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Draft Mojave Desert Tortoise (*Gopherus agassizii*) and Western Burrowing Owl (*Athene cunicularia hypugaea*) Section 2081 Incidental Take Permit Application for the Soda Mountain Solar Project, San Bernardino County, California

FEBRUARY 2025

PREPARED FOR

Soda Mountain Solar, LLC

PREPARED BY

SWCA Environmental Consultants

DRAFT MOJAVE DESERT TORTOISE (*GOPHERUS AGASSIZII*) AND WESTERN BURROWING OWL (*ATHENE CUNICULARIA HYPUGAEA*) SECTION 2081 INCIDENTAL TAKE PERMIT APPLICATION FOR THE SODA MOUNTAIN SOLAR PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA

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SWCA Project No. 068347

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INTRODUCTION

Soda Mountain Solar Project, LLC (Applicant) is seeing an Incidental Take Permit (ITP) pursuant to California Fish and Game Code (FGC) Section 2081(b) for the Soda Mountain Solar Project (Project). Section 2081(b) allows for the California Department of Fish and Wildlife (CDFW) to authorize incidental take of a species listed as threatened, endangered, or candidate pursuant to the California Endangered Species Act (CESA). This permit application describes the proposed Project, species for which take is requested, impact and jeopardy analysis, and the management actions that will be implemented to minimize and fully mitigate the impacts to state-listed species that would occur with implementation of the Project. Applications for a 2081(b) ITP submitted to the CEC require the following items listed in the California Code of Regulations (CCR) Section 783.2:

1. Appropriate application fee.
2. Applicant's name and contact information
3. The species to be covered by the ITP
4. A complete description of the project or activity for which the permit is sought.
5. The location where the project or activity is to occur or to be conducted.
6. An analysis of whether and to what extent the project or activity for which the permit is sought could result in the taking of species to be covered by the permit.
7. An analysis of the impacts of the proposed taking on the species.
8. An analysis of whether issuance of the incidental take permit would jeopardize the continued existence of a species.
9. Proposed measures to minimize and fully mitigate the impacts of the proposed taking.
10. A proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures.
11. A description of the funding source and the level of funding available for implementation of the minimization and mitigation measures.
12. Certification.
13. Documentation of California Environmental Quality Act (CEQA) compliance.

1 APPLICANT INFORMATION – CCR § 783.2(A)(1)

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2 SPECIES FOR WHICH TAKE COVERAGE IS REQUESTED – CCR § 783.2(A)(2)

The Applicant seeks an ITP for the incidental take of Mojave desert tortoise (also known as Agassiz's desert tortoise) (*Gopherus agassizii*) and western burrowing owl (*Athene cuniculeria hypugaea*). For purposes of this report, Mojave desert tortoise is also referred to as simply *desert tortoise* and western burrowing owl may be referred to as simply *burrowing owl*.

Desert tortoise is listed as a threatened species under the federal Endangered Species Act (ESA) and previously listed as threatened under CESA. A petition to change the status of desert tortoise from threatened to endangered under CESA was received by the California Fish and Game Commission (CFGC) on March 23, 2020. The CFGC completed the candidacy evaluation of the species and accepted the petition for consideration on October 14, 2020. In April 2024, the CFCG determined that listing the Mojave desert tortoise as endangered under CESA was warranted following a formal status review for the species.

A petition to list western burrowing owl as endangered or threatened under CESA was received by the CFGC on March 5, 2024. On October 14, 2024, the California Fish and Game Commission unanimously approved western burrowing owl as a candidate for potential listing under CESA. As a candidate species, burrowing owl is afforded the same protections as a listed species under CESA. The CDFW status review of the species is expected to be completed in October 2025.

3 COMPLETE DESCRIPTION OF THE PROJECT – CCR § 783.2(A)(3)

3.1 Background

The original applicant—ZGlobal, Inc. (ZGlobal)—filed a right-of-way (ROW) grant application with the Bureau of Land Management (BLM) to construct, operate, maintain, and decommission the Project (Case File Number CACA-049584) on December 14, 2007. The BLM considered the effects of granting the ROW as required by the National Environmental Policy Act (NEPA). The ROW grant triggered the need for a land use plan amendment to identify the site in the California Desert Conservation Area Plan of 1980 (CDCA Plan) as a suitable site for the Project. The CDCA Plan amendment also required analysis of potential impacts under NEPA.

Soda Mountain Solar, LLC, applied for environmental review with the County of San Bernardino (County) on August 2, 2012. The application for environmental review was accompanied by the groundwater well permit applications. The Project was analyzed in a Proposed Plan Amendment (PA) and Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) (BLM 2016). The document was prepared jointly by the BLM and the County pursuant to the applicable requirements under NEPA and the CEQA, respectively.

During the preparation of the EIS/EIR, an aquatic resources delineation was prepared and submitted for jurisdictional determination to the U.S. Army Corps of Engineers (USACE). On August 21, 2013, the USACE issued a determination that there are no waters of the U.S. on the Project site. The jurisdictional determination was valid for a period of 5 years.

The BLM also submitted a biological assessment to the USFWS. The USFWS provided the BLM with a draft biological opinion (BO) on October 23, 2015, and issued a final BO on January 13, 2016 (Appendix A). The USFWS concurred with the BLM's determination that the Project may affect, but is not likely to adversely affect, the Mojave tui chub (*Siphateles bicolor mohavensis*). The BO also indicated that the Project would not jeopardize the continued existence of the desert tortoise. The BO estimated that a maximum of 10 adult or subadult (>180 mm) and 68 juvenile or hatchling (<180 mm) desert tortoises could occur in the area, which fell in the upper bounds of incidental take authorized in the BO.

The BLM and the County published the final PA and EIS/EIR document on June 12, 2015. The BLM issued a record of decision (ROD) to approve a revised configuration of the Applicant's application and associated amendment to the CDCA Plan in March 2016 (BLM 2016). Compared to the original Project analyzed in the EIS/EIR, the revised Project in the ROD removed the North Solar Array, reduced ground disturbance by approximately 500 acres, reduced impacts to visual resources, and included future efforts to restore bighorn sheep (*Ovis canadensis*) connectivity.

ZGlobal also filed revised groundwater well permit applications with the County on May 12, 2016. The County held a hearing on adoption of the EIR and approval of the groundwater permits on August 23, 2016. Despite the Project receiving a ROD from the BLM and recommendation from the County Planning Staff to approve the Project, the County Board of Supervisors declined to certify the EIR. As the County did not certify the EIR, no decision was made regarding the groundwater permits.

The current Project described below is similar to the revised Project in the BLM's ROD; however, groundwater wells would no longer be required for water supply. Therefore, a groundwater permit from the County is no longer necessary. In addition, the County will no longer act as the CEQA lead agency as they do not have discretionary responsibility for the Project. The Project is currently seeking an ITP and Streambed Alteration Agreement from the CEC, along with a Title 27 Discharge Permit and Clean Water Act Section 401 Permit from the Lahontan Regional Water Quality Control Board (RWQCB). The California Energy Commission (CEC) will serve as CEQA lead agency and have principal responsibility for approving the Project.

3.2 Project Objectives

CEQA Guidelines Section 15124(b) requires the Project description to contain a statement of objectives that includes the underlying purpose of the proposed Project. The Project objectives are identified as follows:

- Assist the State of California in achieving or exceeding its Renewables Portfolio Standard and greenhouse gas emissions reduction objectives by developing and constructing new California Renewables Portfolio Standard–qualified solar power generation facilities producing approximately 300 MW.
- Produce and transmit electricity at a competitive cost.
- Provide a new source of energy storage that assists the state in achieving its energy storage mandates.
- Use the existing transmission unused capacity that provides approximately 300 MW of capacity.
- Utilize existing energy infrastructure to the extent possible by locating solar power generation facilities near existing infrastructure, such as electrical transmission facilities.
- Site solar power generation facilities in areas of San Bernardino County that have the best solar resource to maximize energy production and the efficient use of land.

- Develop a solar power generation facility in San Bernardino County, which would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

3.3 Summary of Project Components

The Applicant proposes to construct, operate, maintain, and decommission a proposed 300-megawatt (MW) photovoltaic (PV) solar facility located on approximately 2,670.4 acres administered by the BLM in unincorporated San Bernardino County, approximately 6 miles southwest of the town of Baker, California, along Interstate 15 (I-15) (Figures 1-3). The project components are as follows:

14. The solar plant site (i.e., all facilities that create a footprint in and around the field of solar panels, including the solar field consisting of solar power arrays identified as the East Array and South Arrays 1, 2, and 3), operation and maintenance buildings and structures, stormwater infrastructure, and related infrastructure and improvements.
15. A substation and switchyard for interconnection to the existing transmission system.
16. Approximately 300 MW of battery energy storage systems across 16 acres.
17. The Project would operate year-round and would generate electricity during daylight hours when the sun is shining. The Project would generate and deliver solar-generated power to the regional electrical grid through an interconnection with the existing Marketplace-Adelanto 500-kilovolt (kV) transmission line operated by the Los Angeles Department of Water and Power (LADWP).

The complete project description and preliminary site plan for the Proposed Project are included in Appendix B and C respectively.

4 PROJECT LOCATION – CCR § 783.2(A)(4)

4.1 Geographic Area

The Project site is located entirely on BLM-administered land in a rural area of the Mojave Desert, approximately 6 miles southwest of the town of Baker, approximately 50 miles northeast of the city of Barstow, and on the east side of I-15. It is approximately 0.5 mile from the western boundary of the Mojave National Preserve. The Project site is located in the Mojave Desert Air Basin and within a sub-basin of the Soda Lake Valley Groundwater Basin. The lands in the vicinity of the site contain a number of existing infrastructure developments that include the I-15 highway, two transmission lines, a distribution line, wireless cellular communication towers, a fiber optics line, a fuel pipeline, and a telephone line. The former Arrowhead Trail Highway that was replaced by I-15 traverses the eastern side of the Project site. A gas station is located approximately 0.6 mile from the southwest corner of the Project site.

Primary access to the Project area during construction and operation would be via a gated entrance from Rasor Road. Additionally, a California Department of Transportation (Caltrans) access road to the Opah Ditch pit mine would be used for construction of the collection line to the substation or for Project site access. An existing Southern California Edison (SCE)-owned 115-kV sub-transmission line and an LADWP-operated 500-kV transmission line run along the west side of I-15. The Rasor Off-Highway Vehicle (OHV) Recreation Area, to the southeast of the Project area, is currently accessed via Rasor Road, and access to the OHV area would continue following the proposed relocation of this road.

Figure 1. Project vicinity map.

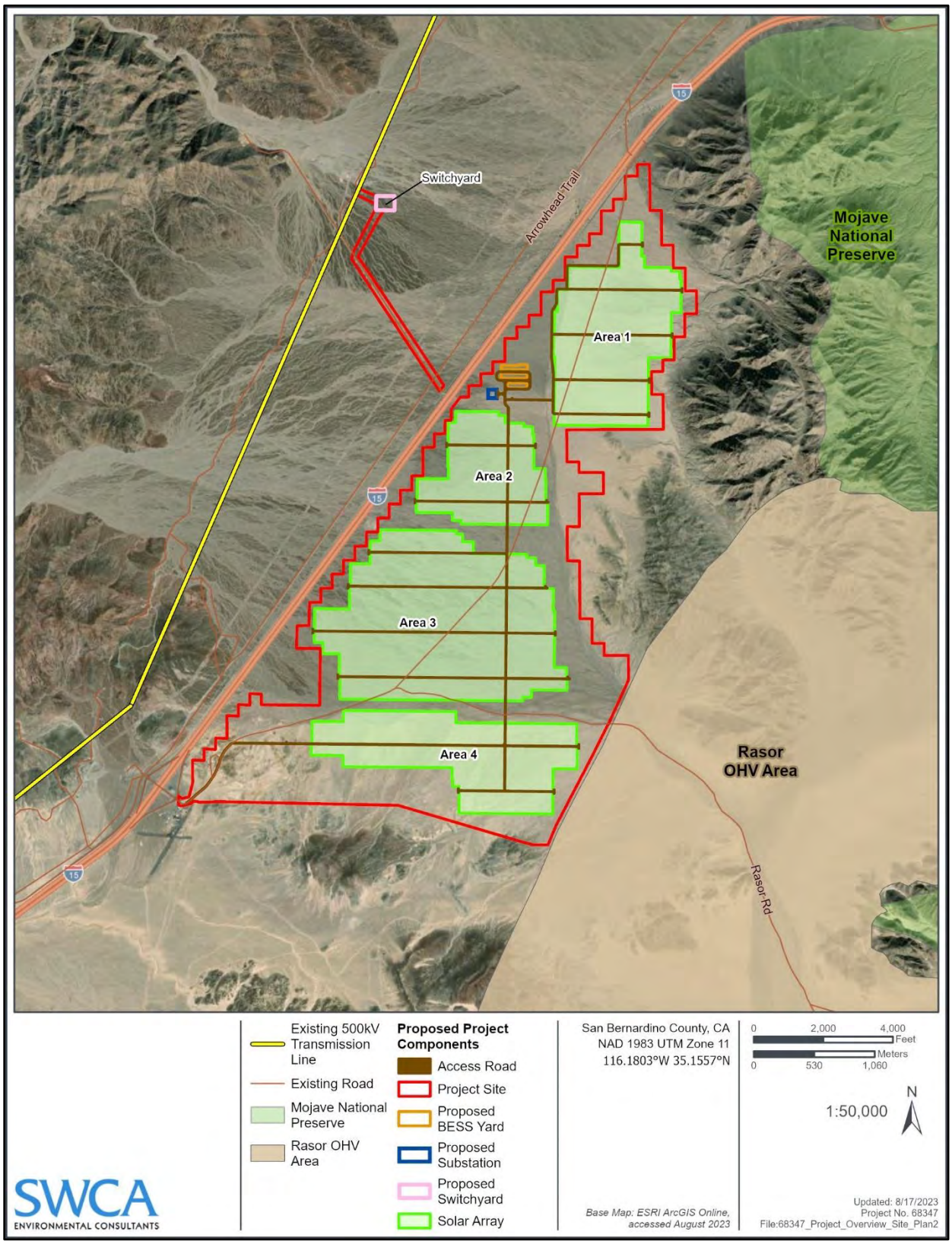

Figure 2. Project overview site plan.

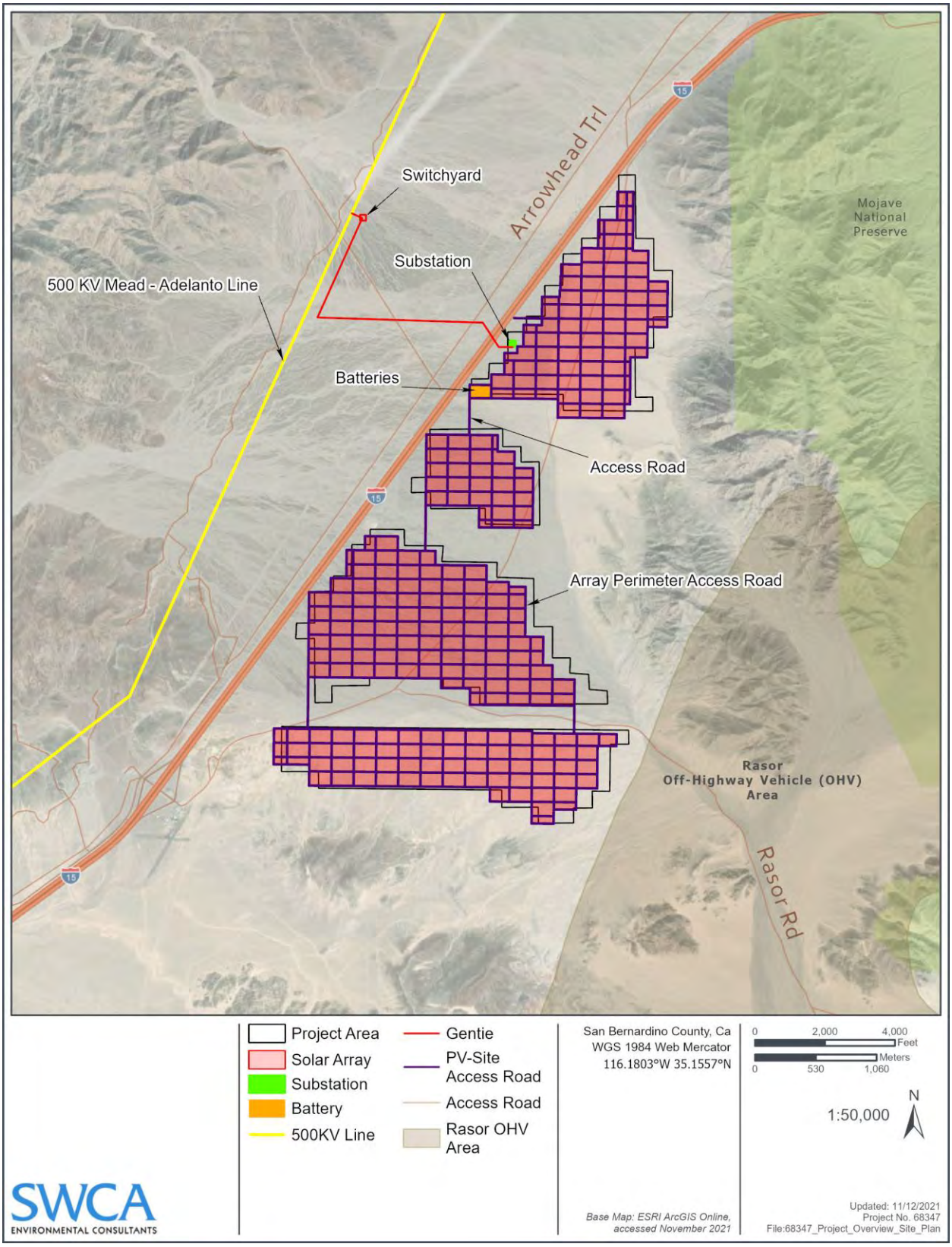

Figure 3. Project overview site plan.

4.2 Physical Environment

The habitat types within the Project area are best described as Mojavean desert scrub and desert wash scrub. Soils were mostly composed of sand interspersed with gravel and cobble. One major unpaved road, Rasor Road, bisects the study area. Although the project area is not within an OHV area, vehicle tracks and disturbance were observed in many parts of the Project area during the field studies. Other signs of disturbance include trash dumps, mostly along the road edges and near I-15. In addition, non-native and invasive plant species were prevalent throughout the Project area. Non-native and invasive species observed included Mediterranean grass (*Schismus arabicus*), foxtail barley (*Hordeum murinum*), and red brome (*Bromus madritensis* ssp. *rubens*). Non-native and invasive plant species often outcompete native plants and can increase fire risk in the desert.

Vegetation in the Project area and along the gen-tie options consists of intermittent native shrubs. Five vegetation communities were identified on-site as defined in *A Manual of California Vegetation Online* (CNPS 2024): Rigid Spineflower – Hairy Desert Sunflower (*Chorizanthe rigida – Geraea canescens* Desert Pavement Sparsely Vegetated Alliance), California Joint Fir – Longleaf Joint-fir Scrub (*Ephedra californica – Ephedra trifurca* Shrubland Alliance), Cheesebush – Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea* Shrubland Alliance), Creosote Bush Scrub (*Larrea tridentata* Shrubland Alliance), and Creosote Bush – White Bursage Scrub (*Larrea tridentata – Ambrosia salsola* Shrubland Alliance). Additionally, maintained dirt roads and other disturbed sites were identified as Developed/Disturbed landcover type.

5 PROJECT SPECIES TAKE– 14 CCR 783.2(A)(5)

5.1 Mojave Desert Tortoise

5.1.1 *Species Description*

The desert tortoise is a large, slow-moving, terrestrial turtle inhabiting desert environments. It features a high, domed carapace made up of sizable scutes, each marked with numerous growth lines. Carapace length ranges between 8 – 15 inches (20.3 – 38.1 cm) in length. Tortoise coloration varies from tan, brown, and grayish-brown to blackish, typically lacking any prominent patterns. The skin on the head and limbs is generally brownish, with yellowish hues around the neck and limbs. Hatchling and juvenile tortoises have a more flexible carapace, and a lighter-colored scutes compared to adults.

The species is sexually dimorphic and distinguishable as adults. Males are larger than females and possess a concave plastron, a thicker and longer tail, and robust claws. In addition, chin glands, located on each side of the lower jaw, are more prominent in males. Males also exhibit longer gular horns, which are positioned at the front of the shell below the head.

5.1.2 *Habitat and Natural History*

Desert tortoises are typically found below 5,000 feet in elevation. This species occurs in almost every desert habitat in Southern California but is most common in desert scrub, desert wash, and Joshua tree woodland habitats. These habitats are typically dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Other plant species associated with these desert scrub communities include cacti (*Opuntia* spp.) and saltbush (*Atriplex* sp.). Desert tortoise requires friable soil for burrowing and nest construction and typically prefers Creosote Bush Scrub (*Larrea tridentata* Shrubland Alliance) with large

annual wildflower blooms. They are most active during spring and early summer and then again during fall. During the hot summer months, they are usually found within burrows or other shelter sites but may emerge after a rain event. Desert tortoises enter a state of torpor and typically remain in their burrows during the coldest winter months. In addition to burrows within soil, tortoises may also shelter in other structures, including caliche caves, lava tubes, rock caves, rodent or other mammal burrows, shrubs, and human made structures (U.S. Fish and Wildlife Service [USFWS] 2009a). Desert tortoises are long-lived and site-faithful, with lifespans of up to 80 years.

5.1.2.1 REPRODUCTION

Courtship and breeding take place shortly after emergence from hibernation in March and April. During this period, males engage in combat for access to females. Females typically lay a clutch of 1 to 12 eggs between May and July, usually at the entrance or just inside of a burrow. In years where weather conditions are favorable and food is abundant, tortoises may lay 1 to 3 clutches. The eggs then hatch from mid-August to October.

5.1.2.2 DIET AND FORAGING BEHAVIOR

Desert tortoises are herbaceous and feed on a variety of vegetation including cacti, herbs, grasses, and flowers. They typically prefer cactus pads, especially prickly pear (*Opuntia* spp.) and annual flowers and vegetation from plants such as desert globemallow (*Sphaeralcea ambigua*), desert dandelion (*Malacothrix glabrata*), and desert marigold (*Baileya* sp.). Plants provide a crucial source of moisture in the arid environment. Tortoises are often at risk of dehydration through water loss from evaporation and urination, especially during the summer. Tortoises drink when water is available from seasonal rainfall, and store water in the bladder during the dry season.

5.1.3 *Results of Field Surveys*

Five protocol-level surveys for desert tortoise were performed in the proposed project area between 2009 and 2023. All protocol-level surveys were conducted using the USFWS protocol for desert tortoises in the *Field Survey Protocol for Any Federal Action that May Occur within the Range of the Desert Tortoise* (USFWS 1992, 2019) and the survey protocol identified within *Preparing for Any Action that May Occur within the Range of the Mojave Desert Tortoise (*Gopherus agassizii*)* (USFWS 2009a). Each survey included documentation of desert tortoise sign (burrows, scat, tracks, pallets, drinking depressions, and carcasses), and live tortoises. Desert tortoise burrows were also assigned a classification based on condition. Burrow classifications are as follows:

- Class 1: currently active, with desert tortoise or recent desert tortoise sign
- Class 2: good condition, definitely desert tortoise; no evidence of recent use
- Class 3: deteriorated condition which includes collapsed burrows; definitely desert tortoise
- Class 4: good condition; possibly desert tortoise
- Class 5: deteriorated condition which includes collapsed burrows; possibly desert tortoise

Overall, the amount of sign and live tortoises found during the surveys indicate the tortoise numbers are low in the project area. The highest concentration of high-quality burrows (Class 2), scat, and carcasses were found in the northern portion of the project, especially in the northeastern area. The burrows throughout the rest of the project area were generally identified as Class 3-5 burrows. The summary of each survey is included in Table 1. Recent survey reports are available in the Biological Resources

Technical Report (SWCA 2025), while survey reports from 2009 through 2013 can be found in the 2016 EIR (BLM 2016).

Table 1. Soda Mountain Solar Project Desert Tortoise Surveys

Year	Date(s)	Entity	Report	Results
2009	May 4–29	URS	2009 Desert Tortoise Survey Report Soda Mountain Solar Project San Bernardino County, California. (URS 2009)	Class 3 scat was documented outside of the project area, north of the gen-tie route (35.18667, -116.19609)
		RMT, Inc.	Final 2009 Desert Tortoise Survey Report. Soda Mountain Solar Project. San Bernardino County, CA. BLM Case Number – CACA 49584 (RMT, Inc 2010)	Reviews nearby tortoise surveys for other projects and summarizes results from the 2009 survey above. Summary shows desert tortoise signs were observed in the vicinity of the project, but not within the project boundaries.
2012	October 11–19	Kiva Biological Consulting	Protocol Desert Tortoise Survey for Soda Mountain Solar Project, Fall 2012 (Kiva Biological Consulting 2012a)	Survey area included 220 acres and road realignment on the eastern edge of the project. Two clusters of desert tortoise sign were found on the eastern portion of the project, and one lone burrow was found at the southern portion of the project. A total of 11 burrows, 2 carcasses, and over 20 scat were found.
2012	October 19; November 10–12	Kiva Biological Consulting	Protocol Desert Tortoise Survey for 17 Geotech Sites and Access Routes for Soda Mountain Solar Project, Fall 2012 (Kiva Biological Consulting 2012b)	Surveys were only conducted at Geotech sites and access routes. No live desert tortoise nor sign were found
2013	April 8–May 11	Kiva Biological Consulting	Protocol Desert Tortoise Survey for Soda Mountain Solar Project, Spring 2013 (Kiva Biological Consulting 2013a)	One live female desert tortoise was located; 23 tortoise burrows (4 with recent tracks), five desert tortoise carcasses and 8 desert tortoise scat were documented
2021	December 30	SWCA	Technical Memorandum - Soda Mountain Solar Project Site Visit / SWCA Project No. 068347 (SWCA 2021)	Four potential desert tortoise burrows were identified; one class 2, one class 3, and two class 5.
2023	April 5 – May 4; May 24–29	SWCA	Technical Memorandum - Desert Tortoise Survey Report for the Soda Mountain Solar Project (SWCA 2024)	182 desert tortoise burrows ranging from Class 2-5 documented. Two scats observed, one <1 day old in the northeast corner of the project, and one < 1 month old in the northwestern project area.

5.1.4 *Potential for Take*

There are two types of take of Mojave desert tortoise that could potentially occur as a result of implementation of the project. One is the removal of habitat, and the other is direct harassment, harm, or mortality during project construction, maintenance, and operational activities, either by construction personnel and/or from the use of equipment. Based on the preliminary project design, the permanent removal of approximately 1,592.5 of habitat suitable for desert tortoise would result from the project. The acreage permanent and temporary impacts to habitat will be further refined upon the finalized project design.

As stated in Section 3.1, the 2016 USFWS BO estimated that a maximum of 10 adult or subadult (>180 mm) and 68 juvenile or hatchling (<180 mm) desert tortoises may occur in the Project area. However, this estimate included proposed solar arrays north of the I-15, which are no longer part of the Project. The current Project area supports a low density of tortoises, primarily concentrated in the northern area of the Project. Desert tortoise abundance may be calculated using the number of live tortoises observed (USFWS 2010). Because only one live tortoise was found during the surveys, abundance calculations are limited. The estimated abundance of tortoises in the project area was two in 2013 (Kiva Biological Consulting 2013a). It is expected that the current estimated abundance is similar to the 2013 estimate. Because the Project includes desert tortoise fencing and construction monitoring measures, take is not anticipated during operations and maintenance.

5.2 Western Burrowing Owl

5.2.1 *Species Description*

Burrowing owl is a small bird of prey known for its distinctive appearance and behavior. It has a round face with prominent with bright yellow eyes. Its body is slender with long legs, and it stands about 9-10 inches tall. The plumage is mottled brown and white, providing camouflage in its natural habitats, which include open grasslands, prairies, and desert regions. Males and females are indistinguishable outside of the nesting season. However, during the nesting season, males become identifiable based on the pale coloration of their feathers due to perching outside of their burrows for extended periods of time.

5.2.2 *Habitat and Natural History*

Burrowing owls are found throughout California and have a range that extends from western North America into South America. Most burrowing owls in southern California are residents, meaning they do not have seasonal migrations outside of California. However, the movement and migration patterns of owls in California are not well understood. Burrowing owls predominantly inhabit open areas with short vegetation and access to low perches, such as fence posts, elevated mounds, or shrubs. They are commonly associated with grasslands, agricultural fields, prairies, scrublands, and desert areas; however, they have also demonstrated adaptability to landscapes modified by human activities. Suitable habitat for the burrowing owl is characterized by the availability of burrows for roosting and nesting, as well as relatively short vegetation with sparse shrubs and taller vegetation. This species often utilizes burrows dug by fossorial mammals as nesting sites including those made by ground squirrels (e.g., *Otospermophilus beecheyi*), American badger, coyote (*Canis latrans*), and desert kit fox (e.g., *Vulpes macrotis arsipus*) (Ronan 2002). Additionally, human-made structures like culverts, concrete rubble piles, and pipes can serve as alternative nest sites. Burrowing owls typically live five to eight years in the wild and have been known to revisit historical nesting sites without necessarily showing fidelity to specific burrows.

5.2.2.1 REPRODUCTION

Burrowing owl breeding season is typically between February 1 and August 31. Nest burrows are typically in an area with a high density of burrows. Pairs tend to be monogamous and often return to the same nest site each year. In general, females lay one clutch of eggs per year, with up to 12 eggs. After hatching, chicks remain within the burrow for approximately 2 weeks before emerging. Young owls typically fledge by 6 weeks, but often remain near nest burrows.

5.2.2.2 DIET AND FORAGING BEHAVIOR

Burrowing owls are opportunistic feeders and typically feed on insects and small rodents, but have been documented feeding on amphibians and small birds. They are generally crepuscular but have been observed foraging throughout the day and night. During the breeding season, males may hunt up to 0.6 miles (1 kilometer) from their nest. Females typically remain near the nest and forage on insects and other arthropods.

5.2.3 *Results of Field Surveys*

Four surveys for burrowing owl were performed in the proposed project area from 2012 to 2023, with two additional biological resource surveys in which owls were observed incidentally (Table 2). Recent survey reports are available in the Biological Resources Technical Report (SWCA 2025), while survey reports from 2009 through 2013 can be found in the 2016 EIR (BLM 2016).

Table 2. Soda Mountain Solar Project Burrowing Owl Surveys

Year	Date(s)	Entity	Report	Results
2012	October 11–19	Kiva Biological Consulting	Protocol Desert Tortoise Survey for Soda Mountain Solar Project, Fall 2012 (Kiva Biological Consulting 2012b)	Four burrowing were observed incidentally during desert tortoise surveys.
2012	October - November	CS Ecology Surveys and Assessments	Focused Fall Special-status Plant Survey, Soda Mountain Solar Project (CSESA 2012)	Nine burrowing owls were observed incidentally during rare plant surveys.
2013	April 18 – May 11	Kiva Biological Consulting	Phase II Burrowing Owl Surveys (Kiva Biological Consulting 2013b)	No live burrowing owls located, 50 burrows with owl sign.
2013	April 28-29, May 21-22, June 12-13, 25-26	Kiva Biological Consulting	Phase III Burrowing Owl Surveys (Kiva Biological Consulting 2013b)	No live burrowing owls located, no new additional burrows located.
2021	December 30	SWCA	Technical Memorandum - Soda Mountain Solar Project Site Visit / SWCA Project No. 068347 (SWCA 2021)	Habitat determined suitable for burrowing owl. No live owls nor sign observed.
2023	March 27 – April 5, May 8-12, 22-26, June 5-6, July 6, July 24	SWCA	Technical Memorandum – Burrowing Owl, Desert Kit Fox, and American Badger Survey Report for the Soda Mountain Solar Project (SWCA 2023)	One live burrowing owl detected, not associated with a nearby burrow. A total of 50 potential burrowing owl burrows observed, one of which had recent sign.

5.2.4 *Potential for Take*

As with Mojave desert tortoise, there are two types of take for burrowing owl that could potentially occur as a result of implementation of the project: the removal of habitat and direct harassment, harm, or mortality during project construction, maintenance, and operational activities, either by construction personnel and/or from the use of equipment. Based on the preliminary project design, the permanent removal of habitat suitable for burrowing owl is estimated to be approximately 1,592.5.

Based on the results of the burrowing owl surveys and seasonal timing of the incidental observations, it is likely that owls only overwinter or migrate through the project area. Breeding season surveys, conducted

in 2013 and 2023, show negative results for breeding pairs. Nonetheless it is possible that take of breeding pairs may occur. The Project area is within the breeding range of the species and the species could become established prior to construction or during operations and maintenance.

6 SPECIES TAKE AND IMPACT ANALYSIS – CCR § 783.2 (A)(6)

6.1 Approach

This assessment is based on the description of project activities, the baseline conditions of the project footprint, the ecology of desert tortoise and burrowing owl, the habitat that would be removed by the project, and the probability that desert tortoise and burrowing owl would be impacted by project activities.

Several key terms are used in this analysis to distinguish differences in the timing, duration, and magnitude of effects. Direct effects are those effects caused by and occur concurrently with the covered activities. Indirect effects are those effects caused by the proposed action but occur later in time and would be reasonably certain to occur. Permanent effects are those that persist after completion of a covered activity. Temporary effects occur during and/or immediately following a covered activity but diminish to insignificant levels as habitat recovers.

6.2 Direct Impacts

Direct impacts are those that may result from the Project activities and that may occur at the same time and place as the Project activities. Direct impacts are expected to occur from vegetation removal, grading, backfilling, cleanup and from the construction of the array field, underground collector lines, access roads, the flood control berms, 8-foot-high chain-link security fence, permanent and temporary desert tortoise fencing, buildings, warehouses, substation, switchyard, and interconnection facilities.

6.2.1 *Mojave Desert Tortoise*

Direct impacts to desert tortoise may occur as a result of dehydration as a result of being trapped in holes or trenches or stress-induced dehydration as a result of translocation activities, predation as a result of predators being attracted to the Project site, vehicle strikes, crushing of burrows and suffocation by construction equipment, vehicles, and humans walking through the Project site. Direct impacts may also occur from capture or entrapment in holes or trenches, uncovering of desert tortoises through the incidental excavation of burrows, corralling tortoises into a confined area when barrier fencing is constructed, and from capture for translocation.

6.2.2 *Western Burrowing Owl*

Direct impacts to burrowing owls may include potential take or harassment of individuals from ground-disturbing construction activities, increased vehicle traffic in the Project area, or increased risk of predation from predators attracted by human activities (e.g., coyotes, feral dogs, ravens). Direct impacts may also occur from entrapment and potential take of individuals in burrows from construction grading, discing, grubbing, and other ground-disturbing activities. Upon completion of Project construction, there

is potential of direct take of individuals from collision with infrastructure including panels, fencing, overhead lines, or project facilities.

6.2.3 *Impacts to Suitable Habitat*

Based on preliminary project design, permanent disturbance is estimated to be approximately 2,670.4 acres for both species (Table 3). Acreages of disturbance will be refined with the final project design. The solar panel arrays would be organized into the East Array and South Arrays (consisting of three sub-arrays: South 1, South 2, and South 3) on the southeast side of I-15(see Figure 3). The operation and maintenance building and storage area for all arrays would be located at the southwestern corner of the site. A high-voltage substation would be located adjacent to the East Array on the eastern side of I-15. A switchyard would be located northwest of I-15 adjacent to the LADWP 500-kV transmission line. The specific location of the interconnection between the substation and the transmission line would be designed through coordination between the Applicant and the LADWP. Within the Project site, 34.5-kV underground collection lines would connect the solar panel arrays to the substation.

The estimate for permanent disturbance (2,670.4 acres) includes the solar arrays, substation, switchyard, interconnection, access roads, berms, collector routes, laydown areas, and temporary desert tortoise exclusion fencing. Temporary disturbance may exist within these project components but are not yet defined while project civil design is still underway. As such, all impacts are currently being treated as permanent. The Applicant would restore the temporarily disturbed areas to pre-project conditions following construction.

Table 3. Estimated Permanent Surface Disturbance of Vegetation Communities and Land Cover

Vegetation Community	Global Rank*	State Rank†	Acres within the Study Area‡
Creosote Bush – White Bursage Scrub *Larrea tridentata – Ambrosia dumosa* Shrubland Alliance	G5	S5	2,459
Creosote Bush Scrub *Larrea tridentata* Shrubland Alliance	G5	S5	145
Rigid Spineflower – Hairy Desert Sunflower *Chorizanthe rigida – Geraea canescens* Desert Pavement Sparsely Vegetated Alliance (*Chorizanthe rigida – Geraea canescens* Desert Pavement Association)	G4	S4 (Sensitive Association)	32
Cheesebush – Sweetbush Scrub *Ambrosia salsola – Bebbia juncea* Shrubland Alliance	G4	S4	8.2
California Joint Fir – Longleaf Joint-fir *Ephedra californica – Ephedra trifurca* Shrubland Alliance (*Ephedra californica – Ambrosia salsola* Association)	G5	S4 (Sensitive Association)	1.2
Developed/Disturbed	N/A	N/A	25
Total	**N/A**	**N/A**	**2,670.4**

*Global Rank (NatureServe 2024):
G4 = Over 100 viable occurrences worldwide/statewide and/or more than 32,000 acres
G5 = Demonstrably secure because of its worldwide/statewide abundance

†State Rank (NatureServe 2024):
S4 = Over 100 viable occurrences worldwide/statewide and/or more than 32,000 acres
S5 = Demonstrably secure because of its worldwide/statewide abundance

‡ Vegetation Communities only. Does not include developed areas.

The Project is expected to cause the permanent loss of approximately 2,670.4 acres for desert tortoise and burrowing owl. Impacts to suitable habitat immediately surrounding the Project area has the potential to

be affected through habitat enhancement actions. Planting of native plant species may proliferate in the surrounding area and thus alter the habitat composition and potentially ecosystem function. Necessary maintenance activities such as mowing and weeding plants within the project area may additionally alter the surrounding habitat, and thus the suitability of it for burrowing owls.

6.3 Indirect Impacts

Covered activities could result in indirect impacts to habitat through several mechanisms that include long-term alteration of habitat. In general, indirect effects originate in areas that have been substantially altered for long periods of time. Project footprints and, to a lesser extent, graded work areas and equipment storage areas constitute substantially altered areas. The loss of habitat would be a direct effect, and indirect effects would be attributed to temporary increases in vehicular traffic, human presence, and noise and vibration during construction. Indirect impacts may also include a decrease in the local desert tortoise population over time, increased habitat fragmentation and edge effects, and the introduction/proliferation of invasive plant species. Similar activities would occur during the operations and maintenance (O&M) phase of the Project resulting in similar indirect effects. Other indirect effects include the increase of predators, such as common raven (*Corvus corax*) and coyote (*Canis latrans*), from increasing supplemental predator resources such perching and/or nesting sites, or food sources.

6.4 Duration of Impacts

The duration of effects to desert tortoise and burrowing owl habitat will occur from initial land conversion. The loss of habitat and direct and indirect effects will be for the life of the Project, which is estimated at 40 years. The loss of habitat and the direct effects to the species will be offset by the conservation of 2,670.4 acres of habitat that will be managed for the species in perpetuity.

7 JEOPARDY ANALYSIS – CCR § 783.2(A)(7)

7.1 Mojave Desert Tortoise

The Project is expected to permanently impact approximately 2,670.4 acres of suitable habitat for the desert tortoise. Proposed Project actions have the possibility of injuring or killing individual tortoises prior to and during construction due to noise, traffic, relocation of individuals, dust, and temporary conversion of habitat. This jeopardy analysis determines whether issuance of the ITP would jeopardize the continued existence of desert tortoise based on the following:

- Known population trends
- Known threats to desert tortoise
- Reasonably foreseeable impacts on desert tortoise from other related projects and activities

7.1.1 *Known Population Trends*

The petition to change the status of desert tortoise from threatened to endangered states that a “change in listing from Threatened to Endangered will reflect the current dire situation facing California’s state reptile and is necessary to generate substantially increased attention and efforts to reverse the very real likelihood that desert tortoise will become extinct in California” (Aardahl et al. 2020). The petition

author's reasoning was based on a scientific review of the species' distribution and status, and genetic analyses concluding that the Mojave population of desert tortoise is a distinct species. Thus, the range of desert tortoise is smaller than what it was understood to be when the species was listed approximately 30 years prior.

The 2020 petition cited permanent study plot and long-distance sampling results to examine population trends at the time the petition was drafted, summarizing data from the Western Mojave Recovery Unit, the Eastern Mojave Recovery Unit, and the Colorado Desert Recovery Unit. The data from the permanent study plots showed significant declines in desert tortoise populations in all the units, with an 86% decline in the Western Mojave Recovery Unit, a 76%-80% decline in the Eastern Mojave Recovery Unit, and an up to 90% decline in the Colorado Desert Recovery Unit. Since the permanent study plots were first established in the late 1970s to 2002, tortoise populations have experienced declines both in numbers of tortoises registered during the surveys and in densities of live tortoises (Berry and Medica 1995; Berry et al. 2002; Brown et al. 1999). Declines have been attributed to *Mycoplasmosis* disease mortality, predation on juveniles by common raven, tortoise shell (dyskeratosis) disease, and drought. Threats will be discussed in more detail in the following section.

The USFWS Desert Tortoise Recovery Office published reports of annual line distance sampling results since, with the first multi-year report issued in 2006 for years 2001–2005 (Aardahl et al. 2020). Using the line distance sampling data, Defenders of Wildlife prepared a series of graphs showing the population trend of adult desert tortoises from 2001 within CHUs in California, including a line showing the minimum viable density threshold of 3.9 adults per square kilometer, and a projected date of extirpation or extinction. An analysis of these data indicates the following:

- The aggregate adult tortoise densities in the Western Mojave Recovery Unit, Colorado Desert Recovery Unit, and Eastern Mojave Recovery Unit in California were below the population viability density of 3.9 adult tortoises per km^2.
- At the Critical Habitat Unit (CHU)/Tortoise Conservation Area (TCA)/Desert Wildlife Management Areas (DWMA) population level, nine of the 10 populations in these Recovery Units in California were below this viability density.
- For percent change in population abundance between 2004 and 2014, all populations in the three CHUs/TCAs/DWMAs except one (Joshua Tree National Park) experienced a decline.
- For percent change in population abundance in 2014 using 2004 data as a baseline, the aggregate change in all Recovery Units in California experienced declines ranging from 36 to 67 percent.
- In the Western Mojave Recovery Unit at the population level, the three populations experienced 50 to 61 percent declines.
- In the Colorado Desert Recovery Unit in California, five of six populations experienced 29 to 64 percent declines.
- In the Eastern Mojave Recovery Unit in California, the Ivanpah population experienced a 56 percent decline.
- Only the Joshua Tree population in the Colorado Desert Recovery Unit had an increase in population abundance. Despite this 178 percent increase, its population density was below the 3.9 tortoises per km2 population viability level.

In summary, the permanent study plots data and long-term monitoring data from the USFWS's line distance sampling show a multi-decadal decline in the density of adult desert tortoises in California (Aardahl et al. 2020). The 2020 petition was written following the publication of the *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*)*

(USFWS 2011) and has not been the subject of a *Federal Register* 90-day petition finding. It is also important to note that the notice of initiation of the 5-year review of desert tortoise was published in a May 20, 2021, *Federal Register Notice* (Department of the Interior 2021).

These data show a trend toward species decline. However, the Project site does not contain high-quality desert tortoise habitat and is not located in an area that is considered crucial to the recovery of the desert tortoise (i.e., critical habitat unit, desert wildlife management area, or other conservation areas for the desert tortoise) (USFWS 2016). Furthermore, per the BO, the proposed Project will not result in direct, known "take" of more than one (1) desert tortoise in any calendar year, and no more than five (5) can be killed or injured cumulatively. Finally, there is no limit on how many tortoises can be moved from harm's way.

7.1.2 *Known Threats*

Appendix A of the Revised Recovery Plan—*Threats to the Mojave Population of the Desert Tortoise and Its Habitat Since the Time of Listing* lists the following as threats to the longevity of the species:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range through:

1. Urbanization
2. Paved and Unpaved Roads, Routes, Trails, and Railroads
3. Off-Highway Vehicles
4. Invasive Plants
5. Fire
6. Grazing
7. Agriculture
8. Energy and Mineral Development
9. Landfills
10. Military Operations
11. Utility Corridors
12. Vandalism and Harvest of Vegetation

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

1. Collection by Humans
2. Deliberate Maiming and Killing by Humans
3. Research Activities

C. Disease or Predation

1. Disease
2. Toxicants and Disease Susceptibility
3. Predation

D. Inadequacy of Existing Regulatory Mechanisms

1. Law Enforcement
2. Land Acquisitions, Exchanges, and Transfers

E. Other Natural or Manmade Factors Affecting its Continued Existence

1. Climate Change
2. Garbage, Trash and Balloons

3. Noise and Vibration
4. Non-motorized Recreation and Miscellaneous Human Activities
5. Unauthorized Release or Escape of Captive Tortoises to the Wild

The proposed Project will present a number of these threats including paved and unpaved roads; the introduction or dispersal of invasive plants; habitat loss and habitat disturbance through energy development; and an increase in predators attracted to the Project site by uncontained food and/or water. However, the proposed Avoidance and Minimization Measures defined in Section 8 will minimize or fully mitigate these impacts.

7.1.3 *Reasonably Foreseeable Impacts on Mojave Desert Tortoise*

The BO assessed the cumulative effects that projects in the "action area"[1] could have on the recovery and survival of desert tortoise. Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action were not considered in the cumulative effects assessment in the BO because they would require separate USFWS Section 7 consultation. Furthermore, the BLM manages most of the land in the action area, thus the BLM will ensure that any future actions on lands managed by the BLM will undergo project-specific consultation pursuant to Section 7 of the ESA. Based on this assessment the BO did not anticipate any cumulative effects associated with future activities on public lands, and the USFWS was not aware of any actions that were reasonably certain to occur on non-federal lands within the action area at the time that the BO was issued.

7.1.4 *Jeopardy Finding*

The Project site does not contain high-quality desert tortoise habitat and is not located in an area that is considered crucial to the recovery of the desert tortoise. In addition, the USFWS has issued maximum take allowances and permitted unlimited safe relocation of desert tortoise for the proposed Project, thereby limiting take to a number that will not impact desert tortoise population trends negatively. The proposed Project does have the potential to introduce/exacerbate a number of known threats to desert tortoises, including paved and unpaved roads; the introduction or dispersal of invasive plants; habitat loss and habitat disturbance through energy development; and an increase in predators attracted to the Project site by uncontained food and/or water. However, the proposed Avoidance and Minimization Measures defined in Section 8 will minimize or fully mitigate these impacts. Finally, there are no reasonably foreseeable impacts due to cumulative effects of additional projects in the vicinity of the proposed Project area. Thus, based on the known population trends, known threats, and reasonably foreseeable impacts to the species, it has been determined that the proposed Project is not likely to jeopardize the continued existence of the desert tortoise.

7.2 Western Burrowing Owls

The Project is expected to permanently impact approximately 2,670.4 acres of suitable habitat for burrowing owls. Proposed Project actions have the possibility of injuring or killing individual owls prior to and during construction due to noise, traffic, relocation of individuals, dust, and conversion of suitable

[1] The "action area" was determined by the USFWS to be the 2,942-acre Project ROW, the LADWP switchyard, access routes from I-15, and the recipient sites for translocated desert tortoises. The total size of the action area with all features included is approximately 7,500 acres.

habitat. This jeopardy analysis determines whether issuance of the ITP would jeopardize the continued existence of burrowing owls based on the following:

- Known population trends
- Known threats
- Reasonably foreseeable impacts from other related projects and activities

7.2.1 *Known Population Trends*

The petition to protect the western burrowing owl under CESA as threatened or endangered, depending on region, was accepted for consideration by CDFW on October 14, 2024. While a listing status is considered and ultimately decided the burrowing owl is classified as a candidate species and is thus afforded the same protections as state-listed species. Reasoning for the species' listing was based on a scientific review of the species' distribution and status in which declines in breeding habitat and fledgling success, as well as local extirpation from historically abundant populations, was determined to be significant and widespread throughout the state.

The western burrowing owl was a historically common species and was widely distributed throughout the grasslands, shrub steppe, and deserts of California. Burrowing owls require open to semi-open habitat with low-stature vegetation and bare ground. Nesting burrows are typically selected in rolling hills, steeps slopes, or cliffs, facing the prevailing wind directions. They can also be found nesting in urbanized environments that provide some of these preferred burrow characteristics such as roadsides, airport infields, pastures, rural parks, golf courses, and in particular, fallow agricultural fields. Breeding burrowing owls are predominantly nonmigratory and remain year-round, with some winter immigration into California from northern portions of the Canadian range (Trulio et al. 2023).

While population declines throughout California has been noted as early as the 1940s, burrowing owls have been historically scarce and have occurred in small, scattered populations within the Southern Desert region (wherein the proposed project is located). The first systematic survey of this region was conducted in 2006-2007 and resulted in an estimated of up to 560 pairs of breeding owls. These pairs were concentrated within the Western Mojave Desert and Palo Verde Valley and were associated with the presence of either banks of irrigations canals or fall agricultural fields. Few to no pairs of breeding adults were observed in the Eastern Mojave Desert, Northern Mojave / eastern Sierra Nevada, and Sonoran Desert regions (Wilkerson and Siegel 2011).

The burrowing owl has been extirpated as a breeding species by human activities from at least 19 of 51 California counties where it formerly occurred; and is nearing extirpation in 10 other counties. As an extension of the surveys conducted in the Southern Desert region, Wilkerson and Siegel (2010b) surveyed the entire breeding range of the burrowing owl in California. It was determined that approximately 69% of the state's breeding population occurred in the Imperial Valley, with an estimated breeding population of 6,408 pairs. This was a non-significant decrease in, approximately 3%, from historical surveys conducted in this region in 1993. Additional regions noted more significant declines, with a 20% decrease in the Southern Central Valley, 16% decrease in the Middle Central Valley, and a 100% decrease in the Northern Central Valley.

7.2.2 *Known Threats*

Primary threats facing burrowing owls in California are direct mortality and permanent habitat loss caused by urbanization, utility-scale renewable energy development, and reduction or elimination of their primary burrow excavators, ground squirrels, mainly from grazing and agricultural lands. Because of their

highly specialized lifestyle and dependence on burrows, burrowing owls are extremely vulnerable to direct and indirect impacts of ground-disturbing activities and eradication of ground squirrels and other fossorial species responsible for creating suitable burrows. Specifically, the petitioners cite the following factors affecting the viability of California burrowing owl populations:

- Loss of nesting and foraging habitat to human uses such as urbanization and incompatible agriculture, which results in direct mortality and lower population numbers as available habitat decreases.
- Destruction of nest burrows during urban development and agricultural activities by surface disturbances such as disking, blading, grading, and over covering, which may result in direct mortality of adults and young and may reduce the habitat quality and carrying capacity.
- Elimination of burrowing rodents, through means (including anticoagulant rodenticides and gassing) which may result in direct owl mortality, as well as ultimately making an area unsuitable for owls, thereby reducing available habitat.
- Active and or passive relocation of owls out of occupied habitat to accommodate urban development, which rarely results in successful breeding at the relocation sites, and crowds remaining owls onto smaller and smaller patches of habitat.
- Predation of burrowing owls by non-native and feral animals (including red fox and feral cats), which significantly reduces nesting success and productivity.
- Increased predation by native predators as more individuals compete for fewer resources in shrinking grassland habitat.
- Mortality due to industrial energy projects (solar and wind), vehicle collisions and other anthropogenic causes.
- Lack of vegetation management, including grazing, mowing, fire. This results in grasslands overgrown with tall weedy vegetation, eliminating burrowing owls and ground squirrel occupation. Novel or hybrid grassland ecosystems dominated by non-native forbs and Mediterranean grasses require regular monitoring and vegetation management for burrowing owl occupancy and nest success.
- Extended drought conditions (climate change) leading to decreased prey populations.
- Extreme weather events (climate change), such as extensive flooding killing ground squirrels and temporarily limiting roosting, breeding, and foraging habitat for burrowing owls.
- The proposed Project will primarily pose the threats of habitat loss and habitat disturbance through industrial-scale energy development; and a potential increase in predators attracted to the Project site by uncontained food and/or water. However, the proposed Avoidance and Minimization Measures defined in Section 8 will minimize or fully mitigate these impacts.

7.2.3 *Reasonably Foreseeable Impacts on Western Burrowing Owls*

The project was assessed for cumulative effects within the Eastern Mojave, a biogeographic subunit of the Southern Desert region defined and widely accepted by burrowing owl subject matter experts. Cumulative effects include the effects of future federal, state, tribal, local, or private actions that are reasonably certain to occur within this area. Urbanization from any of these entities is likely to continue to expand in the area, as human populations and the subsequent need for affordable housing and land continues to

simultaneously grow. Development of utility-scale renewable energy facilities is likely to continue and expand into the Eastern Mojave, as the landscape is well suited to the efficacy of these power types.

The proposed Project does fall within the boundary of the Desert Renewable Energy Conservation Plan (DRECP), an initiative to allow development of industrial-scale solar, wind and geothermal projects. The DRECP proposed several areas designated as development focus areas, along with several areas in which environmental resources are to be conserved and protected. The proposed Project falls within neither of these categories and is not proximate to any development focused areas. It is therefore a reasonable assumption that continued development of industrial renewable energy projects will not proliferate in the area. Based on this assessment it is not anticipated any cumulative effects associated with future activities on public lands, and an examination of private development did not uncover significant amounts of development in the surrounding area.

7.2.4 *Jeopardy Finding*

The Project site does not contain high-quality burrowing owl habitat and is not located in an area that supports high densities of breeding pairs. The proposed Project does have the potential to introduce/exacerbate a number of known threats to burrowing owl, including increased vehicle traffic; habitat loss and habitat disturbance through energy development; and an increase in predators attracted to the Project site by uncontained food and/or water.

However, the proposed Project is located within a region in which breeding pairs are not abundant and populations do not occur at high densities. This is supported by the findings published by Wilkerson and Siegel (2010; 2011) and is further supported by the sporadic and infrequent sightings and lack of regular burrow use observed during surveys at the project site. The proposed Project site is additionally surrounded by land use types that do not support high-quality habitat (i.e., OHV to the southeast) or prevent migration of satellite populations into the project area (i.e., Interstate 15 to the northwest). Furthermore, the proposed Avoidance and Minimization Measures defined in Section 8 will minimize or fully mitigate these impacts. Finally, there are no reasonably foreseeable impacts due to cumulative effects of additional projects in the vicinity of the proposed Project area. Thus, based on the known population trends, known threats, and reasonably foreseeable impacts to the species, it has been determined that the proposed Project is not likely to jeopardize the continued existence of the burrowing owl.

8 MEASURES TO MINIMIZE AND FULLY MITIGATE IMPACTS – CCR § 783.2(A)(8) - DRAFT

8.1 Avoidance and Minimization Measures

The CESA stipulates the measures or alternatives required for an ITP should be proportional in extent to impacts on the species that results from a project. Implementation of the Applicant-proposed avoidance and minimization measures (AMMs) shown below, will ensure that take of desert tortoise and burrowing owl will be avoided and minimized to the greatest practical extent, and fully mitigated.

8.1.1 *General Protective Measures*

1. **Designated Representative.** Applicant shall designate a representative (Designated Representative) responsible for communications with CEC and overseeing compliance with

Project AMM's. Applicant shall notify CEC in writing a minimum of 40 days before starting Project activities of the Designated Representative's name, business address, office and mobile phone numbers, and email address, and shall notify CEC in writing if a substitute Designated Representative is selected or identified at any time during the term of the Project.

a. The Applicant shall submit to CEC in writing the name, qualifications, business address, office and mobile phone numbers, and email address of Authorized/Designated Biologists(s), Biological Monitor(s), and if needed veterinarian(s) at least 30 days prior to starting Project activities or with change of personnel.

b. The Applicant shall obtain CEC approval a minimum of 30 days prior to the start of Project activities in a Memorandum of Understanding (MOU) for Authorized/Designated Biologist(s), Biological Monitor(s), and veterinarian(s) to conduct activities in compliance with Project AMMs and the associated desert tortoise translocation plan and burrowing owl mitigation and monitoring plan.

c. The Applicant shall also obtain approval from CEC in writing in advance if Authorized/Designated Biologist(s), Biological Monitor(s), and veterinarian(s) must be changed. The applicant shall submit to CEC an Excel spreadsheet listing in alphabetical order by last name first the names of personnel the Applicant wants approved by CEC as Authorized/Designated Biologist(s), Biological Monitor(s), and veterinarian(s) and each activity as outlined in the Project AMM's and associated desert tortoise translocation plan for which the Applicant is requesting authorization.

2. **Biological Monitor(s).** Biological Monitor(s) shall be knowledgeable and experienced in the biology, natural history, collecting and handling of the desert tortoise. The Biological Monitor(s) shall be responsible for monitoring Project activities to help minimize and fully mitigate or avoid the incidental take of individual desert tortoise and to minimize disturbance of desert tortoise' habitat.

3. **Authorized/Designated Biologist(s).** Applicant shall ensure that the Authorized/Designated Biologist(s) is knowledgeable and experienced in the biology, natural history collecting and handling, health assessment procedures, survey protocols of the desert tortoise. The Authorized/Designated Biologist(s) shall be responsible for monitoring Project activities to help minimize and fully mitigate or avoid the incidental take of individual desert tortoise and to minimize disturbance of desert tortoise' habitat. The Applicant shall assign at least one Authorized/Designated Biologist to the Project. The Applicant shall submit the resume of the proposed Authorized/Designated Biologist(s), with at least three references and contact information, to the CEC and BLM Authorized Officer (AO) for approval in consultation with CDFW and USFWS. The Authorized/Designated Biologist(s) must meet the following minimum qualifications:

   a. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;

   b. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;

   c. Have at least one year of field experience with biological resources found in or near the Project site;

   d. Meet the current USFWS Authorized/Designated Biologist qualifications criteria, demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS.

e. Possess a CESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CEC and BLM AO, in consultation with CDFW and USFWS, that the proposed Authorized/Designated Biologist(s) or alternate has the appropriate training and background to effectively implement the mitigation measures.

4. **Authorized/Designated Biologist(s) and Biological Monitor(s) Authority**. The Authorized/Designated Biologist(s) and Biological Monitor(s) shall have authority to immediately stop any activity that does not comply with the Project AMMs, and/or to order any reasonable measure to avoid the unauthorized take of an individual of the desert tortoise.

5. **Worker Environmental Awareness Program (WEAP)**. Applicant shall conduct a WEAP for all persons employed or otherwise working in the Project Site before performing any work. The WEAP shall consist of a presentation from the Biological Monitor(s) or Authorized/Designated Biologist(s) that includes a discussion of the biology and general behavior of the desert tortoise and burrowing owl, information about the distribution and habitat needs of the desert tortoise and burrowing owl, sensitivity of the desert tortoise and burrowing owl to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project- specific protective measures described in the Project AMM's. Applicant shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Site. Applicant shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Site. Upon completion of the WEAP, employees shall sign a form stating they attended the program and understand all protection measures. This WEAP training shall be repeated at least twice annually for long-term and/or permanent employees that will be conducting work on the Project Site.

6. **Construction Monitoring Notebook**. The Biological Monitor(s) and Authorized/Designated Biologist(s) shall maintain a construction-monitoring notebook on-site throughout the construction period, which shall include a copy of the Project AMM's with attachments and a list of signatures of all personnel who have successfully completed the education program. Applicant shall ensure a copy of the construction-monitoring notebook is available for review at the Project Site upon request by CEC.

7. **Trash Abatement**. Applicant shall initiate a trash abatement program before starting Project activities and shall continue the program for the duration of the Project. Applicant shall ensure that trash and food items are contained in animal-proof containers and removed at least once a week to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.

8. **Dust Control**. Applicant shall implement dust control measures during Project activities to facilitate visibility for monitoring of the desert tortoise by the Biological Monitor(s) and Authorized/Designated Biologist(s). Applicant shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles.

9. **Erosion Control Materials**. Applicant shall prohibit use of erosion control materials potentially harmful to desert tortoise, burrowing owl, and other species, such as monofilament netting (erosion control matting) or similar material, in potential habitat.

10. **Delineation of Project Site.** Before starting Project activities along each part of the route in active construction, Applicant shall clearly delineate the boundaries of the Project Site with fencing, stakes, or flags. Applicant shall restrict all Project activities to within the fenced, staked, or flagged areas. Applicant shall maintain all fencing, stakes, and flags until the completion of Project activities in that area.

11. **Delineation of Habitat**. Applicant shall clearly delineate desert tortoise and burrowing owl habitat within the Project Site with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of habitat.
12. **Construction Impact Minimization**. The project shall implement an advanced technology terrain-following solar tracker system (such as the Nextracker NX Horizon-XTR-0.75 10-inch tracker system, Nevados All Terrain Tracker system, or other system resulting in a similar reduction) that reduces grading under the solar field, consisting of solar power arrays identified as East Array and South Arrays 1, 2 and 3. Quarterly construction monitoring reports shall be provided to the California Energy Commission during the construction period for the project. The quarterly construction monitoring reports shall quantify and document all remaining permanent and temporary grading acreage from project construction with the terrain-following tracker system. All temporary grading impact areas shall be revegetated onsite as described in the project-specific Temporary Disturbance Revegetation Plan. All permanent grading impact areas shall be mitigated at the required compensatory mitigation standards of the resource agencies.
13. **Project Access**. Project-related personnel shall access the Project Site using existing routes, or routes identified in the Project Description and shall not cross desert tortoise' or burrowing owl habitat outside of or in route to the Project Site. Applicant shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. Applicant shall ensure that vehicle speeds do not exceed 20 miles per hour to avoid desert tortoise or burrowing owl on or traversing the roads. If Applicant determines construction of routes for travel are necessary outside of the Project Site, the Designated Representative shall contact CEC for written approval before carrying out such an activity. CEC may require an amendment to the Project AMM's, among other reasons, if additional take of desert tortoise or burrowing owl will occur as a result of the Project modification.
14. **Staging Areas.** Applicant shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to designated laydown areas or disturbed areas. Additionally, Applicant shall not use or cross desert tortoise' or burrowing owl habitat outside of the marked Project Site.
15. **Hazardous Waste**. Applicant shall immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. Applicant shall exclude the storage and handling of hazardous materials from the Project Site and shall properly contain and dispose of any unused or leftover hazardous products off-site.
16. **CEC Access**. Applicant shall provide CEC staff with reasonable access to the Project and mitigation lands under Applicant control and shall otherwise fully cooperate with CEC efforts to verify compliance with or effectiveness of mitigation measures set forth in the Project AMM's.
17. **Refuse Removal.** Upon completion of Project activities, Applicant shall remove from the Project Site and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.
18. **Firearms and Dogs.** Applicant shall prohibit firearms and domestic dogs (except service dogs) from the Project Site and site access routes during Project activities, except those in the possession of authorized security personnel or local, state, or federal law enforcement officials.
19. **Escape Ramp in Trench.** At the end of each workday, Applicant shall place an escape ramp at each end of trenches to allow any animals that may have become trapped in the trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees.

20. **Herbicides.** Only herbicides containing a harmless dye and registered with the California Department of Pesticide Regulation (DPR) shall be used. All herbicides shall be applied in accordance with regulations set by DPR. All herbicides shall be used according to labeled instructions. Labeled instructions for the herbicide used shall be made available to CEC upon request. No herbicide application when winds are greater than five (5) miles per hour.
21. **Post contaminated material removal.** Once the contaminated material has been removed, Applicant shall slope and contour the disturbed area to blend naturally into the streams existing gradients.
22. **Rodenticides and Insecticides.** Applicant shall not use rodenticides and/or insecticides on the Project Site without prior written permission from CEC. Applicant shall not use any second-generation anticoagulant rodenticide (brodifacoum, bromadiolone, difethialone, and difenacoum) on the Project Site. Applicant shall not use any first-generation anticoagulant rodenticide (diphacinone, chlorophacinone, and warfarin) on the Project Site without prior written permission from CEC.
23. **Trench Inspection.** To prevent entrapment of desert tortoise or any other wildlife, the Biological Monitor(s) or Authorized/Designated Biologist(s) shall inspect all holes and trenches for entrapped animals at the beginning, middle, and end of each day. The Biological Monitor(s) or Authorized/Designated Biologist(s) shall oversee the covering of all excavated holes and trenches at the close of each working day by plywood or other barrier materials such that animals are unable to enter and become entrapped. Before holes and trenches are filled, the Biological Monitor(s) or Authorized/Designated Biologist(s) shall thoroughly inspect them for trapped animals. If any worker discovers that desert tortoise have become trapped, they shall halt Project Activities and notify the Authorized/Designated Biologist(s) immediately. Project workers and the Biological Monitor(s) or Authorized/Designated Biologist(s) shall allow the desert tortoise to escape unimpeded if possible, or an Authorized/Designated Biologist(s) approved under Condition 6 of the Project AMM's shall move the desert tortoise out of harm's way before allowing work to continue.
24. **ROW**. Applicant shall condition the ROW grant to reduce adverse effects associated with moving desert tortoises.
25. **Restore Areas of Temporary Disturbance**. After project construction, the Applicant will restore areas of temporary disturbance as described in a vegetation resource management plan.
26. **Seed Collection**. The Applicant will preferentially perform native seed collection for restoration work from areas adjacent to the project site. When it is necessary (i.e., native seed from the surrounding area is not available for collection) to use native seeds from commercial vendors, the Applicant will only accept seed that is free of non-native weed seeds.
27. **Road Revegetation.** The Applicant will confine project access to two roads for construction. Following construction, one of the roads will be revegetated and the other road will be maintained for use during operation, maintenance, and decommissioning of the facilities. The Applicant will temporarily fence these roads with construction fencing prior to the onset of construction; following construction, the fencing will be removed. To reduce the potential for vehicle strikes of desert tortoises and burrowing owls on unfenced access roads, the Applicant will enforce a 15-mile-per-hour speed limit for project related travel (i.e., construction, operation, maintenance, and decommissioning) in these areas. The Applicant will post speed limit signs along all access routes.
28. **Integrated Weed Management**. Prior to construction, the Applicant will submit an integrated weed management plan (IWMP) to CEC for approval. The IWMP will comply with all weed management measures included in the Project BO.

8.1.2 *Monitoring, Notification, and Reporting Measures*

1. **Notification Before Commencement of Project activities.** The Designated Representative shall notify CEC in writing 14 calendar days before starting Project activities and shall document using the MMRP compliance with all pre-Project Conditions of Approval before starting Project activities.
2. **Notification of Non-compliance.** The Designated Representative shall immediately notify CEC in writing if it determines that the Applicant is not in compliance with any Condition of Approval of the ITP, including but not limited to any actual or anticipated failure to implement measures within the time periods indicated in the ITP and/or the MMRP. The Designated Representative shall report in writing any non-compliance with the ITP to CEC within 12 hours.
3. **Emergency Activities.** The Authorized/Designated Biologist(s) or Biological Monitor(s) shall implement measures to minimize the impacts to the Covered Species to the maximum extent possible. As a part of the emergency response, the Designated Representative shall notify CEC in writing within 12 hours after the emergency work begins. The Designated Representative shall provide a description and location of the Emergency Activities and if any impacts to Covered Species occurred. Following containment and during cleanup, CEC may recommend specific measures to protect the Covered Species, their habitat, or for the recovery of damaged habitat. A written report summarizing these actions shall be provided to CEC within 15 days following completion of Emergency Activities.
4. **Compliance Monitoring**. The Authorized/Designated Biologist(s) and Biological Monitor(s) shall be on-site daily when Project activities occur. The Authorized/Designated Biologist(s) and Biological Monitor(s) shall conduct compliance inspections to (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of species; (3) check for compliance with all measures of the ITP; (4) check all exclusion zones; and (5) ensure that signs, stakes, and fencing are intact, and that Project activities are only occurring in the Project Site. The Designated Representative, Authorized/Designated Biologist(s), and Biological Monitor(s) shall prepare daily written observation and inspection records summarizing oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by the ITP. The Authorized/Designated Biologist(s) shall conduct compliance inspections a minimum of three times a day (once during the onset of the day's work, once mid-day, and once at the conclusion of that day's work) during periods of inactivity and after clearing, grubbing, and grading] are completed.
5. **Monthly Compliance Report.** The Designated Representative or Authorized/Designated Biologist(s) shall compile the observation and inspection records identified in Condition 26 into a Monthly Compliance Report, which shall include a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. The Designated Representative shall submit in writing the Monthly Compliance Report to CEC by the 10th of every month for the previous month's activities. The Designated Representative shall submit the Monthly Compliance Reports to the CEC offices listed in the Notices section of the ITP and via e-mail to CEC's Regional Representative. CEC may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If CEC determines the reporting schedule must be changed, CDFW will notify Applicant in writing of the new reporting schedule.
6. **Annual Status Report (ASR).** Applicant's Designated Representative shall provide CEC with an Annual Status Report (ASR) for the previous year no later than January 31 of every year beginning with issuance of the ITP and continuing until CEC accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: (1) a summary of all Monthly

Compliance Reports for that year identified in Condition 26; (2) a general description of the status of the Project Site and Project activities, including actual or projected completion dates, if known; (3) a copy of the table in the MMRP with notes showing the current implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; (6) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and (7) information about other Project impacts on the Covered Species.

7. **California Natural Diversity Data Base (CNDDB) Observations**. The Designated Representative shall submit all observations of Covered Species to CDFW's California Natural Diversity Database (CNDDB) within 10 calendar days of the observation and the Designated Representative shall include copies of the submitted forms with the next Monthly Compliance Report or ASR, whichever is submitted first relative to the observation.

8. **Final Mitigation Report**. No later than 45 days after completion of all mitigation measures, Applicant's Designated Representative shall provide CEC with a Final Mitigation Report. The Authorized/Designated Biologist(s) shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Monthly Compliance Reports and all ASRs; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project- related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Project activities; (6) an assessment of the effectiveness of the ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and(8) any other pertinent information.

9. **Notification of Take or Injury (NTI)**. Applicant shall immediately notify the Designated Representative or Authorized/Designated Biologist(s) if a Covered Species is taken or injured by Project activities, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Authorized/Designated Biologist(s) or Designated Representative shall provide initial notification immediately to CEC and CDFW by calling the Regional Office at (909) 466-8462 and by notifying via email the CEC and CDFW Regional Representative. The initial immediate notification shall include information regarding the location of the animal and/or carcass, date and incident location, time of incident, name of the Authorized/Designated Biologist(s) present, the activity that caused the take or injury, common and scientific names of species taken or injured, and the ITP Number. Following initial notification, Applicant's Designated Representative shall send CEC and CDFW a Notification of Take or Injury (NTI) written report via email within two (2) calendar days. The NTI written report shall include the information in the initial notification and if possible, provide a photograph of the species that was taken or injured, and preventative measures that will be implemented to prevent take or injury of Covered Species.

8.1.3 *Take Minimization Measures*

10. **Raven Management.** The Applicant shall prepare a Raven Management Plan to minimize the potential to attract common ravens to the site and submit it to CEC for review and approval. In addition, the Applicant shall provide funds to the Renewable Energy Action Team (REAT) account established with the National Fish and Wildlife Foundation (NFWF) to contribute to a region-wide raven control plan to help address raven predation on the tortoise. This contribution

shall be used to address raven predation on a regional basis and shall be calculated as a one-time payment of $105 per acre of project disturbance. Based on this calculation the Applicant shall provide a one-time payment at $105.00 for 2,670.4 acres for a total of $280,392 to the REAT account established with NFWF's Raven Management Plan fund. A minimum of 30 days prior to the start of Project activities these funds shall be provided to NFWF and proof of paying this fee shall be provided to CEC.

11. **Pre-Construction Desert Tortoise Clearance Surveys**. No more than 30 days prior to start of Project activities, the Authorized/Designated Biologist(s) and/or Biological Monitor(s) approved under the General Measures of the ITP shall conduct pre-construction surveys for desert tortoise, using the methods described in Chapter 6 of the USFWS Desert Tortoise Field Manual 2009, incorporated herein by reference. In addition to the guidance provided in the Manual, CDFW provides the following requirement(s):
    a. Preconstruction clearance surveys will be completed using perpendicular survey routes within the Project Site. Preconstruction clearance surveys cannot be combined with other clearance surveys conducted for other species while using the same personnel. Project activities cannot start until two (2) negative result separate consecutive surveys using perpendicular survey routes have been done for the desert tortoise.
    b. Twenty-Four (24) hours prior to the start of Project activities, the Biological Monitor(s) and /or Authorized/Designated Biologist(s) shall conduct a second survey of the Project Site. Within the Project Site, the use of specialized equipment (e.g., fiber optics) may be necessary to thoroughly inspect all burrows in preparation for collapsing them.
12. **Pre-Construction Burrowing Owl Clearance Surveys.** No more than 30 days, or two weeks during breeding season (February 1 – August 31), prior to the start of construction, a pre-construction survey for burrowing owls in conformance with the CDFW Staff Report on Burrowing Owl Mitigation (CDFG 2012) shall be completed within suitable habitat at every work area and within a 150-meter buffer zone of each work area. The Applicant/Owner shall submit the results of the pre-construction survey to BLM's Authorized Officer and CEC. The Applicant/Owner shall also submit evidence of conformance with federal and state regulations regarding the protection of the burrowing owl by demonstrating compliance with the following:
    a. Unless otherwise authorized by BLM and CEC, no disturbance shall occur within 160 feet (50 meters) of occupied burrows during the non-breeding season (September 1 through January 31) or within 650 feet (500 meters) during the breeding season (February 1 through August 31).
    b. Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31). In the event that an occupied burrow absolutely cannot be avoided (e.g., due to physical or safety constraints), passive relocation of owls may be implemented prior to construction activities only if a qualified biologist approved by BLM verifies through noninvasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans (developed in accordance with BLM protocol for burrowing owls) by CEC and receipt of formal written approval from BLM authorizing the eviction. A Burrowing Owl Mitigation and Monitoring Plan shall be submitted to the BLM's Authorized Officer and CEC for review and approval prior to passive relocation.
    c. Unless otherwise authorized by BLM, a 650-foot buffer within which no activity will be permissible will be maintained between Project activities and nesting burrowing owls during the nesting season. This protected area will remain in effect until August 31 or at

BLM's discretion and based upon monitoring evidence, until the young owls are foraging independently.

d. If accidental take (disturbance, injury, or death of owls) occurs, the Designated Biologist will be notified immediately.

e. Impacts to active burrowing owl territories shall be mitigated at a 1:1 ratio through a combination of off-site habitat compensation and/or off-site restoration of disturbed habitat capable of supporting this species. The acquisition of occupied habitat off-site shall be in an area where turbines would not pose a mortality risk. Acquisition of habitat shall be consistent with the CDFW Staff Report on Burrowing Owl Mitigation (CDFG 2012). The preserved habitat shall be occupied by burrowing owl and shall be of superior or similar habitat quality to the impacted areas in terms of soil features, extent of disturbance, habitat structure, and dominant species composition, as determined by a qualified ornithologist. The site shall be approved by BLM. Land shall be purchased and/or placed in a conservation easement in perpetuity and managed to maintain suitable habitat. The off-site area to be preserved can coincide with off-site mitigation lands for permanent impacts to sensitive vegetation communities, with the approval of the BLM and CEC.

13. **Desert Tortoise Translocation**. Regardless of the number of desert tortoise estimated to be translocated the Applicant shall prepare a Desert Tortoise Translocation Plan (DTTP) per the Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance (USFWS 2020). The DTTP will address/include the following:

    a. Protocols and rationale

    b. Health assessments

    c. Determination of if desert tortoise on the project site will be held on- or off-site

    d. Project fencing and clearance protocols

    e. Translocation

    f. Data compilation and synthesis

    g. Post-translocation monitoring

14. **Excavating Burrows.** Only Authorized/Designated Biologist(s) and Biological Monitor(s) approved by CDFW under the General Measures of the ITP are authorized to conduct burrow excavation. Conduct excavation of burrows following the methods described in Chapter 6 of the USFWS Desert Tortoise Field Manual 2009.

15. **Burrow Exclusion and Closure**. Unoccupied burrows will be excluded by excavating and collapsing the burrows, using hand tools. A qualified biologist will scope inactive burrows prior to collapse to confirm the burrow is unoccupied. In the event that an occupied burrow cannot be avoided, passive relocation of burrowing owls will be conducted prior to construction and according to the CDWF's Staff Report on Burrowing Owl Mitigation (CDFG 2012). Burrowing owls occupying burrows on site will be passively relocated outside the nesting season or after a qualified biologist determines that the burrow does not contain eggs or chicks and after consultation with CEC. If deemed necessary, the conditions of passive relocation will be coordinated with and approved by CEC.

16. **Burrow Buffers**. If active burrowing owl burrows are found, they will be avoided using non-disturbance buffers created by Scobie and Faminow (2000). The non-disturbance buffers may be reduced by the Designated Biologist based on compelling evidence that the reduced buffer will not impact nesting activity (e.g., concealment of the nest site by vegetation or topography, level of project activity and noise within the reduced buffer, level of previous activity or vehicle noise

in the area). The Designated Biologist shall increase the buffer if burrowing owls show signs of intolerance to construction activities within a reduced buffer zone.

17. **Nest and Egg Handling**. Only Authorized/Designated Biologist(s) and Biological Monitor(s) approved by CEC under the General Measures of the ITP are authorized to handle eggs. Conduct egg handling, using the methods described in Chapter 6 and 7 of the USFWS Desert Tortoise Field Manual 2009.
18. **Extracting Desert Tortoises from Burrows.** Only Authorized/Designated Biologist(s) and Biological Monitor(s) approved by CEC are authorized to extract desert tortoises from burrows. Extract Desert tortoises from burrows, using the methods described in Chapter 6 of the USFWS Desert Tortoise Field Manual 2009.
19. **Temporary Desert Tortoise Exclusion Fencing.** The Applicant will be installing temporary desert tortoise exclusion fencing (such as silt fencing, sold drift fencing, or USFWS desert tortoise exclusionary fencing) fence between the array fields during construction then the fencing will be removed after the completion of construction. Construct the temporary desert tortoise fence according to Chapter 8 of the USFWS Desert Tortoise Field Manual 2009. Authorized/Designated Biologist(s) or Biological Monitor(s) approved by CEC under the General Measures of the ITP will be present during the installation of the temporary desert tortoise fence. Fencing may be taken down temporarily to allow for access to the project site and to allow for any Project activities during the day. While the fence is down an approved Authorized/Designated Biologist(s) or Biological Monitor(s) shall monitor the opening. The fencing that is taken down shall be reinstalled at the end of each working day under the purview of the Authorized/Designated Biologist(s) or Biological Monitor(s). The fence shall be inspected a minimum of three times per day (once each morning prior to the start of construction, once mid-day, and once at the end of the workday after work has ceased). If the fence is found down the fence shall be reinstalled, and a preconstruction clearance survey shall be conducted prior to continuing project activities.
20. **Project Activities Outside Permanent Desert Tortoise Exclusion Fence**. Once the temporary desert tortoise exclusionary fence is removed Project activities that occur outside the maintained permanent desert tortoise exclusion fence shall be monitored for the life of the project (30 years) by an Authorized/Designated Biologist(s) or Biological Monitor(s) approved by CEC under the General Measures of the ITP.
21. **Desert Tortoise Guards.** All desert tortoise guards installed shall follow a CEC-approved design.
22. **Permanent Security Fencing with Attached Desert Tortoise Fencing.** The permanent desert tortoise exclusion fencing will be attached to the 8-foot-high standard chain link security fencing. This fencing will be installed around the array fields, operation and maintenance facilities, warehouses, substations, switchyard, and interconnection facilities. Construct the desert tortoise fence according to Chapter 8 of the USFWS Desert Tortoise Field Manual 2009, but if any tortoises <100 mm MCL are translocated within 500 ms of the Project Site tortoise fencing shall be 16 gauge or heavier galvanized after welded wire with mesh opening of ½ inch horizontal by ½ inch vertical.
23. **Desert Tortoise Fencing Maintenance.** The Biological Monitor(s) or Authorized/Designated Biologist(s) shall inspect the desert tortoise fencing during the Project activities, at the end of each workday, and during and after major rainfall events to ensure desert tortoise is prohibited from entering the Project Site. If the fence is compromised, repairs shall be completed at that time.

24. **Vehicle Inspection.** Workers shall inspect for desert tortoise under vehicles and equipment every time before the vehicles and equipment are moved. If a desert tortoise is present, the worker shall contact the Authorized/Designated Biologist(s) and wait for the desert tortoise to move unimpeded to a safe location OR the Authorized/Designated Biologist(s) shall translocate the desert tortoise as described in the DTTP before moving vehicles and equipment.
25. **Minimization of Vegetation Removal**. Applicant shall minimize vegetation removal associated with construction activities to the fullest extent possible. The Biological Monitor(s) or Authorized/Designated Biologist(s) shall review and approve or deny any grubbing or clearing of vegetation. Vegetation removal shall take place outside of the general avian breeding season (February 15 – September 1), to the maximum extent possible.
26. **Desert Tortoise Observations**. If a desert tortoise is observed during Project activities all work within 300 feet of the desert tortoise shall immediately stop and the observation shall be immediately reported to the Authorized/Designated Biologist(s). Project activities shall not resume until the Authorized/Designated Biologist(s) has verified the desert tortoise has left the Project Site OR an Authorized/Designated Biologist(s) approved under the General Measures of the ITP shall relocate the desert tortoise as described in the ITP and the USFWS Desert Tortoise Field Manual 2009, The Designated Representative shall immediately, notify CEC of any desert tortoise observed within the Project Site.
    a. Notification to CEC and CDFW's Regional Representative shall be by e-mail. Within 24 hours after CEC and CDFW receives the initial notification the Applicant shall follow up with a written report. Notification and the written report shall include the date, location, and circumstances of the observation, the name of the Authorized/Designated Biologist(s) that relocated the individual, pictures, map, and the location (including GPS coordinates) where the individual was moved.
27. **Desert Tortoise Re-hydration.** If a desert tortoise voids its bladder as a result of being handled, the Authorized/Designated Biologist(s) shall rehydrate the individual(s).
    The Authorized/Designated Biologist(s) shall rehydrate the desert tortoise at the location where the individual(s) was or were captured, or the location where the individual(s) is or will be relocated. The Authorized/Designated Biologist(s) shall rehydrate the desert tortoise by placing it in a tub with a clean plastic disposable liner. The Authorized/Designated Biologist(s) shall add water to the lined tub while ensuring that the water level is not higher than the lower jaw of the desert tortoise. The Authorized/Designated Biologist(s) shall rehydrate each desert tortoise individually for a minimum of 10 to 20 minutes. The Authorized/Designated Biologist(s) shall place the lined tub in a quiet protected area during rehydration. After each tortoise is rehydrated, the water shall be emptied, and a new plastic disposable liner placed in the tub.
28. **Desert Tortoise Injury**. If a desert tortoise is injured as a result of Project activities, the Authorized/Designated Biologist(s) shall immediately take it to a CEC approved wildlife rehabilitation or veterinary facility ("facilities"). Approved facilities can be found at http://www.dfg.ca.gov/wildlife/WIL/rehab/facilities.html. Applicant shall identify the facility prior to the start of Project activities. Applicant shall bear any costs associated with the care or treatment of such injured desert tortoise.

8.2 Compensatory Mitigation

8.2.1 *Habitat Management Land Acquisition*

To satisfy the full mitigation requirement of CFGC § 2081(b), the Applicant will provide compensatory mitigation at a proposed ratio of 1:1, or other CDFW-determined ratio, for impacts to approximately

2,670.4 acres. One-third of the compensatory mitigation ratio will be satisfied by completing all mitigation requirements relating to desert tortoise and burrowing owl imposed by the BLM in the Project ROD. The remaining two-thirds of the compensatory mitigation ratio will be satisfied through acquisition, permanent protection, and perpetual management of compensatory habitat.

Based on the presence of suitable habitat for desert tortoise in the Project site, the extent to which the proposed Project will impact the habitat, and the likely significant amount of acreage required to provide for adequate compensation, permanent protection and perpetual management of compensatory habitat is necessary and required pursuant to CESA. Permanent protection and perpetual management of compensatory habitat will fully mitigate Project-related impacts of the taking on desert tortoise that will result with implementation of the proposed Project activities.

To meet this requirement, the Applicant will either purchase acres from a CEC-approved mitigation or conservation bank or will provide for both the permanent protection and management of CEC-approved Habitat Management lands. Permanent protection and funding for perpetual management of compensatory habitat will be complete before Project initiation or within 18 months of the effective date of the ITP.

9 COMPLIANCE MONITORING AND FUNDING ASSURANCES – CCR § 783.2(A)(9) AND 783.2(A)(10)

Applicant will fund and ensure that the measures stated in this application will be implemented to avoid, minimize, and compensate for project impacts. Applicant will fully fund the costs associated with the ITP application and the implementation of avoidance and minimization measures through its capital and operations and maintenance budgets.

As part of the compliance monitoring for the ITP, the permittee will retain a qualified biologist to implement the avoidance and minimization measures and monitor the project activities. To ensure that the compensatory mitigation requirements are accurately determined, the monitoring biologist will utilize Global Positioning System (GPS) equipment with submeter accuracy to map and calculate the final permanent and temporary impact areas. Within 60 days following the completion of the project construction, a brief compliance report will be provided to the designated CDFW contact with the objective of outlining compliance with the project's ITP. If 60 days is not enough time to complete the compliance report, a formal extension will be requested. The compliance report will include the following, as applicable:

1. Final acreage of direct and indirect overall habitat disturbance.
2. Pre- and post-project photographs of impacted areas.
3. Aerial maps (e.g., KMZ/KML, shapefile) displaying the locations temporary and permanent habitat disturbance and restoration treatments.
4. All observations of state-listed species, including GPS coordinates, shapefiles, and/or mapped locations, and the approximate time and date of observation(s).
5. Any burrow collapse or destruction, den excavation or plugging, discovery within a steep-walled hole or trench, and take that occurred, in compliance with the CESA, and ITP.
6. A description of restoration treatments or adaptive management conducted or planned to facilitate recolonization by vegetation and wildlife.
7. A brief description of all actions taken to comply with the provisions of the ITP.

10 COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT – CCR § 783.3(B)

The CEC is the CEQA lead agency for the proposed Project and will coordinate with CDFW to initiate environmental review upon receiving the ITP application.

11 CERTIFICATION – CCR § 783.2

I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.

_____ _____

Dustin Thaler, Soda Mountain Solar, LLC Date

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