encompassing many hundreds of square miles, which portrays similar qualities of soil, rock, slope, and vegetation of the same geomorphic origin (Fenneman 1946; Sahrhaftig 1975).

Pleistocene (Ice Age): An epoch in the Quarternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

Pliocene: The Pliocene Epoch is the period in the geologic timescale that extends from 5.332 million to 2.588 million years before present.

PM2.5 (fine particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 6 microns penetrate into the alveoli in the lungs. In a regulatory context, PM2.5 is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 2.0 to 2.5 microns and an maximum aerodynamic diameter collection limit less than 6 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 2.5 microns and less than 50 percent for particles with aerodynamic diameters larger than 2.5 microns.

PM10 (inhalable particulate matter): A fractional sampling of suspended particulate matter that approximates the extent to which suspended particles with aerodynamic equivalent diameters smaller than 50 microns penetrate to the lower respiratory tract (tracheo-bronchial airways and alveoli in the lungs). In a regulatory context, PM10 is any suspended particulate matter collected by a certified sampling device having a 50 percent collection efficiency for particles with aerodynamic equivalent diameters of 9.5 to 10.5 microns and an maximum aerodynamic diameter collection limit less than 50 microns. Collection efficiencies are greater than 50 percent for particles with aerodynamic diameters smaller than 10 microns and less than 50 percent for particles with aerodynamic diameters larger than 10 microns.

Potential Fossil Yield Classification (PFYC) system: A system in which geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level.

Power Purchase Agreement (PPA): A contract between two parties, one who generates and intends to sell electricity, and one who is looking to purchase electricity, defining the commercial terms for the sale of electricity between the two parties.

Precursor: A compound or category of pollutant that undergoes chemical reactions in the atmosphere to produce or catalyze the production of another type of air pollutant.

Prehistoric: Refers to the period wherein American Indian cultural activities took place before written records and not yet influenced by contact with nonnative culture(s).

Q

Quaternary Age: The most recent of the three periods of the Cenozoic Era. In the geologic time scale of the International Commission on Stratigraphy, it follows the Tertiary Period, spanning time from approximately 2.6 ± 0.005 million years ago to the present. The Quaternary includes two geologic epochs: the Pleistocene and the Holocene.

R

Record of Decision: A formal decision document issued by a federal agency to document a decision made following the release of a Final Environmental Impact Statement.

Rehabilitation: A management alternative and/or practice which restores landscapes to a desired scenic quality.

Reverse Osmosis (RO) System: A water purification technology that uses a semipermeable membrane to remove many types of molecules and ions from solutions (e.g., to remove dissolved solids from groundwater).

Riparian: Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or sub-irrigation zone of streams, ponds, and springs.

Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

Route: “Routes” represents a group or set of roads, trails, and primitive roads that represents less than 100 percent of the BLM transportation system. Generically, components of the transportation system are described as routes.

S

Saleable Minerals: Common variety minerals on the public lands, such as sand and gravel, which are used mainly for construction. See also Mineral Material Disposal.

Scale: The proportionate size relationship between an object and the surroundings in which the object is placed.

Scenery: The aggregate of features that give character to a landscape.

Scenic Area: An area whose landscape character exhibits a high degree of variety and harmony among the basic elements which results in a pleasant landscape to view.

Scenic Quality: The relative worth of a landscape from a visual perception point of view.

Scenic Quality Ratings: The relative scenic quality (A, B, or C) assigned a landscape by applying the scenic quality evaluation key factors; scenic quality A being the highest rating, B a moderate rating, and C the lowest rating.

Scenic Values: See Scenic Quality and Scenic Quality Ratings.

Secretary of the Interior: The U.S. Department of the Interior is in charge of the nation’s internal affairs. The Secretary position is the head of this agency and serves on the President’s cabinet.

Sedimentary Rocks: Rocks, such as sandstone, limestone, and shale, that are formed from sediments or transported fragments deposited in water.

Sensitivity Levels: Measures (e.g., high, medium, and low) of public concern for scenic quality.

Settlement: A process by which soils decrease in volume. Earthquake induced settlement results when relatively unconsolidated granular materials experience vibration associated with seismic events. Local settlement can occur when areas containing compressible soils are subject to foundation or fill loads.

Special-Status Species: Federal- or state-listed species, candidate or proposed species for listing, or species otherwise considered sensitive or threatened by state and federal agencies.

State Historic Preservation Office (SHPO): The official within and authorized by each state at the request of the Secretary of the Interior to act as liaison for the National Historic Preservation Act.

State Implementation Plan (SIP): Legally enforceable plans adopted by states and their subdivisions and submitted to EPA for approval, which identify the actions and programs to be undertaken by the State and its subdivisions to achieve and maintain national ambient air quality standards in a time frame mandated by the Clean Air Act.

State Water Resources Control Board (SWRCB): Created in 1967, joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters. The mission of the nine Regional Water Quality Control Boards is to develop and enforce water quality objectives and implementation plans that will best protect the State's waters, recognizing local differences in climate, topography, geology, and hydrology.

Stratigraphy: The order and relative position of strata (a layer of rock in the ground) and their relationship to the geological time scale.

Subsurface: Of or pertaining to rock or mineral deposits which generally are found below the ground surface.

Sulfur Dioxide (SO₂): A pungent, colorless, and toxic oxide of sulfur formed primarily by the combustion of fossil fuels. It is a respiratory irritant, especially for asthmatics. It is a criteria pollutant in its own right, and a precursor of sulfate particles and atmospheric sulfuric acid.

T

Tertiary: The Tertiary Period marks the beginning of the Cenozoic Era. It began 65 million years ago and lasted more than 63 million years, until 1.8 million years ago. The Tertiary is made up of 5 epochs: the Paleocene Epoch, the Eocene Epoch, the Oligocene Epoch, the Miocene Epoch, and the Pliocene Epoch.

Texture: The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.

Total Dissolved Solids: A measure of the combined content of all inorganic and organic substances contained in a liquid that are smaller than two micrometers in diameter (e.g., sodium).

Toxic: Poisonous; exerting an adverse physiological effect on the normal functioning of an organism's tissues or organs through chemical or biochemical mechanisms following physical contact or absorption.

Traditional Cultural Properties: Areas associated with the cultural practices or beliefs of a living community. These sites are rooted in the community's history and are important in maintaining cultural identity.

Trail: A linear route managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

U

Unique Archaeological Resource: This term is used for the purposes of CEQA and is defined in CEQA Guidelines Section 15064.5 as an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it either contains information needed to answer important scientific research questions; has a special and particular quality such as being the oldest of its type or the best available example of its type; or, is directly associated with a scientifically recognized important prehistoric or historic event or person.

V

Vandalism (Cultural Resource): Malicious damage or the unauthorized collecting, excavating, or defacing of cultural resources. §6 of the Archaeological Resources Protection Act states that "no person may excavate,

remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands...unless such activity is pursuant to a permit issued under section 4 of this Act.”

Variables: Factors influencing visual perception including distance, angle of observation, time, size or scale, season of the year, light, and atmospheric conditions.

Variety: The state or quality of being varied and having the absence of monotony or sameness.

Viewshed: The landscape that can be directly seen under favorable atmospheric conditions, from a viewpoint or along a transportation corridor. Protection, rehabilitation, or enhancement is desirable and possible.

Visual Contrast: See Contrast.

Visual Quality: See Scenic Quality.

Visual Resources: The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures, and other features).

Visual Resource Management Classes: Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape.

Visual Resource Management (VRM): The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

Visual Values: See Scenic Quality.

W

Wetlands: Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

Wilderness Area: An area formally designated by Congress as part of the National Wilderness Preservation System as defined in the Wilderness Act of 1964 (78 Stat. 891), Section 2(c).

Wilderness Study Area: A roadless area or island that has been inventoried and found to have wilderness characteristics as described in Section 603 of FLPMA and Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

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