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**Via email only**

July 10, 2024

Attn: Docket No FWS–R8– ES–2023–0189

Jeremy Bisson

U.S. Fish and Wildlife Service

MS: PRB/3W

5275 Leesburg Pike

Falls Church, VA 22041–3803.

RE: Desert Breeze Solar Project Habitat Conservation Plan and Draft Environmental Assessment

Dear Mr. Bisson,

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public's understanding of desert tortoise species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and northern Mexico, the Council routinely provides information and other forms of assistance to individuals, organizations, and regulatory agencies on matters potentially affecting desert tortoises within their geographic ranges.

The Desert Tortoise Preserve Committee (DTPC) is a non-profit organization formed in 1974 to promote the welfare of the desert tortoise in its native wild state. DTPC members share a deep concern for the continued preservation of the tortoise and its habitat in the southwestern deserts and are dedicated to the recovery and conservation of the desert tortoise and other rare and endangered species inhabiting the Mojave and western Sonoran deserts. The DTPC has a long track record of protecting desert tortoises and their habitat through land acquisition, preserve management, mitigation land banking, and educational outreach.

Both our physical and email addresses are provided above in our letterhead for your use when providing future correspondence to us. When given a choice, we prefer to receive emails for future correspondence, as mail delivered via the U.S. Postal Service may take several days to be delivered. Email is an “environmentally friendlier way” of receiving correspondence and documents rather than “snail mail.”

We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats occupied by the Mojave desert tortoise (*Gopherus agassizii*) (synonymous with Agassiz’s desert tortoise), our comments include recommendations intended to enhance protection of this species and its habitat during activities that may be authorized by the Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS), which we recommend be added to project terms and conditions in the authorizing document (e.g., management plan and decision document, lands and realty action, etc.) as appropriate. Please accept, carefully review, and include in the relevant project file our following comments and attachments for the proposed action.

The Mojave desert tortoise is among the top 50 species on the list of the world’s most endangered tortoises and freshwater turtles. The International Union for Conservation of Nature’s (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers the Mojave desert tortoise to be Critically Endangered (Berry et al. 2021), “... based on population reduction (decreasing density), habitat loss of over 80% over three generations (90 years), including past reductions and predicted future declines, as well as the effects of disease (upper respiratory tract disease/mycoplasmosis). *Gopherus agassizii* (sensu stricto) comprises tortoises in the most well-studied 30% of the larger range; this portion of the original range has seen the most human impacts and is where the largest past population losses have been documented. A recent rigorous rangewide population reassessment of *G. agassizii* (sensu stricto) has demonstrated continued adult population and density declines of about 90% over three generations (two in the past and one ongoing) in four of the five *G. agassizii* recovery units and inadequate recruitment with decreasing percentages of juveniles in all five recovery units.”

This status, in part, prompted the Council to join Defenders of Wildlife and DTPC (Defenders of Wildlife et al. 2020) to petition the California Fish and Game Commission in March 2020 to elevate the listing of the Mojave desert tortoise from Threatened to Endangered in California. In its status review, the California Department of Fish and Wildlife (CDFW) (2024a) stated, “At its public meeting on October 14, 2020, the Commission considered the petition, and based in part on the Department’s [CDFW] petition evaluation and recommendation, found sufficient information exists to indicate the petitioned action may be warranted and accepted the petition for consideration. The Commission’s decision initiated this status review to inform the Commission’s decision on whether the change in status is warranted.”

Importantly, in their April 2024 meeting, the California Fish and Game Commission voted unanimously to uplist the tortoise from threatened to endangered under the California Endangered Species Act based on the scientific data provided on the species' status, declining trend, numerous threats, and lack of effective mitigation (CDFW 2024b).

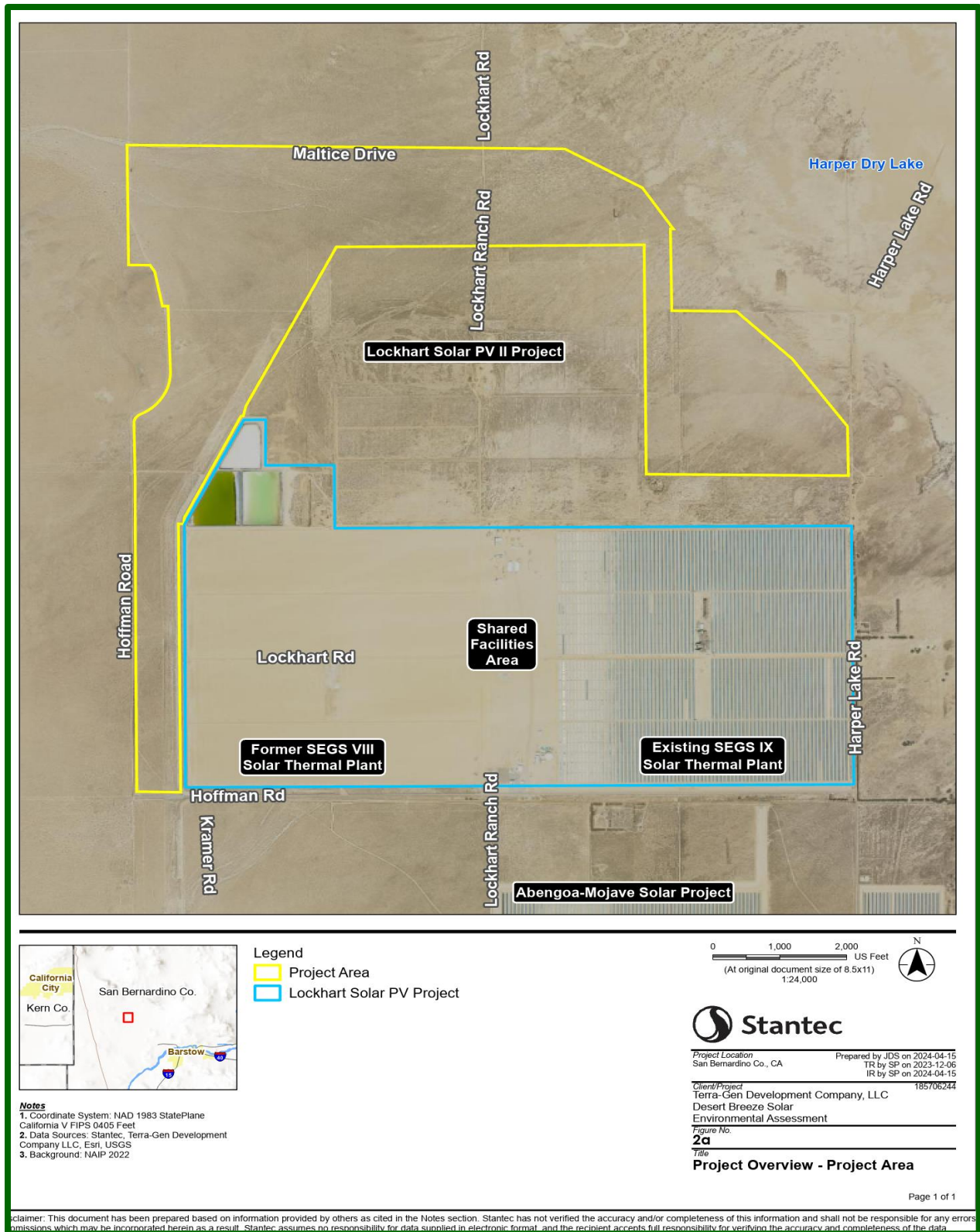
### **Description of the Proposed Solar Project and Mitigation Actions**

Desert Breeze, LLC, (Applicant) is proposing to construct, operate, maintain, and decommission a system of photovoltaic (PV) solar panels or modules, inverters, a battery energy storage system (BESS), an overhead and underground collection system, a telecommunication system (consisting of fiber optics, microwave, meteorological data collection systems, and supervisory control and data acquisition) near Harper Dry Lake (Figure 1). The BESS would be located in the adjacent 110-acre Shared Facilities Area (SFA) and other existing support facilities would be shared with the adjacent Lockhart Solar PV and Lockhart Solar PV II facilities (e.g., O&M building, warehouse, employee building, water and septic systems, collector substation, switchyard, and electrical transmission infrastructure). The energy generated from this facility would be transferred via a gen-tie line that would connect the power generated to the existing collector substation and switchyard located in the SFA. From there, an existing 13.8-mile gen-tie transmission line would be used to transmit the power generated from the proposed action to the existing Southern California Edison (SCE)-owned substation at Kramer Junction.

The SFA is not included in the project area because it is already secured from use by tortoises with a tortoise exclusion fence. The gen-tie line is also excluded because it is an existing facility. The footprint of the solar facility from construction activities to new areas would be about 663 acres of tortoise habitat.

To minimize and mitigate the impacts of the taking from the implementation of the solar project, Desert Breeze is proposing to construct and maintain tortoise exclusion fencing and gates around the solar facility, translocate tortoises from the solar site to approved recipient sites approved by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), and for five years monitor tortoises of sufficient size using transmitters. The Applicant has identified a 628.69-acre parcel along Fort Irwin Road, which would be preserved and managed in perpetuity to benefit the tortoise (Figure 2). To mitigate the remaining 33.45 acres developed during project construction, the Applicant would purchase credits at Black Mountain Conservation Bank (or other suitable local bank), or secure an additional USFWS- and CDFW-approved mitigation site in the region within the USFWS West Mojave Recovery Unit. These mitigation lands would be managed in perpetuity for the tortoise.

The proposed solar project is located in western San Bernardino County on the west side of Harper Dry Lake and approximately seven miles northwest of the intersection of Harper Lake Road and Mojave-Barstow Highway 58.



**Figure 1.** Location of the proposed Desert Breeze solar project and locations of other existing and approved solar facilities.

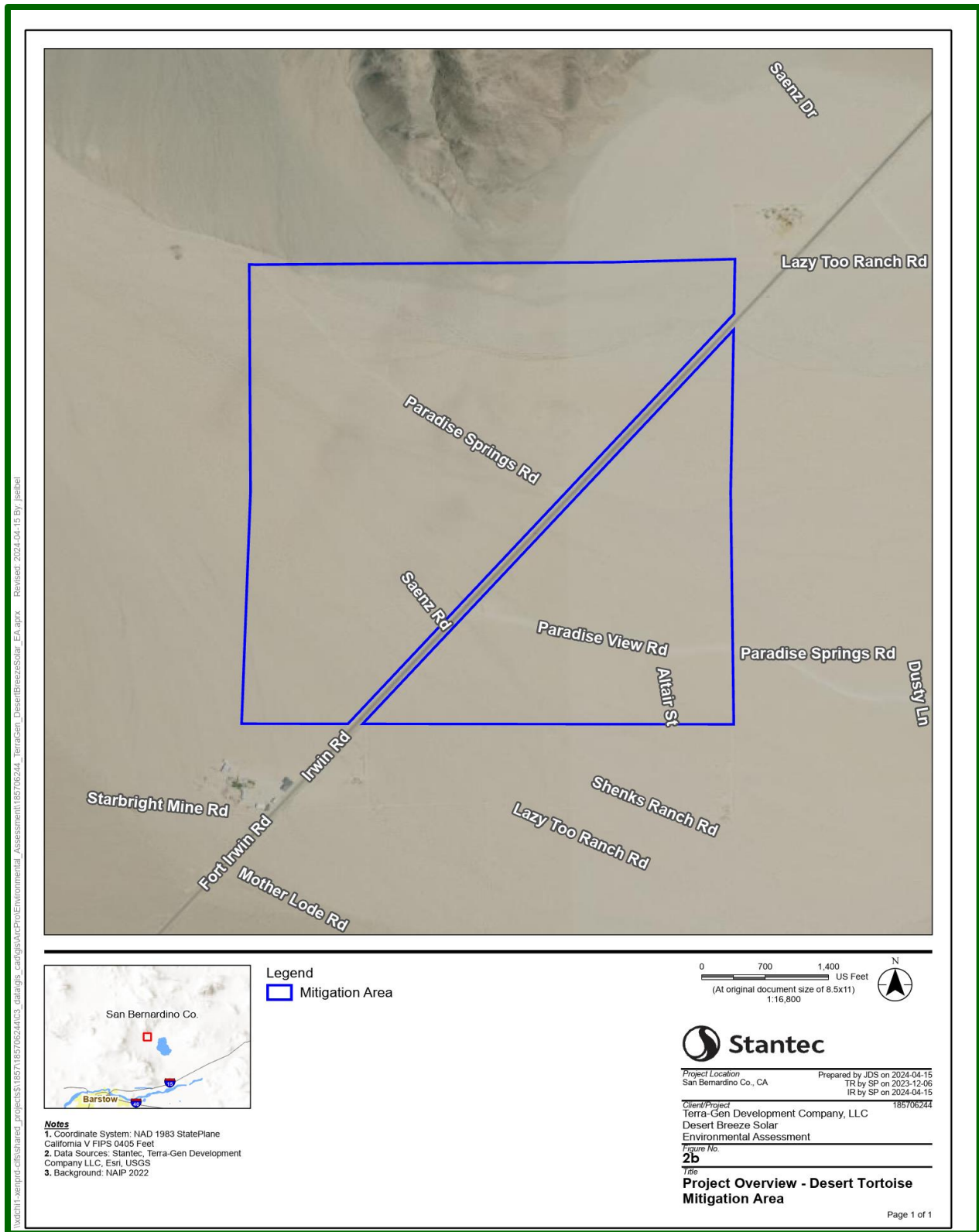
## **Comments on the Desert Breeze Solar Site Habitat Conservation Plan**

The Council and DTPC reviewed the Desert Breeze Solar Site Habitat Conservation Plan (HCP) with the following understanding. The HCP is the Applicant's document. When the incidental take permit (ITP) is issued by USFWS, the HCP specifies the actions the Applicant will (and will not) implement during the term of the ITP. The Applicant has requested a permit term of 39 years. Thus, the HCP is the equivalent of a contract between the Applicant and the USFWS. Given the importance of this document, it is crucial that the HCP be clear and thorough in its description of the actions that will and will not be implemented. Any ambiguity regarding the description of an action could mean that the Applicant would not be required to implement that action. Any omission means the Applicant is not required to implement that action. Consequently, most of the comments provided below are to clarify actions described in the HCP or to add actions not included but should be, based on information in the scientific literature, regulatory and guidance documents, and court cases.

Page 1.3: "The plan area also includes the following release areas and associated recipient sites: the Black Mountain Conservation Bank (which may also provide mitigation credits), the West Harper Conservation Bank (pending agency approval), and a Bureau of Land Management (BLM) parcel within close proximity to the solar array area (location to be determined)."

The Council and DTPC oppose the release of translocated tortoises on a BLM parcel until BLM can provide legal assurances that the parcel and surrounding lands will be managed as a reserve for the benefit of the tortoise. Translocation is mitigation action that should be planned and managed to be successful. This includes selecting recipient sites that provide favorable environmental conditions for the tortoise and minimal if any anthropogenic threats.

BLM's management of public lands in the western Mojave Desert for multiple use (while ignoring their legal mandate for sustained yield) has proven catastrophic for tortoise populations in the Western Mojave Recovery Unit. Between 2004 and 2014 the Superior-Cronese Tortoise Conservation Area (TCA), mostly BLM land, experienced a 61.5 % decline in population density and the adjacent Fremont-Kramer TCA experience a 50.6% decline (Allison and McLuckie 2018). Adult tortoise densities have fallen below the density identified by the USFWS for population viability during this time (USFWS 1994, Allison and McLuckie 2018) and the density of adult tortoises remained below the density needed for population viability from 2015 to 2021, the last time population monitoring was conducted. Consequently, relocating/translocating tortoises to land where the population data indicate that management for the tortoise is resulting in substantial ongoing population declines is not an appropriate or effective minimization/mitigation action for the tortoise. Until BLM can provide the legal and on-the-ground management assurances that it is managing translocated tortoises for their survival and persistence, please ensure that relocated/translocated tortoises are released on private lands that are managed for the conservation benefit of the tortoise.



**Figure 2.** Location of proposed mitigation lands to compensate for tortoise habitat lost from development of the Desert Breeze Solar Project, San Bernardino County, CA.

Page 2.2: “Overhead and underground collection systems would be built throughout the solar array area.” “Telecommunication equipment, including underground and overhead fiber optics, microwave, meteorological data collection systems, and supervisory control and data acquisition would be installed on the plan area...”

Please ensure that these systems and equipment are installed underground whenever possible. This underground installation removes the nesting and perching subsidies for common ravens to use overhead facilities for hunting tortoises.

Page 2.6: The HCP uses the term “noxious weed control” when describing general restoration requirement. Our understanding is that noxious weeds do not include non-native invasive plants. This is the only time the term “noxious weed” is used in the HCP. We suggest that this be replaced with the term non-native species.

Page 2.6: “Prior to ground-disturbing activities, perimeter exclusion fencing would be installed and maintained over the life of the proposed action. The perimeter fencing would consist of a new 7-foot-tall chain-link fence with desert tortoise exclusionary features at the northern, western, and eastern boundaries of the solar facility development footprint.”

Please explain why the tortoise exclusion fencing would not be lifted following the completion of the construction phase of the project to allow for tortoise to access the project site. Recently, this design has become a standard practice in the implementation of new solar projects. The Applicant’s reason(s) for this decision should be explained in the HCP. While we assume the shape of the project footprint (i.e., a long, thin linear arrangement of solar arrays wrapping around existing fenced solar projects) is not likely to block long distance tortoise movements or access to tortoise habitats because of the presence of existing adjacent fenced solar projects, the reasons for not allowing tortoises to use the project site should be explained in the HCP.

Page 2.7: “An AB [authorized biologist] or field contact representative (see Section 2.3.1) would perform fence boundary inspections on a monthly basis and immediately following significant rain events.”

Rain events may not occur on the project site but can occur up gradient and produce sufficient surface flow to reach the solar site and damage/destroy part of the tortoise exclusion fencing. We request that this action be revised to read “An AB or field contact representative (see Section 2.3.1) would perform fence boundary inspections on a monthly basis and immediately following significant rain events *on the project site or any nearby area upgradient to the project site.*” We are also not averse to including agency-approved biological monitors in the list of individuals who may perform fence checks, as there are typically fewer authorized biologists available.

Page 2.7: “USFWS Desert Tortoise Recovery Office has reviewed the potential parcels for translocation and identified the Black Mountain Conservation Bank and the surrounding geography as suitable and would like the translocation release areas to be focused in this area.” We fully support coordination with the Desert Tortoise Recovery Office for all project planning and development of mitigation, and requests that the Applicant coordinate all solar design features, minimization actions (e.g., translocation, etc.) and mitigation to ensure that the minimization and

mitigation actions are developed using the latest scientific research, to oversee their implementation to ensure their effectiveness, and to maintain consistency in their implementation throughout the range of the tortoise.

Page 2.8: “The Applicant is currently in discussions with BLM, USFWS, and CDFW about the feasibility of including an approximate 640-acre parcel (or similar local BLM parcel) located in proximity to the solar facility site as a potential desert tortoise release area.”

Please see our comment above for page 1.3 where we provide our objection to the release of translocated tortoises on a BLM parcel until appropriate legal assurances and management actions are implemented. We also feel it is very important to have a good understanding of the densities and distributions of host tortoises on the recipient site(s). Typically, scientific monitoring requires that both translocated and host tortoises are monitored, often by radiotelemetry, to judge the success of the translocation effort on both translocated and resident tortoises.

Page 2.8: “Additional details about the recipient site and translocation of desert tortoise would be provided by the Applicant in a DTTP [Desert Tortoise Translocation Plan] following CDFW and USFWS issuance of the ITPs and prior to construction. The DTTP would be developed in accordance with the Guidance Document (USFWS 2020a) [see the Proponent’s documents for cited references]. This plan would provide background and findings of any additional studies conducted for desert tortoise, assess the suitability of the proposed translocation recipient site, and provide a procedure for the translocation of desert tortoise for the proposed action.”

The DTTP should be included in the HCP as an appendix. It is needed by CDFW and USFWS prior to issuing the ITPs for numerous reasons including:

- to determine whether the DTTP has considered all contingencies that may occur during translocation and monitoring that will occur for several years;
- to ensure that appropriate methodologies for monitoring are implemented;
- to ensure that requirements for adaptive management are identified and the appropriate methodologies would be implemented; and,
- to identify the funding needs to fully implement the DTTP and determine whether adequate funding has been provided.

In addition, the DTTP is a form of mitigation under the National Environmental Policy Act (NEPA), and should be considered a mitigation plan. If not included in the HCP, it should be included as an appendix to the NEPA document so the public and the decisionmaker can review it and determine the effectiveness of the proposed mitigation. Preparers of mitigation plans are not always experts on the best available science for that specific subject/species or have not experienced the breadth of issues on that subject action that members of the public may have. When mitigation plans are included in the public review process, this provides the public with the opportunity to provide comments based on their diverse knowledge and experience regarding the adequacy and soundness of the proposed mitigation plans. This public review process increases the likelihood that the mitigation plans when reviewed and finalized will be effective when implemented.

Please revise the HCP to include the DTTP as part of the HCP.



Page 2.8: “The issuance criteria for an ITP according to Section 10(a)(1)(B) of the ESA includes a requirement to mitigate the effects of incidental take to the maximum extent practicable.”

We were unable to find in the HCP a discussion of how the proposed minimization and mitigation in the HCP mitigates “the impacts of the taking to the maximum extent practicable.” Please see our comments on page 6.1 for more information on how to revise the HCP to include this discussion.

Page 2.9: “the funding of the preservation of approximately 628.69 acres at the proposed mitigation site along Fort Irwin Road.”

We are not sure what is meant by the general wording “funding the preservation of approximately 628.699 acres.” Please add that the mitigation land is on private land (Paradise Springs Preserve by Wildlands according to an appendix to the HCP) and appears to occupy a section of land that is bordered on the north, east, and west sides by BLM land. Depending on the management of the BLM land, which is for multiple use, the BLM land may act as a population sink for tortoises that occur in the Paradise Springs Preserve. There would be few, if any, benefits derived from the management of a small area bisected by a major road where adjacent land management results in high death rates for tortoises.

Regardless of the ownership, what permanent legally binding assurances will be placed on this proposed mitigation site to guarantee that it will be managed for the conservation and enhancement of the tortoise/tortoise habitat and contribute to the species recovery, and that safe effective connectivity between the land on the two sides of Fort Irwin Road will be constructed and maintained in perpetuity? Please add this information to this section of the HCP.

In addition, please explain why this location was selected as mitigation land when currently it has many ongoing threats to the tortoise. It is bisected by a busy highway and the numerous impacts of highway use on tortoises/tortoise habitat are well documented. They include direct mortality from vehicles and transport/spread of non-native invasive plants, increased occurrence of fires, changes to tortoise behavior near a roadway, and food subsidies for tortoise predators.

Direct mortality from vehicles on paved roads and highways can create population depression zones for tortoises up to 0.4 km from the roads themselves (von Seckendorff Hoff and Marlow 2002; Nafus et al. 2013; Peaden et al. 2015; Averill-Murray and Allison 2023).

Nonnative plant species cover and diversity are greater closer to roads (Boarman and Sazaki 2006). Non-native plants adversely affect the quality and quantity of native forage plant species and the ability of tortoises to acquire important nutrients (Nagy et al. 1998; Oftedal 2002; Hazard et al. 2010, Drake 2016; Averill-Murray and Allison 2023). Is there adequate native herbaceous vegetation that is accessible to all age classes of tortoises using the mitigation site to meet their nutritional needs for survival, growth, and reproduction and adequate native shrubs for cover from temperature extremes and predators?

Many non-native plants are fire-adapted and contribute to increases in unnatural fire regimes, including extent, intensity, and frequency (Brown and Minnich 1986; Brooks and Esque 2002; Brooks et al. 2004). Direct mortality of desert tortoises increases with more frequent or widespread fires (Esque et al. 2003).

Many fires are started along highways, because they provide ignition sources. In contrast, areas that are distant from roads have significantly less human-ignited fires (Morrison 2007). Morrison (2007) examined the spatial relationship of roads to wildfires and whether roads enable wildfire ignitions. He found that 88% of all wildfires nationwide are caused by humans. Of these human-caused wildfires, 95% occurred within ½ mile of a road. Human-caused wildfires occur much more commonly next to roads than would be predicted by random occurrence across the landscape. Road access is a significant contributing factor in the probability of occurrence of wildfires. These results were statistically significant.

Brooks and Matchett (2006) mapped the ignition points for fires in the Mojave Desert between 1980 and 2004. They distinguished between human-caused and lightning fires. They reported that most ignition points of human-caused fires occurred along major roadways. For example, between July 1 and 2, 2024, two vehicles travelling on separate roads caught fire and started two wildfires in southern California. Roads provide other ignition sources such as cigarettes and other burning objects tossed from a vehicle. Will actions be implemented to curtail human ignition sources of fires at/near the mitigation site and to ensure that fuel from non-native annual plants is not present on the mitigation site?

Vehicle use on roads affects tortoise behavior and physiology. Harju et al. (2024) reported that when females were nearer to a highway, they were more likely to switch to and stay within a more energy demanding movement state. Further, when in this state, they moved even greater distances than when in the traveling state and far from the highway.

Harju et al. (2024) reported that vehicle use on highways causes female tortoises near the highway to expend considerably more energy with consequent water loss than they otherwise would (i.e., by pushing them into the energy-demanding movement state). This is likely detrimental to female tortoise survival near the highway, as increased movements drive female tortoises into water-limited conditions known to dramatically reduce survival, and because increased activity aboveground increases predation risk (Longshore et al. 2003, Lovich et al. 2023). This impact could also provide a partial explanation for previously noted road effect zones for the Mojave desert tortoise, whereby reduced density and lack of mature adults is not necessarily solely a function of historic direct mortality (Nafus et al. 2013).

Harju et al. (2024) found exclusionary fencing can reduce direct mortality of tortoises on roads, but indirect negative road impacts remain. Other research that tracked free-moving Mojave desert tortoise behavior of avoidance of roads or altered movement near roads (Hromada et al. 2020; Hromada et al. 2023; Peaden et al. 2017). Harju et al. (2024) reported that “the negative impact of the highway on female movement can reduce connectivity by expanding the road effect beyond the fence, depressing local populations and thus functioning as a wider fragmentation barrier.”

Road-related threats contributed ~22% of the total impacts to the Mojave desert tortoise in an aspatial conceptual model of risk to the species, not including effects of population fragmentation (Darst et al. 2013; Averill-Murray and Allison 2023).

Will the existing fence along Fort Irwin Road be monitored and maintained by the Proponent to prevent tortoises from entering the Road and will this fencing be maintained in perpetuity? Will one of more crossing structures be installed and maintained that are appropriate for use by tortoises so tortoises will have access to the full 628.69 acres of acquired tortoise habitat?

Will predators of the tortoise be managed to reduce their numbers from the subsidies provided from road kill on Fort Irwin Road, sewage ponds and the landfill at Fort Irwin, and nearby human populations at Fort Irwin that generate garbage? Esque et al. (2010) reported that the pattern of coyote kills in the Fort Irwin tortoise translocation study was strongly associated with the size of nearby human populations. Boarman et al. (2006) reported large numbers of ravens at Fort Irwin's landfill. Many ravens apparently left Fort Irwin cantonment area during the day, resulting in low numbers at the landfill in the morning. These regular movements from Fort Irwin indicated an important connection between the base and the Barstow area. Ravens took frequent advantage of resources in both areas. Fort Irwin Road connects Fort Irwin to the Barstow area.

Urbanized areas and the resources provided by humans can elevate predator populations through subsidies of food (e.g., garbage, water, etc.). Subsidized predators may persist at artificially elevated densities beyond what a natural prey base can support, and can deplete wildlife populations in these areas (Esque et al. 2010). This information should be considered when evaluating whether to select tortoise habitat as compensation that is located along Fort Irwin Road and between Fort Irwin and Barstow.

Because of these numerous serious impacts to the tortoise/tortoise habitat at this proposed mitigation site, we request that the HCP explain whether the funding will be adequate (1) to successfully offset these and other impacts to the tortoise, and (2) to contribute to tortoise conservation, enhancement, and recovery at this proposed mitigation site or the site that is finally selected and in perpetuity. The HCP should demonstrate how the funding provided for this mitigation site or any other mitigation site would accomplish these goals.

Until these and other questions are answered in the HCP and Draft EA, this parcel does not appear to mitigate the impacts of the taking to the maximum extent practicable. It appears to possess numerous impacts to tortoise/tortoise habitat because of its location and occurrence of a major road through the middle of the mitigation site and proximity to human development that subsidizes predators of the tortoise. Consequently, for the reasons stated above, we disagree with the statement in the HCP that “[t]his proposed mitigation strategy would offset the loss of suitable habitat and potential take of desert tortoise associated with the proposed action.” In addition, the mitigation is not required for the potential take of the tortoise. The mitigation is required for the “impacts of the taking.” Please correct this statement in the HCP and revise the discussion to explain how the proposed mitigation would offset the impacts of the taking of the tortoise.

Based on these numerous existing threats to the Fort Irwin Road mitigation site, we strongly request that other sites be identified, thoroughly analyzed for their existing direct and indirect threats to the tortoise, and be compared to the Fort Irwin Road site. The site with the lowest level of threats should be selected for the mitigation site to compensate for the tortoise habitat lost from implementation of the solar project.

In addition, we did not find a discussion/analysis by the Applicant that the “maximum extent practicable” requirement has been met by this proposed mitigation. Please add this information to the HCP.

Page 2.9: “This mitigation would be a covered activity under an ITP and would include fencing installation and vertical mulching activities.” Please explain the purpose of implementing vertical mulching. If it is to discourage off-highway vehicle (OHV) use, it may or may not be effective depending on whether there is a downward slope from the road and a driver can see the remaining road/trail in the distance. If it is to aid in revegetating the mitigation site with native vegetation, it would likely be ineffective because of the compaction of soils that inhibits successful seed germination and plant establishment, damage to soil crusts that are needed for native plant growth and survival and to discourage the growth of non-native annual plant species, and the very long replacement times for Mojave desert vegetation (Abella 2010) in areas with surface disturbance unless effective measures are implemented. Please add this information to the document that describes the purpose and effectiveness of vertical mulching.

Please add information on whether the Applicant is required to maintain the fence and for how long. In addition, this section should describe the type(s) of fencing that would be installed (e.g., fencing to exclude vehicles, fencing to keep tortoises from access the road, or both types of fencing).

Page 2.10: “Unless otherwise approved by the USFWS, based on the small numbers of tortoises to be translocated, the recipient population would be on the same side of the southern/western boundary of the **Eastern** Mojave Recovery Unit as the source population [emphasis added].”

The proposed project is located in the **Western** Mojave Recovery Unit for the tortoise. Please correct this sentence.

Page 2.14: “Translocations would occur during the active seasons, spring (approximately April 1 through May 31) and fall (approximately September 1 through October 31), subject to temperature constraints.”

Please see Mack and Berry (2023)<sup>1</sup>. In this paper, the authors reported that numbers of repeatedly used locations (burrows), an indication of settling by translocated tortoises, were a driver of survival of translocated tortoises throughout the study. They discuss that a release in the fall prior to dormancy could force construction of a burrow or shelter within 2–3 weeks and force potential settlement before onset of freezing temperatures. In addition, a hard release versus a soft release may affect survival. These factors that may affect survival of translocated tortoises have been presented in other papers (Field et al. 2003; Pille et al. 2018).

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<sup>1</sup> [https://www.dropbox.com/scl/fi/9gc8lcb01zned8fvoueur/Mack-and-Berry\\_-\\_Drivers-of-survival-of-translocated-tortoises-2023.pdf?rlkey=hfszsb7bvdfpsh2z4u9e888qw&dl=0](https://www.dropbox.com/scl/fi/9gc8lcb01zned8fvoueur/Mack-and-Berry_-_Drivers-of-survival-of-translocated-tortoises-2023.pdf?rlkey=hfszsb7bvdfpsh2z4u9e888qw&dl=0)

In addition, Mack and Berry (2023) present the following recommendations that should be included in the design and implementation of the translocation:

- In-depth evaluations of home sites and release sites for cover and diversity of native perennial shrubs, trees, bunch grasses, and biomass of annual plants by species;
- comparison of proportion of annual biomass in non-native plant species;
- knowledge of the presence, distribution, and abundance of potential predators at release sites including multi-year field evaluations of presence, abundance, and distribution of subsidized and other predators;
- rejecting release sites highly fragmented by dirt and paved roads, routes, trails, campsites, and shooting areas; and
- protecting release sites from vehicles, livestock, feral ungulates, and other related human activities, potentially by fencing or designating the site as a reserve.

The Applicant should modify the translocation plan to collect and evaluate this information and design a translocation plan using this information so it will maximize tortoise survival based on the best available information.

Page 2.14: “If weather records indicate that desert tortoises have not likely had a chance to drink water within the previous or current active seasons, or clinical signs indicate that a tortoise may be dehydrated, the animal would be hydrated within 12 hours of release. Any tortoise that voids its bladder would be hydrated according to existing protocols (USFWS 2013; USFWS 2019).”

Because the purpose of translocating tortoises is to ensure their long-term survival, we recommend that *all* tortoises should be hydrated within 12 hours of release. Please see Field et al. (2007) for the importance of hydrating tortoises prior to their release. Also, the USFWS has revised its hydration protocols in 2022<sup>2</sup>.

Page 2.14: “Predator sign would be considered for each release site and may include active badger (*Taxidea taxus*), desert kit fox (*Vulpes macrotis arsipus*), or coyote (*Canis latrans*) dens; the presence of common ravens (*Corvus corax*); the presence of feral dogs (*Canis lupus ssp. familiaris*); or other predators of desert tortoise.”

Please see our comments above on page 12 and ensure this information is included when analyzing and selecting release sites.

Page 2.14: “Translocations would occur during the active seasons, spring (approximately April 1 through May 31) and fall (approximately September 1 through October 31), subject to temperature constraints.”

Please see our comments above on page 12 and ensure this information is included when analyzing and selecting release sites.

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<sup>2</sup> [https://www.fws.gov/sites/default/files/documents/Hydration%20protocols\\_2022.pdf](https://www.fws.gov/sites/default/files/documents/Hydration%20protocols_2022.pdf)

Page 2.15: “The Applicant would work with a qualified desert tortoise biologist to develop and implement a project-specific translocation plan.”

This is the first time the term “qualified biologist” is used. Earlier in the document AB (authorized biologist) is used. Please define these two terms and explain how they differ. Additionally, if “biological monitors” are to be employed, which is suggested by the draft environmental assessment, please explain their and various other biologist’s differing duties.

Page 2.15: “Anticipated monitoring components include project management; field labor for surveys, health assessments, and environmental sampling (e.g., annual and perennial vegetation, temperature, rainfall), including supervisory and technical personnel; travel; and supplies, including transmitters to relocate females for X-radiography.”

We recommend that environmental sampling include the biomass of non-native annual plant species as stated in our earlier comments and recommended by Mack and Berry (2023).

Please see our comments above for page 2.14: “Translocations would occur ...” The presence of tortoise predators at a release site should be more than merely considered.

Page 2.15: “The translocation release areas would be monitored following translocation activities using a variety of methods to identify and document the health, presence, and activity levels of desert tortoises in the translocation release areas.”

Please clarify the length of time that this monitoring would occur.

Page 2.15: “Adaptive management actions would be proposed by the lead AB in response to specific management issues that arise which may pose a threat to translocated or recipient tortoises during the translocation and monitoring phases.”

In this statement and this section of the HCP, the Applicant does not commit to implementing these adaptive management actions. Please modify this paragraph so the Applicant is committed to these actions.

Page 2.17: “The AB will oversee clearance surveys, the capture and handling for long-distance translocation of desert tortoises, and any other activities beyond moving tortoises a short distance out of harm’s way.”

Please modify this sentence to say, “The AB will *be present on site and directly* oversee clearance surveys, the capture and handling for long-distance translocation of desert tortoises, and any other activities beyond moving tortoises a short distance out of harm’s way.”

Page 2.17 – 2.18: This section describes worker education. Because the construction phase may continue for more than one year, we recommend that training be conducted annually so employees/contractors are initially educated and later reminded of regulatory constraints, biological constraints, and minimization measures that must be followed.

Page 2.18: “The AB, or the desert tortoise monitor with approval of the AB, will conduct clearance surveys for desert tortoise within the area disturbed by the exclusion fence no more than 30 days prior to installation of the fencing. Following the exclusion fence installation, the AB, or the desert tortoise monitor with approval of the AB, will conduct clearance surveys for desert tortoise within the fenced area(s) of the solar facility.”

Usually during fence installation, an AB is present to ensure that tortoises are not injured or killed. In 1 to 30 days following completion of the clearance survey for the exclusion fencing, a tortoise can move to the location where the fence is to be constructed. In addition, conducting a clearance survey indicates that any tortoises found would be moved, but we found no information on where they would be moved to (e.g., a short distance, release site). Please add this information to this document.

Page 2.19: “At the end of each construction workday outside of the exclusion fencing, the AB or desert tortoise monitor will see that all potential wildlife pitfalls resulting from construction activities (e.g., trenches, bores, and other excavations) are backfilled.”

Please modify this sentence to say, “*The AB or desert tortoise monitor will inspect all potential wildlife pitfalls throughout the day and remove any wildlife in them.* At the end of each construction workday outside of the exclusion fencing, the AB or desert tortoise monitor will see that all potential wildlife pitfalls resulting from construction activities (e.g., trenches, bores, and other excavations) *are inspected, and if void of wildlife, are backfilled.*”

Page 2.19: “The field contact representative(s) will be responsible for inspecting the perimeter exclusion fencing around the solar facility at least bimonthly to check for damage or breaches.”

Please add to this requirement the following: “The field contact representative(s) will be responsible for inspecting the perimeter exclusion fencing around the solar facility at least bimonthly to check for damage or breaches *and immediately following a precipitation event on the project site or upgradient from the project site.*”

We are taking this opportunity with this issue to express the importance of involving CDFW in all decisions affecting take of tortoises. It is commendable that the Applicant is talking to USFWS biologists at the Desert Tortoise Recovery Office but it is equally important that CDFW biologists be involved in these discussions and any decisions. For example, it is CDFW’s current management that exclusionary fences are checked on a daily basis. This frequency is necessary to ensure that tortoises have not been entrapped within the fence (particularly hatchling and juvenile tortoises) and to avoid heat stress of tortoises walking alongside the outside of the fences trying to return to the inside, particularly where their burrow(s) have been excavated.

Page 2.19: “The field contact representative will be trained by an AB to handle desert tortoises ...” and “A field contact representative would only be allowed to move a tortoise a maximum of 200 feet to adjacent habitat outside of the facility exclusion fencing.”

We found no information in this section that requires that the field contact representative receive training on the appropriate environmental parameters that must be present or where to release a tortoise (e.g., ambient temperature near the soil surface, time of day, presence of cover, etc.). The prescription also seems to confuse the roles of the field contact representative, who functions as a liaison between the project Proponent and agencies, versus authorized biologists, who function to handle tortoises and oversee implementation of protective measures. It is possible for one person to fulfill both roles, but it is not typical given the amount of training and experience needed to be an authorized biologist. Please clarify these roles and provide the additional information in the document.

Page 2.20: “No later than two days following the above-required notification of an injured or killed desert tortoise, USFWS will be provided a written report via email from the AB or field contact representative describing all reported incidents of an injured or killed desert tortoise, identifying who was notified, and explaining when the incident occurred.”

Please add to this requirement why the mortality or injury occurred and what actions have been implemented to ensure it does not happen again. This is another case where CDFW will also need to be contacted, which will undoubtedly be a component of their Section 2081 ITP.

Page 2.20: “The field contact representative may also be authorized by USFWS to relocate or translocate the animal a short distance to be out of harm’s way, in accordance with the DTTP, with prior approval by USFWS.”

Please add information about the appropriate environmental parameters that must be present before releasing a tortoise including ambient temperature, time of day, presence of cover, etc.

Page 2.21: “GM-3: Invasive and Non-Native Species Control. The introduction and spread of exotic plant species will be controlled through the implementation of weed control activities. The introduction of exotic plant species will be avoided and controlled where feasible and may be achieved through physical or chemical treatment within the solar facility boundaries, limiting the size of any vegetation and/or ground disturbance to a minimum, and limiting ingress or egress to defined routes. To prevent exotic plants from entering the plan area via vehicular sources, measures such as implementing Track Clean or other methods of vehicle cleaning for vehicles coming and going from the plan area during construction will be performed. Earth-moving equipment will be cleaned and inspected prior to transport to the plan area.”

We found no information in this section on how the Applicant would prevent the spread of exotic plant species or minimize their density and cover. In addition, the wording in the General Minimization Measure is ambiguous. Wording such as “where feasible” and “may be achieved” allows the Applicant to do nothing to control the introduction, spread, and density of exotic plant species and the production of their seeds/annual replenishment of seed banks that are introduced to adjacent tortoise habitat including critical habitat. We strongly suggest that the HCP be revised to require the implementation of effective management actions to substantially reduce the density and cover of exotic species in the project footprint and this be done annually and prior to the production of seeds by these exotic species. This information should be described in a management plan specific to controlling non-native and invasive species.



Page 2.22: “Workers are prohibited from bringing pets and firearms to the plan area during project construction and operation.” Please add “decommissioning” to this sentence.

Page 3.1, Alternatives Considered: “One alternative is considered in this HCP: 1) A no-action alternative.”

Section 5.6 of the HCP Handbook (USFWS and NMFS 2016) states, “Section 10 of the ESA [Endangered Species Act] and its regulations require that an HCP describes actions the applicant considered as alternatives to the take that would result from the proposed action and the reasons why they are not using those alternatives. When describing alternative actions in the HCP, the applicant should focus on significant differences in project design that would avoid or reduce the take. These alternatives should be meaningful and not merely involve small changes in project implementation or minimization and mitigation measures that do not avoid or reduce take.”

The Applicant may have implemented this process of considering other action alternatives. However, the HCP does not clearly describe this process including other sites that were considered. Please revise the HCP to include this information and to comply with the HCP Handbook.

Pages 5.1 – 5.4, Construction, Operation and Maintenance, and Decommissioning of the Desert Breeze Solar Energy Project: This section of the HCP provides a list of the effects to the tortoise that are likely to result from implementation of the construction, operation and maintenance, and decommissioning phases of the proposed project. However, we found no citations from the scientific literature to support these effects or their degree of impacts. In addition, the Applicant claims that many of the effects would be substantially minimized or dismissed with no supporting documentation from the scientific literature. Please revise the HCP to support these claims made in the HCP.

Pages 5.4 – 5.5, Capture and Translocation/Relocation of Desert Tortoises: Please see our comments above under Page 2.14: “Translocations would occur during the active seasons, spring (approximately April 1 through May 31) and fall (approximately September 1 through October 31), subject to temperature constraints,” and “If weather records indicate that desert tortoises have not likely had a chance to drink water within the previous or current active seasons, or clinical signs indicate that a tortoise may be dehydrated, the animal would be hydrated within 12 hours of release. Any tortoise that voids its bladder would be hydrated according to existing protocols (USFWS 2013; USFWS 2019).”

The HCP provides a simplistic picture of the results of translocation that does not fully reflect the analyses of tortoise translocation outcomes. We strongly recommend that the HCP be revised to incorporate the findings and recommendations of Field et al. (2007); Esque et al. (2010); Dickson et al. (2019); Mack and Berry (2023).

Page 5.6, Management of Mitigation Lands: “Activities associated with the management of the mitigation area would be conducted to benefit desert tortoise and their habitat and would be approved by USFWS and CDFW prior to implementation. These activities would be funded by the Applicant and may include but are not limited to the following: installation of fencing and vehicle barriers to prevent encroachment into sensitive areas (e.g., streams, washes, vertical mulching), and other activities determined by USFWS and CDFW that would benefit desert tortoise. Activities associated with the management of the mitigation area would overall benefit desert tortoises and their habitat in the long term.”

This is the only information provided on the management of the mitigation lands. While the wording may appear to be clear with respect to the intent of the management of the mitigation lands, we have learned that different entities have different definitions of activities that would be allowed on lands managed to benefit the tortoise. For example, BLM allows the issuance of rights-of-way (ROWs) for utilities and OHV activities on designated unpaved roads and trails even though these activities cause ongoing surface disturbance and associated impacts to tortoises and tortoise habitats. Consequently, we recommend that this section of the HCP be expanded to provide examples of activities that would be allowed and those that would not be allowed and why. Activities that would not be allowed should include activities that result in surface disturbance (e.g., OHV activities, ROWs, etc.). Please add this information to the HCP.

Page 5.6: “Take is likely to occur in the forms of killing, wounding, and capturing desert tortoises.”

We agree with this statement but suggest that “harm” be added to the forms of take. According to the federal courts (*Babbitt v Sweet Home Chapter*), “harm” includes habitat modification and encompasses indirect as well as direct injuries. Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) strongly suggests that Congress understood Section 9 to prohibit indirect as well as deliberate takings (515 U. S. 687 (1995)). Mortality caused by predation from subsidies inadvertently provided by the implementation of the proposed project would be indirect taking. Please add “harm” as a form of taking to the HCP and revise the information on types and amounts of request take in the section on Incidental Take.

Page 6.1, Biological Goals and Objectives: “Objective 3: Translocate desert tortoises removed from the solar array portions of the plan area to conserved lands in the Western Mojave Recovery Unit, specifically in the Superior-Cronese Critical Habitat Unit (CHU).”

Earlier in Section 2.1, the Applicant states, “The proposed translocation release areas may comprise a combination of sites, including mitigation banks and parcels in the region, with a priority given to the Superior-Cronese Desert Tortoise Critical Habitat and Fremont-Kramer Critical Habitat Units [CHU] within the greater Western Mojave Recovery Unit.” This statement appears to not comply with Objective 3. Please clarify the Biological Goals to prioritize consideration in the Superior-Cronese CHU but include the Fremont-Kramer CHU if that is what agency biologists think is best.

Page 6.1: “Goal 2: Mitigate, to the maximum extent practicable, the effects of the incidental take of desert tortoises during construction, O&M and decommissioning of the proposed action.”

In the HCP Handbook, the USFWS and NMFS define mitigation as “to offset impacts of taking on the species.” The Handbook uses “fully offset” to mean “completely mitigating any impacts expected to remain after avoidance and minimization measures are implemented. In other words, fully offset means the biological value that will be lost from covered activities will be fully replaced through implementation of conservation measures with equivalent biological value. Fully offset also means the mitigation is commensurate (equal) with the impacts of taking. The statutory standard of minimizing and mitigating the impacts of the take “to the maximum extent practicable” under ESA Section 10(a)(2)(B)(ii) will always be met if the HCP applicant demonstrates that the impacts of the taking will be fully offset by the measures incorporated into the plan. However, the statutory standard will also be met where the applicant demonstrates that while the HCP will not completely offset the impacts of the taking, the minimization and mitigation measures provided in the plan represent the most the applicant can practicably accomplish (USFWS and NMFS 2016).”

The Applicant should (1) demonstrate in the HCP what the remaining impacts are after avoidance and minimization measures are implemented, and (2) demonstrate that either the implementation of the proposed mitigation will fully offset the remaining direct, indirect, and cumulative impacts of the taking or represent the most the Applicant can practicably accomplish. Please include this information in the HCP.

Pages 6.1: “Objective 4: The Applicant will maintain mitigation lands in equal or better habitat quality than current conditions through future management activities.”

This objective to maintain habitat quality of mitigation lands does not mitigate the loss of more than 600 acres of tortoise habitat. There would be a net loss of the functions and values on the developed 677 acres of tortoise habitat. To mitigate this loss, the functions and values of the mitigation land must be improved for the tortoise by this amount. Consequently, we strongly recommend that Objective 4 be reworded to read, “The Applicant will manage the mitigation lands in perpetuity to improve the habitat quality of these lands, specifically the functions and values for the tortoise, and elimination of threats to the tortoise through ongoing management activities.” It is noteworthy that CDFW will require, at a minimum, two or three acres of compensation habitat for each acre that is lost. Again, if not already, CDFW needs to be contacted to see which of the many Applicant-proposed measures will need to be modified and strengthened.

Page 7.1, Effects Monitoring: “Effects monitoring would quantify the number of desert tortoises found during surveys and translocated, the number of individuals that were injured or died, and the amount of suitable habitat affected from the implementation of the covered activities.”

We believe this requirement would not result in monitoring the effects of the taking. Simply calculating the acreage destroyed by the proposed project results in the quantity of tortoise habitat destroyed, but it does not account for the quality or functions and values of the destroyed habitat. For example, the developed habitat could be a needed piece of habitat that provides connectivity between two tortoise populations to maintain genetic diversity in the species. The development of this habitat could severely impede or prevent this connectivity and exchange of genetic material and threaten the survival of one or both populations even though the number of acres is small.

We strongly request that the HCP be revised to analyze the functions and values of the habitat to be developed and add this analysis to this section of the HCP. This analysis would be used to help determine whether the Applicant has proposed actions that would mitigate impacts to the maximum extent practicable.

Page 7.1, Effectiveness Monitoring: This section of the HCP limits its discussion to minimizing impacts to the tortoise. It should include actions implemented to improve or enhance conditions for the tortoise and tortoise habitat, specifically during translocation, at the translocation site(s) and on the mitigation lands. Please see our comments on ages 5.4 – 5.5, Capture and Translocation/Relocation of Desert Tortoises; page 5.6, Management of Mitigation Lands; page 6.1, Goal 2; and page 6.1, Objective 4 for more information and conditions in which the Applicant implements enhancement actions. Please revise the HCP to include these and all other enhancement actions the Applicant would implement.

Page 7.2: “Effectiveness monitoring on the mitigation area would be limited to monitoring land management actions funded by the endowment provided by the Applicant for the proposed action and would be described in the long-term management plan that would be developed by the Applicant or its designated land manager and approved by the involved agencies (i.e., USFWS and CDFW). The management plan would address items such as the enhancement of disturbed habitat, removal of trash, and protection from unauthorized uses.”

The long-term management plan should be included as part of the HCP. This information is needed for several reasons including but not limited to determining whether the management plan would help mitigate impacts “to the maximum extent practicable,” and to determine whether the Applicant is providing adequate funding to implement the entire conservation program. Please include this long-term management plan in the revised HCP.

Page 7.2, Compliance Monitoring: “Compliance monitoring for the HCP would consist of monitoring the implementation of the minimization measures and compensatory mitigation actions.”

The HCP then discusses monitoring of the minimization measures, but we could find no discussion of how the implementation of the compensatory mitigation actions would be monitored. Please revise the HCP to include a description of this monitoring.

Page 7.3, Reporting: Section 10.4 of the HCP Handbook provides information on what information should be included in monitoring reports. This information includes:

- Summaries or a list of the covered activities implemented;
- quantify the impacts from covered activities;
- quantify and describe the extent of take for each covered species as a result of the covered activity;
- describe how the conservation commitments of the HCP were implemented and their results;
- describe the monitoring results and survey information;
- describe any circumstances that made adaptive management actions necessary and how they were implemented;
- describe any changed or unforeseen circumstances that occurred and explain how they were addressed;
- summarize funding expenditures, balance, and accrual;
- summarize any minor or major amendments;
- describe any non-compliance issues and how they were resolved;
- provide other information as required by the permit or HCP;
- describe the survey protocols being implemented;
- describe requirements for geospatial information; and
- identify techniques that will be used for data analysis

The HCP Handbook mentions that “all reporting requirements should be described in the HCP and the permit.” We recommend that the HCP be revised to describe all reporting requirements in the HCP including but not limited to the information listed above.

Page 7.6: “The land manager would manage and monitor mitigation lands to minimize the introduction and proliferation of non-native plant species which would minimize potential to fuel fires and optimize the potential for a natural recovery of the desert scrub community.”

In addition, we request that the land manager prohibit and prevent activities on mitigation lands that are known to introduce ignition sources for fires.

Page 7.7, Invasive and Non-Native Species: This section on Changed Circumstances only addresses the solar site. We strongly recommend that the management of the translocation sites and mitigation land sites be included in the reduction of invasive and non-native species. The funding for the reduction in these non-native species is crucial to the survival of the translocated tortoises and enhancement of the habitat quality, functions, and values of the mitigation site(s), as described earlier in this comment letter, and is necessary to mitigate to the maximum extent practicable requirement under the FESA. Please revise the HCP to add these mitigation locations in this section of the HCP.

Page 7.5 – 7.7: We recommend that identification of a new pathogen/pathogens be included in this section that may affect the tortoise or tortoise vegetation. There are several scientific papers on the increasing spread and mutation of pathogens, given the current changing environmental conditions including Williams et al. (2002) and Yon et al. (2019). Please add identification of new pathogens to the Changed Circumstances section of the HCP.

Page 7.9, Permit Renewal: If the Applicant decides to renew the ITP, we recommend adding to the listed actions that the Applicant would submit an application to request the renewal at least three years before the expiration date of the ITP. This should provide sufficient time to collect needed data, draft the necessary documents, and provide public comment. The 30 days in the USFWS regulations is unrealistic and carried over from regulations developed for renewal requests for recovery permits, also under section 10 of the FESA.

Pages 8.1 and 8.2, Funding: The HCP Handbook says that the “applicant should include in the HCP detailed estimates of the various categories of plan implementation, including mitigation and how each type will be implemented.” However, we found no information on costs and associated funding requirements for clearance surveys and translocation of tortoises from the project site; installing, monitoring, and promptly maintaining the tortoise exclusion fence at the project site; translocation costs, non-native plant species abatement costs; etc. or the implementation of the changed circumstances identified in the HCP. Please revise the HCP to list all potential actions identified in the HCP, their estimated duration of implementation and associated costs (likely to increase annually from inflation), the total cost for implementing the conservation program including changed circumstances, monitoring, and adaptive management. Once this information is provide, the Applicant would then state how this estimated cost would be paid for by the Applicant.

In addition, the applicant “must clearly demonstrate how they will fund the costs of the elements of plan implementation (USFWS and NMFS 2016). The property analysis record that the Applicant only promises to prepare should be included in the HCP (USFWS and NMFS 2016),

not described as occurring in the future. The HCP should include inflationary costs, specific remedies to deal with changed circumstances by including an estimate of their cost and a description of how they will be funded, and if mitigation is not going as planned, additional assurances may be needed to ensure the mitigation can be remedied (USFWS and NMFS 2016). This last requirement is especially important for projects such as the Desert Breeze Solar Project where construction of the project will be completed in about 18 months, but the minimization and mitigation actions are ongoing – some of them for the duration of the ITP, 39 years or longer.

Please revise the HCP to include this information and details for the different types of costs in the HCP, identify sources of funding, and provide assurances for the identified funding sources.

In summary, upon reviewing the HCP, we conclude that the HCP does not comply with the statutory requirements of the FESA and the HCP Handbook for the reasons provided above. Please revise the HCP to comply with these two documents.

**Comments on the Draft Environmental Assessment (EA) for the  
Proposed Issuance of an Incidental Take Permit for the Desert Tortoise  
for the Desert Breeze Solar Energy Project, San Bernadino County, California (EA)**

Page 7: “Several alternatives were considered but eliminated from further analysis in this EA. For this Project, two alternatives were evaluated:

1. The Proposed Action – issuance of an incidental take permit; and
2. The No Action Alternative – no issuance of an incidental take permit.”

Please revise the EA to show how the USFWS rigorously explored and objectively evaluated all reasonable alternatives including other locations for siting the solar project and other locations for mitigation sites. We presume that the project Proponent conducted a search of several locations for siting this solar project before selecting this location. If correct, this information and why the other alternative sites were not selected or carried forward for analysis should be discussed in the Final EA to comply with the Council on Environmental Quality’s (CEQ’s) regulations for implementing NEPA and court decisions.

Page 9: “... some of the mid-voltage collection runs and communication systems may be on overhead lines.”

We request that the use of overhead lines be eliminated or minimized as much as possible to eliminate or substantially reduce perching and nesting sites for common ravens, which is a predator of juvenile desert tortoises. Please see our comments for page 2.2 of the HCP, above.

Page10: “Prior to decommissioning the site, a final restoration plan would be developed and implemented to meet the County’s requirements applicable at that time.”

Added to “the County’ requirements” should be those of the USFWS and CDFW. The site is habitat for the tortoise and Mohave ground squirrel (*Xerospermophilus mohavensis*). Both species are listed under the California Endangered Species Act (CESA) and the USFWS has been petitioned to list the Mohave ground squirrel under the FESA. The site is adjacent to tortoise

critical habitat. Unless it is returned to native desert vegetation with a reduction in non-native invasive plant species, it will provide a perennial seed source of non-native invasives to tortoise critical habitat and outcompete native species that provided the required nutrition for the tortoise and ground squirrel to survive and persist. Please add these agencies to this sentence.

Page 10: “The Proponent’s HCP mitigation for the incidental take of desert tortoises would be achieved through the funding of the perpetual preservation of approximately 628.69 acres at the proposed mitigation site along Fort Irwin Road and managed by IZOTE Holdings, LLC. Preservation of the site will be funded through a long-term management endowment held by an accredited public, nonprofit land trust under section 501(c)(3).”

The information on the corporation that would manage the mitigation site does not agree with the information provided in the HCP. The HCP says the mitigation site would be managed by Wildlands. The EA says IZOTE Holdings will be the manager. Please clarify who will be managing the mitigation sites and ensure that the same information is provided in the HCP and EA.

If IZOTE Holdings is the manager, we have the following concerns. When we searched for IZOTE Holdings online, we discovered it has been in business for less than 3 years. We recommend that USFWS provide more information on this corporation in the EA, especially with respect to its financial status to manage lands in perpetuity and its expertise and experience in successfully managing habitats in the Mojave Desert.

Page 10: “This mitigation would be a covered activity under an incidental take permit (ITP) and would include fencing installation and site restoration activities, such as vertical mulching and invasive species removal.”

Please see our comments on page 2.9: “the funding of the preservation of approximately 628.69 acres at the proposed mitigation site along Fort Irwin Road” of the HCP with respect to the types and locations of fencing and the commitment to maintaining the fencing, the purpose and effectiveness of vertical mulching, whether invasive species removal and establishing native species using effective methods will be required, and the need to provide connectivity across Fort Irwin Road so that tortoises have access to the 628.69 acres at the proposed mitigation site that is bisected by the road. Please revise the EA and add this information.

Page 12: “All potential pitfalls and other enclosures that may trap desert tortoise will be inspected periodically throughout the day, at the end of each workday, and at the beginning of each day by the AB or desert tortoise monitor. Should a desert tortoise become trapped, the AB, or desert tortoise monitor with AB approval, will relocate the individual in accordance with the DTTP to be prepared by the Proponent prior to construction.”

This information is not the same as in the HCP. Please ensure that the information on the frequency of inspection “periodically throughout the day” and “at the beginning of each day by the AB or desert tortoise monitor” is added to the HCP so that the two documents are consistent.

Page 13: “The field contact representative will be trained by an AB to handle desert tortoises if a desert tortoise is found within the fenced portions of the solar facility during the operations and maintenance or decommissioning phase of the proposed action.”

We reiterate our comments from page 2.19 of the HCP. We found no information in this section that required that the field contact representative receive training on the appropriate environmental parameters that must be present concerning where to release a tortoise, ambient temperature, time of day, presence of cover, etc. Please add this information to this document.

Page 13: “The field contact representative(s) will be responsible for inspecting the perimeter exclusion fencing around the solar facility at least bimonthly to check for damage or breaches.”

Please see our comment on page 2.19 of the HCP. Here we recommend the following addition to this requirement for inspecting the tortoise exclusion fencing. “The field contact representative(s) will be responsible for inspecting the perimeter exclusion fencing around the solar facility at least bimonthly to check for damage or breaches *and immediately following a precipitation event on the project site or upgradient from the project site.*” Also see our analogous comments to ensure CDFW approves of fence check intervals.

Page 13, Injured Desert Tortoise and Desert Tortoise Fatality: Please add to these requirements that the causes of mortality or injury be documented and the actions that will be implemented to ensure it does not happen again.

Page 14, GM-3: Invasive and Non-Native Species Control: We found no information in this section on how the Applicant would prevent the spread of exotic plant species or minimize their density and cover. In addition, the wording in the General Minimization Measure is ambiguous. Wording such as “where feasible” and “may be achieved” allows the Applicant to do little or nothing to control the introduction, spread, and density of exotic plant species and the production of their seeds/annual replenishment of seed banks that are introduced into adjacent tortoise habitat including critical habitat. We strongly suggest that the HCP and EA be revised to require the implementation of effective management actions to substantially reduce the density and cover of exotic species in the project footprint and that this be done annually and prior to the production of seeds by these exotic species. This information should be described in a management plan specific to controlling non-native and invasive species and included as an appendix to the EA so the public has the opportunity to review it.

Page 16: On page 7 of the EA, the USFWS says, “[s]everal alternatives were considered but eliminated from further analysis in this EA.” However, on page 16 of the EA the USFWS says, “[t]he Service identified the following alternative to the Proposed Action (i.e., the translocation plan for desert tortoises proposed in the HCP). However, following a preliminary examination, we eliminated this alternative from further consideration and did not analyze it in detail in this EA.” “Under this alternative, desert tortoises would not be translocated.”

Please clarify whether only one alternative was considered or several alternatives. If several, please add them to this section of the EA. We presume the USFWS suggested other locations for the solar project that were outside of tortoise habitat. Please include this consideration and why it was not brought forward for further analysis.



Page 22: “Construction of the solar array would result in the clearing of up to approximately 662.14 acres of vegetation.”

The HCP was unclear whether vegetation under the solar arrays would be temporarily brushed or permanently graded. Whereas the information says that the vegetation will be removed, the information appears to contradict wording on page 30 of the EA that says, “Once the tortoises have been translocated, mowing, micrograding, and the initial clearing and grubbing activities associated with the construction of on-site access roads within the solar array area...” Please clarify this information in the EA and HCP and ensure consistent wording.

We recommend that the vegetation be mowed before installing the solar arrays. Studies around the world have shown that desert ecosystems can act as important sinks to sequester carbon. For example, the California deserts account for nearly 10 percent of the state’s carbon sequestration below ground in soil and root systems, and above ground in biomass. Protecting this biome can contribute to securing carbon stores in the state (MDLT 2021).

The clearing of desert vegetation for the solar arrays would result in the release of carbon into the atmosphere that has been sequestered in the plants and roots thus contributing to the adverse effects of climate change. Mowing desert vegetation is now the standard for construction of solar arrays. Allowing the native vegetation to remain on site allows it to continue to store carbon from the atmosphere and sequester additional carbon during the life of the project.

Given the current climate change conditions, there is an increasing need for carbon sequestration, not carbon release, therefore, an increasing need to, as a minimum, maintain native plants. The USFWS should be promoting actions that minimize or eliminate the release of carbon into the atmosphere because of the severe adverse effects climate change has on biodiversity and species survival, especially desert species. Please make this change to the EA and make it a condition of the ITP.

Page 22: “Prior to decommissioning the site, a final restoration plan would be developed to meet San Bernadino County requirements applicable at the time of decommissioning.”

The USFWS has authority to require approval of the restoration plan for the project site to ensure that native soil biota and plant species are established at acceptable levels of cover, density, and diversity. Because of the proximity of the site to desert tortoise critical habitat, the USFWS should include a term and condition to the ITP that requires their approval of the restoration plan to ensure that the area is restored using native species with respect to diversity, density, and cover.

Page 22: “No adverse effects to plant communities are anticipated as a result of proposed mitigation.”

Our understanding is that fences will be constructed at the mitigation site and periodic maintenance would likely be needed during the management of the site, which is in perpetuity. These activities would adversely impact vegetation at the mitigation site. Please add this impact and an analysis to the EA.

Page 23: “This section lists special-status and CDNPA species observed or potentially occurring within the Project Area.”

On page 7 of the EA, USFWS says, “This EA will refer to the ‘Project Area’ when referring to the area in which the Proponent proposes to site the solar facility and associated infrastructure.” Thus, the Project Area does not include development and management of the mitigation lands, and proposed desert tortoise translocation areas that could result in effects on desert tortoise (USFWS page 7). Given that the information on special status plants was limited to searching/surveying only the Project Area and that surface disturbance will occur at the translocation area and mitigation sites that is outside the Project Area, we are unsure how the USFWS can conclude on page 25 that “[n]o adverse effects to special-status plant species are anticipated as a result of proposed mitigation and/or translocation activities for the desert tortoise.”

This comment applies to all biotic resources whose observations/data collection were limited to the Project Site. Impacts to biotic resources will occur during the implementation of the translocation, and monitoring of tortoises and the management of the mitigation site. These impacts should be acknowledged in the EA to ensure that separate NEPA analysis is not need before they are implemented.

Page 27, Special Status Wildlife Species: Desert kit fox (*Vulpes macrotis arsipus*) is protected under the California Code of Regulations, Chapter 5, section 460 (14 CCR § 460), which prohibits “take” of DKF for any reason.

CDFW uses the USFWS’s (2011) protocol for San Joaquin kit fox, (<https://www.fws.gov/sites/default/files/documents/survey-protocols-for-the-san-joaquin-kit-fox.pdf>) for surveying for the desert kit fox. We request that information on the methodology implemented when surveying for the desert kit fox and the CDFW’s desert kit fox protocol be added to the EA with respect to the Project Area, the translocation areas, and the mitigation site.

Page 29: “The State of California and the Service have listed the desert tortoise as a threatened species.”

The State of California now lists the desert tortoise as endangered. Please correct the EA to reflect this change that occurred in April 2024.

Page 32: “The HCP describes the translocation procedures and the steps that will be taken to minimize negative impacts of translocation to the individual desert tortoises, including but not limited to releasing [tortoises] only when certain temperature ranges are forecasted, transporting tortoises to their release sites in disinfected ventilated protective containers, and hydrating any desert tortoises that show evidence of dehydration.”

Because the purpose of translocating tortoises is to ensure their long-term survival, we recommend that all tortoises should be hydrated with 12 hours of release. Please see Field et al. (2007) for the importance of hydrating tortoise prior to their release.

In addition, Dickson et al. (2019) reported that their translocation success was likely attributed to numerous factors. They suggest that maximizing “hydration (e.g., by soaking or offering drinking water) of individual tortoises just prior to their release may have lessened the potential for dehydration in the days immediately following translocation.”

Page 32: “Dickson et al. (2019) did not find statistical differences in survival estimates of translocated tortoises compared to resident and control groups over multiple years following translocation, but larger tortoises demonstrated higher survival rates. Short-term effects of translocation include increased movement patterns in the months immediately post-translocation. This behavior change may increase energy expenditure and exposure that may make individuals more susceptible to harm or mortality; however, no differences in mortality probability have been observed from these effects (Brand et al. 2016).”

Please see Mack and Berry (2023). In this paper, the authors reported that numbers of repeatedly used locations (burrows), an indication of settling by translocated tortoises, were a driver of survival of translocated tortoises throughout the study. They discuss that a release in the fall prior to dormancy could force construction of a burrow or shelter within 2–3 weeks and potential settlement before onset of freezing temperatures. In addition, a hard release versus a soft release may affect survival. These factors that may affect survival of translocated tortoises have been presented in other papers (Field et al. 2003, Pille et al. 2018).

In addition, the Mack and Berry (2023) present the following recommendations that should be included in the design and implementation of the translocation plan:

- In-depth evaluations of home sites and release sites for cover and diversity of native perennial shrubs, trees, bunch grasses, and biomass of annual plants by species;
- comparison of proportion of annual biomass in non-native plant species;
- knowledge of the presence, distribution, and abundance of potential predators at release sites including multi-year field evaluations of presence, abundance, and distribution of subsidized and other predators;
- rejection of release sites highly fragmented by dirt and paved roads, routes, trails, campsites, and shooting areas; and
- protection of release sites from vehicles, livestock, feral ungulates, and other related human activities, potentially by fencing or designation as a reserve.

The Applicant should modify the translocation plan to collect and evaluate this information and design a translocation plan using this information so its implementation will maximize tortoise survival based on the best available scientific information.

Page 34 – Mohave ground squirrel: “If this species is confirmed present, or presence is assumed, the Proponent will coordinate with the CDFW regarding the need for compensatory mitigation and/or monitoring for this species.”

Please add that in addition to the need for compensatory mitigation, the Applicant] would need to obtain a section 2081 incidental take permit from CDFW prior to initiating any ground disturbance activities. Given the location, we contend (as we did in our scoping comments for this project) that the Mohave ground squirrel IS present. Has CDFW agreed with the Proponent that Mohave ground squirrel is absent?

Page 35: Please add the California Fish and Game Commission has received a petition to list the southern desert range population of the western burrowing owl as threatened. The geographic range of this population includes the permit area.

Page 36: “An exclusion and mitigation plan will be prepared and submitted to the County of San Bernardino prior to the start of construction activities.”

This mitigation plan and all other mitigation plans mentioned in the Draft EA should be included in the Final EA. Their inclusion allows the public and the decisionmaker the opportunity to review them and determine the effectiveness of the proposed mitigation. Stating that a mitigation plan will be developed, even if this statement includes “using the best available science,” is not adequate or appropriate, as the preparers are not always experts on the best available science for that specific subject. When mitigation plans are included in the public review process, this provides the public with the opportunity to provide comments based on their diverse knowledge and experience regarding the adequacy and soundness of the proposed mitigation plans. This public review process increases the likelihood that the mitigation plans when reviewed and finalized will be effective when implemented.

Page 42, Greenhouse Gas Emissions: “indirect sources include emissions from energy consumption and water demand.”

As mentioned above in our comments on page 22, the clearing of desert vegetation for the solar arrays would result in the release of carbon into the atmosphere that has been sequestered in the plants and roots this contributing to the adverse effects of climate change. Mowing desert vegetation is now the standard for construction of solar arrays. Allowing the native vegetation to remain on site allows it to continue to store carbon from the atmosphere and sequester additional carbon during the life of the project. Please add this impact to this section on environmental consequences to greenhouse gas emissions.

Page 50: “No ground disturbance will occur at the mitigation or proposed recipient sites for the desert tortoise. Therefore, no effects to soils are anticipated as a result of these activities under the Proposed Action.”

As previously mentioned for the HCP, there will be surface disturbance at the mitigation site (e.g., fence construction, ongoing maintenance, vertical mulching, etc.). Please revise this statement to include these impacts.

In addition, we found no analysis of the impacts of the project to soil crusts. Please add a discussion on the function of soil crusts in the Mojave Desert and how they will be impacted by the proposed project.

Page 56: “The proposed Project will not alter existing drainage patterns and stormwater will continue to flow through the site after construction is complete.”

We hope this statement is correct because of the adverse impacts that occur with modification to existing surface flow and drainage patterns. Devitt et al. (2022) reported that “Construction of roads, transmission lines and utility scale solar photovoltaic facilities can decouple up-gradient washes from down-gradient locations.” They reported that the decoupling of the wash system at the solar site “led to a significant decline in soil moisture, canopy level NDVI values and mid-day leaf xylem water potentials.” Over time, especially combined with climate change, this impact may result in reduced plant reproduction, growth, and survival for plants down-gradient of the decoupling sites including potentially large areas of plants down-gradient from the project site.

Page 59, Biological Resources, Cumulative Impacts: “Additionally, these projects are expected to be mitigated to the greatest extent practicable.”

We assume that this statement also applies to the Desert Breeze Solar Project. We request that the USFWS add to the EA an analysis of how this project has been “mitigated to the greatest extent practicable.” We contend that compensating at a ratio of 1:1 does not fully offset the loss of habitat for this project or other projects because it does not mitigate for several indirect effects including edge effects and the temporal loss of the ecological functions and values when the project site is developed. In the Mojave Desert, managing compensation lands (i.e., the mitigation site) so the ecological functions and values are improved to add the function and values lost from development projects may take 15 years or longer (Abella et al. 2015). Thus, a 1:1 compensation ratio does not mitigate for the 15 or more years of the loss of the ecological functions and values of tortoise habitat while waiting for the compensation habitat to “improve.”

One criterion for issuing an incidental take permit is that “the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking [of a listed species].” In the HCP Handbook, the USFWS and NMFS define mitigation as “to offset impacts of taking on the species.” The Handbook uses “fully offset” to mean “completely mitigating any impacts expected to remain after avoidance and minimization measures are implemented. In other words, fully offset means the biological value that will be lost from covered activities will be fully replaced through implementation of conservation measures with equivalent biological value. Fully offset also means the mitigation is commensurate (equal) with the impacts of taking. The statutory standard of minimizing and mitigating the impacts of the take “to the maximum extent practicable” under ESA Section 10(a)(2)(B)(ii) will always be met if the HCP applicant demonstrates that the impacts of the taking will be fully offset by the measures incorporated into the plan. However, the statutory standard will also be met where the applicant demonstrates that while the HCP will not completely offset the impacts of the taking, the minimization and mitigation measures provided in the plan represent the most the applicant can practicably accomplish (USFWS and NMFS 2016).”

In the EA, the USFWS should (1) demonstrate what the remaining impacts are after avoidance and minimization measures are implemented, and (2) demonstrate that either the implementation of the proposed mitigation will fully offset the remaining direct, indirect, and cumulative impacts of the taking or represent the most the Applicant can practicably accomplish. Please include this information in the Final EA.

Pages 56-60: In the cumulative effects analysis of the EA, please ensure that the CEQ's "Considering Cumulative Effects under the National Environmental Policy Act" (1997) is followed, including the eight principles, when analyzing cumulative effects of the proposed action to the affected resource issues.

CEQ states, "Determining the cumulative environmental consequences of an action requires delineating the cause-and-effect relationships between the multiple actions and the resources, ecosystems, and human communities of concern. The range of actions that must be considered includes not only the project proposal but all connected and similar actions that could contribute to cumulative effects." The analysis "must describe the response of the resource to this environmental change." Cumulative impact analysis should "address the sustainability of resources, ecosystems, and human communities."

CEQs guidance on how to analyze cumulative environmental consequences, which contains eight principles listed below:

**1. Cumulative effects are caused by the aggregate of past, present, and reasonable future actions.**

The effects of a proposed action on a given resource, ecosystem, and human community, include the present and future effects added to the effects that have taken place in the past. Such cumulative effects must also be added to the effects (past, present, and future) caused by all other actions that affect the same resource.

**2. Cumulative effects are the total effect, including both direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who (federal, non-federal, or private) has taken the actions.**

Individual effects from disparate activities may add up or interact to cause additional effects not apparent when looking at the individual effect at one time. The additional effects contributed by actions unrelated to the proposed action must be included in the analysis of cumulative effects.

**3. Cumulative effects need to be analyzed in terms of the specific resource, ecosystem, and human community being affected.**

Environmental effects are often evaluated from the perspective of the proposed action. Analyzing cumulative effects requires focusing on the resources, ecosystem, and human community that may be affected and developing an adequate understanding of how the resources are susceptible to effects.

**4. It is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.**

For cumulative effects analysis to help the decision maker and inform interested parties, it must be limited through scoping to effects that can be evaluated meaningfully. The boundaries for evaluating cumulative effects should be expanded to the point at which the resource is no longer affected significantly or the effects are no longer of interest to the affected parties.

**5. Cumulative effects on a given resource, ecosystem, and human community are rarely aligned with political or administrative boundaries.**

Resources are typically demarcated according to agency responsibilities, county lines, grazing allotments, or other administrative boundaries. Because natural and sociocultural resources are not usually so aligned, each political entity actually manages only a piece of the affected resource or ecosystem. Cumulative effects analysis on natural systems must use natural ecological boundaries and analysis of human communities must use actual sociocultural boundaries to ensure including all effects.

**6. Cumulative effects may result from the accumulation of similar effects or the synergistic interaction of different effects.**

Repeated actions may cause effects to build up through simple addition (more and more of the same type of effect), and the same or different actions may produce effects that interact to produce cumulative effects greater than the sum of the effects.

**7. Cumulative effects may last for many years beyond the life of the action that caused the effects.**

Some actions cause damage lasting far longer than the life of the action itself (e.g., acid mine damage, radioactive waste contamination, species extinctions). Cumulative effects analysis needs to apply the best science and forecasting techniques to assess potential catastrophic consequences in the future.

**8. Each affected resource, ecosystem, and human community must be analyzed in terms of its capacity to accommodate additional effects, based on its own time and space parameters.**

Analysts tend to think in terms of how the resource, ecosystem, and human community will be modified given the action's development needs. The most effective cumulative effects analysis focuses on what is needed to ensure long-term productivity or sustainability of the resource.

Note that CEQ recognizes that synergistic and interactive impacts as well as cumulative impacts should be analyzed in the NEPA document for the resource issues. These impacts should be included in the cumulative effects analysis.

We request that the EA (1) include these eight principles in its analysis of cumulative impacts to the Mojave desert tortoise; and (2) address the sustainability of the tortoise in the Superior-Cronese TCA and the West Mojave Recovery Unit.

In addition, we request that USFWS add this project and its impacts to a USFWS database and geospatial tracking system for special status species, including the Mojave desert tortoise, that track cumulative impacts (e.g., surface disturbance, paved and unpaved routes, linear projects, invasive species occurrence, herbicide /pesticide use, wildfires, etc.), management decisions, and effectiveness of mitigation for each project. Without such a tracking system, USFWS is unable to analyze cumulative impacts to special status species (e.g., desert tortoises) with any degree of confidence.

**Connectivity and Wildlife Corridors:** CEQ (2023) recently issued Guidance for Federal Departments and Agencies on Ecological Connectivity and Wildlife Corridors. The purpose of this document is for Federal agencies to consider “how their actions can support the management, long-term conservation, enhancement, protection, and restoration of year-round habitat, seasonal

habitat, stopover habitat, wildlife corridors, watersheds, and other landscape/waterscape/seascape features and processes that promote connectivity.” “The objective is to build consideration of connectivity and corridors into the early steps of these [planning] processes to facilitate easy implementation.”

CEQ applies this guidance to the following areas:

- Agency planning and decision-making
- Science and data
- Collaboration and coordination.

For the first bullet, agency planning and decision-making, CEQ specifically identifies the following focal areas where connectivity and corridors should be considered early in planning, funding, and decision-making:

- Energy development planning and permitting;
- rangeland planning and management;
- hard rock mining and mineral exploration and development planning and permitting;
- public land planning and management;
- recreation planning;
- telecommunications infrastructure and management; and
- transportation planning and use management.

In addition, CEQ identifies best management practices that should be incorporated into planning and decision-making, gathering baseline information to assess public lands for connectivity and corridor values, using science and data to develop performance measures and metrics to assess whether and how federal agencies collectively are promoting greater connectivity across terrestrial habitats.

For the second bullet, science and data, CEQ says. “Federal agencies should address how the best available science and data will inform planning and decision-making, and consider approaches to identify and address gaps in available science and data.” CEQ describes the types of science and data to be used and the sharing of science and data.

For the third bullet, collaboration and coordination, federal agencies “should support strategic collaborations and partnerships to advance work on connectivity and corridors,” and “should promote both intra- and interagency coordination and collaboration, to ensure that planning and information regarding connectivity and corridor efforts are not siloed within individual agencies or within distinct programs within a single agency.” USFWS’s proposed action is adjacent to designated areas with investments in conservation (e.g., designated critical habitat for the tortoise on BLM and private lands). USFWS should reach out to these entities to explore collaborative opportunities to enhance connectivity across jurisdictional boundaries as part of the process in developing and managing the translocations areas in the Superior-Cronese and/or Fremont-Kramer TCAs/CHUs and mitigation site. This collaboration effort and its result should be described in the EA.



Because CEQ has identified energy development planning and permitting as a focal area where connectivity and corridors should be considered early in planning, funding, and decision-making, and because this area is what USFWS is undertaking in its decision-making for the Desert Breeze Solar Project EA and issuance of an ITP, we request that the USFWS explain in the EA how it is complying with this CEQ guidance. Please explain how the action alternative would comply with the purpose and objective of this guidance including enabling “wildlife to adapt to fluctuating environmental conditions, including those caused by climate change.” In addition, the EA and ITP should demonstrate how USFWS is implementing “consistent Federal action on connectivity and corridors” with other federal agencies in agency planning and decision-making, science and data, and collaboration and coordination

We appreciate this opportunity to provide the above comments and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the Council and DTTPC want to be identified as Affected Interests for this and all other projects funded, authorized, or carried out by the County or USFWS that may affect desert tortoises, and that any subsequent environmental documentation for this project is provided to us at the contact information listed above.

Please respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this Project.

Respectfully,



Edward L. LaRue, Jr., M.S.  
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson



Roger Dale  
President  
Desert Tortoise Preserve Committee, President

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